

**AIR EMISSION PERMIT NO. 14100004- 001
IS ISSUED TO**

Northern States Power Company

NSP - Sherburne County
13999 Industrial Boulevard
Becker, Sherburne County, Minnesota 55308

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	February 1996
	Revised, December 15, 1997

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. 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; Phase II Acid Rain

Issue Date: December 28, 1999

Expiration: December 28, 2004

All Title I Conditions do not expire.

Richard J. Sandberg
Manager
Major Facilities Section
Metro District

for Karen A. Studders, Commissioner
Minnesota Pollution Control Agency

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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	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules 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. Certain requirements which have been determined not to apply are listed in Table A of this permit.

FACILITY DESCRIPTION:

The NSP Sherburne County facility has a total plant electrical output rating of 2,255 MW. the plant also supplies steam to an off-site customer. Two boilers (boilers 1 and 2) at the facility are tangentially fired boilers and discharge emissions to the atmosphere through a common 650 foot stack. Boiler 3 at the facility is a front and rear wall-fired boiler and discharges emissions through another 650 foot stack. Boilers 1 and 2 each have a maximum rated heat input capacity of 7,111 MMBtu/hr while boiler 3 is rated at 8,840 MMBtu/hr. Steam for electric power generation is provided by all three boilers and boilers 1 and 2 also supply steam for off-site sale. Approximately 3 percent of the steam from boilers 1 and 2 are used for off-site sale.

Fuel for the facility can come in many forms. Subbituminous coal is the primary fuel for all three main power boilers. Distillate fuel oil is used as an ignition and warm up fuel, while used oil will be burned in accordance with the used oil regulation Minn. R. 7045.

Coal is brought to the facility via railcars and unloaded by physically flipping the railcar and dumping the coal into a hopper. From there it is transferred by conveyor to the coal barn, to the coal stacker in the coal berms area or to scraper loading for transportation to inactive storage. Coal from the coal barn, reclaim areas of the active berms area is transferred to the crushers. Crushed coal is transferred to coal silos for temporary storage prior to pulverizing for combustion in Boilers 1, 2, and 3.

Lime, for use in the control of emissions from Boiler 3, is delivered to the plant site by rail and transferred pneumatically to storage silos and subsequently provided to a lime slurry preparation system. The lime slurry is introduced into the flue gas stream of Boiler 3 in conjunction with a solids recycle stream of fly ash and lime.

The air pollution control equipment for Boilers 1 and 2 consists primarily of spray towers (wet scrubbing) to control particulate and SO₂ emissions in addition to some HAP emissions. A trial installation of a full scale wet electrostatic precipitator (WESP) has completed testing and should be completely operational by the end of 2001. The air pollution control equipment for Boiler 3 consists of a lime slurry in a spray dryer/bag house configuration to control SO₂ and particulate emissions in addition to some HAP emissions.

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 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 Control: 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. Do not cause or permit a building or its appurtenances or a road, or a driveway, or an open area to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne. The Permittee shall take reasonable precautions to prevent the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate. The commissioner may require such reasonable measures as may be necessary to prevent particulate matter from becoming airborne including, but not limited to, paving or frequent clearing of roads, driveways, and parking lots; application of dust-free surfaces; application of water; and the planting and maintenance of vegetative ground cover	Minn. R. 7011.0150 and Minn. R. 7011.1110
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, the Permittee may be required to amend the control plan and/or 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
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
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
Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the modeling for this permit are listed in Appendix II of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates. The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled in the 11/99 modeling submittal. The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
For changes that do not involve an increase in an emission rate and that do not require a permit amendment, this proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit. For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit. For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

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Facility Name: NSP - Sherburne County

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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 and vented to the atmosphere, 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. This requirement does not apply to EU 001, EU 002, and EU 003. For operating limit requirements applicable to EU 001, EU 002, and EU 003, see requirements pertaining to Short Term Emergency and Testing (STET) and Boiler Operating Conditions in EU 001, EU 002, and EU 003.	Minn. R. 7017.2025
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. MONITORING REQUIREMENTS	hdr
Monitoring Activities and Equipment: Where applicable, initialize monitoring activities and install or make needed repairs to monitoring equipment within 60 days after issuance of the permit if monitoring activities are not performed or monitoring equipment is not installed and operational at the time of 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 and where not stated otherwise, 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 or other hardcopy 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
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7007.0800, subp. 6A
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7007.0800, subp. 6A

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

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<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. 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. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp. 1
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

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 001 Auxiliary Boilers 1 & 2**Associated Items:** EU 004 Backup Heating boiler

EU 005 Backup Heating boiler

SV 003

SV 004

What to do	Why to do it
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input using 1-Hour Average	Title I Condition: PSD permit application and impacts analysis; meets requirement of Minn. R. 7011.0510, subp 1
Total Particulate Matter: less than or equal to 0.05 lbs/million Btu heat input (applies individually to each emission unit in GP 001).	Title I Condition: PSD Permit Application and source impacts analysis; meets requirements of Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity (applies individually to each emission unit in GP 001).	Minn. R. 7011.0510, subp. 2
Fuel type limited to distillate (No. 1 or No. 2) fuel oil.	Minn. R. 7007.0800, subp. 2
Record Keeping for Distillate Oil: The Permittee shall obtain a certification from the supplier specifying that each delivery of fuel oil, is distillate fuel oil (#1 or #2 fuel oil).	Title I Condition: PSD permit application and impacts analysis

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 002 Units 1 & 2 coal silos, #1 Coal Crusher House and #1 Transfer House**Associated Items:** CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 019 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 020 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 021 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 022 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 006 Crushers 1 & 2, 5a & 5b Belts

EU 008 Unit 1 short term coal storage (Silo 11)

EU 009 Unit 1 short term coal storage (Silo 12)

EU 010 Unit 2 short term coal storage (Silo 21)

EU 011 Unit 2 short term coal storage (Silo 22)

EU 014 Transfer House #1

SV 005

SV 007

SV 008

SV 009

SV 010

SV 013

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.003 grains/actual cubic foot (applies individually to each emission unit).	Title I Condition: PSD increment analysis for PM-10 and meets requirements of Minn. R. 7009.0020 and Minn. R. 7011.1105
Opacity: less than or equal to 20 percent opacity (applies individually to each emission unit).	Minn. R. 7011.1105
Once during each week of operation of each emission unit in GP 002 and if emissions from the emission unit are vented to the control equipment and then to the atmosphere, observe the corresponding stack/vent for visible emissions. If visible emissions are observed, take corrective action as described in the Facility's Operation and Maintenance plan.	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 action taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 003 Post October 24, 1974 (NSPS subpart Y) Coal Handling Equipment**Associated Items:** CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

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

CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 023 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

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

CE 025 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 026 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 045 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 046 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 007 Crusher 3 & 4, 6a & 6b Belts

EU 012 Unit 3 short term coal storage (Silo 31)

EU 013 Unit 3 short term coal storage (Silos 32)

EU 015 Transfer House #2

EU 016 Transfer House #3

EU 017 Transfer House #4

EU 018 Transfer House #5

EU 019 Coal Barn #1 (East Half)

EU 020 Coal Barn #2 (West Half)

EU 027 #1 Tunnel and #7 Transfer

EU 028 #2 Tunnel

EU 029 #1 Tripper Bypass

EU 030 #1 Tripper Loading

EU 031 #6 Transfer Point

EU 053 Filter Air Receiver, #1 Coal Barn

EU 054 Filter Air Receiver, #2 Coal Barn

EU 055 Filter Air Receiver, Coal Crushing

SV 006

SV 011

SV 012

SV 014

SV 015

SV 016

SV 017

SV 018

SV 019

SV 026

SV 027

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Associated Items: SV 028

SV 029

SV 030

SV 052

SV 053

SV 054

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.003 grains/actual cubic foot (applies individually to each emission unit).	Title I Condition: PSD increment analysis for PM-10 and meets requirements of Minn. R. 7009.0020 and Minn. R. 7011.1105
Opacity: less than 20 percent opacity (applies individually to each emission unit).	40 CFR Section 60.252(c)
Once during each week of operation of each emission unit in GP 003 and if emissions from the emission unit are vented to the control equipment and then to the atmosphere, observe the corresponding stack/vent for visible emissions. If visible emissions are observed, take corrective action as described in the Facility's Operation and Maintenance plan.	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 action taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 004 Ash Handling**Associated Items:** CE 031 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 032 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 033 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 034 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 023 #31 AQCS Solids Silo

EU 024 #32 AQCS Solids Silo

EU 025 #31 AQCS Solids Recycle Silo

EU 026 #32 AQCS Solids Recycle Silo

SV 022

SV 023

SV 024

SV 025

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.003 grains/actual cubic foot (applies individually to each emission unit).	Title I Condition: PSD increment analysis for PM-10 and meets requirements of Minn. R. 7009.0020 and Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (applies individually to each emission unit).	Minn. R. 7011.0715, subp. 1(B)
Once during each week of operation of each emission unit in GP 004 and if emissions from the emission unit are vented to the control equipment and then to the atmosphere, observe the corresponding stack/vent for visible emissions. If visible emissions are observed, take corrective action as described in the Facility's Operation and Maintenance plan.	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 action taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 005 Limestone Handling/Dumping and Lime Receiving

Associated Items: CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 027 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 028 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 035 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 034 Limestone Reclaim Hopper
 EU 035 Limestone Storage Hopper
 EU 036 Lime Receiving Building
 EU 037 #31 Lime Silo
 EU 038 #32 Lime Silo
 SV 033
 SV 034
 SV 035
 SV 036
 SV 037

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.003 grains/actual cubic foot (applies individually to each emission unit).	Title I Condition: PSD increment analysis for PM-10 and meets requirements of Minn. R. 7009.0020 and Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (applies individually to each emission unit).	Minn. R. 7011.0715, subp. 1(B)
Once during each week of operation of each emission unit in GP 005 and if emissions from the emission unit are vented to the control equipment and then to the atmosphere, observe the corresponding stack/vent for visible emissions. If visible emissions are observed, take corrective action as described in the Facility's Operation and Maintenance plan.	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 action taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 006 Rotary Car Dumper, Emergency Reclaim, and Scraper Loading & Unloading**Associated Items:** CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 041 Dust Suppression by Water Spray

EU 032 Emergency Reclaim

EU 033 Scraper Loading & Reclaim

EU 039 Rotary Car Dumper 1

EU 040 Rotary Car Dumper 2

SV 031

SV 032

SV 038

SV 039

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.003 grains/actual cubic foot (applies individually to each emission unit).	Title I Condition: PSD increment analysis for PM-10 and meets requirements of Minn. R. 7009.0020 and Minn. R. 7011.1105
Opacity: less than or equal to 20 percent opacity (applies individually to each emission unit).	Minn. R. 7011.1105
Once during each week of operation of each emission unit in GP 006 and if emissions from the emission unit are vented to the control equipment and then to the atmosphere, observe the corresponding stack/vent for visible emissions. If visible emissions are observed, take corrective action as described in the Facility's Operation and Maintenance plan.	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 action taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

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Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: GP 007 Internal Combustion Engines

Associated Items: EU 045 Diesel Fire Pump
EU 046 Service Water Pump
EU 047 Unit 1 or 2 Emergency Power
EU 048 Unit 3 Backup Power engine 31
EU 049 Unit 3 Backup Power engine 32
EU 050 Emergency/Backup Use - Diesel Air Compressor
SV 044
SV 045
SV 046
SV 047
SV 048
SV 049

What to do	Why to do it
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight (applies individually to each emission unit).	Title I Condition: PSD permit application and impacts analysis; meets requirement of Minn. R. 7011.2300, subp. 2
Opacity: greater than 20 percent opacity once operating temperatures have been attained (applies individually to each emission unit).	Minn. R. 7011.2300, subp. 1
The permittee shall obtain from the fuel supplier, a certification or other record indicating that the fuel delivered is number 1 or 2 diesel or number 1 or 2 fuel oil. A certification shall be obtained for each fuel delivery.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: SV 001**Associated Items:** EU 001 Tangential - Fired Coal Burner

EU 002 Tangential - Fired Coal Burner

MR 001

MR 002

MR 003

MR 004

MR 005

MR 006

MR 007

MR 008

What to do	Why to do it
A. EMISSION LIMITS	hdr
Sulfur Dioxide: less than or equal to 18,080 lbs/hour using 1-Hour Average	Title I Condition: PSD Permit Application and source impacts analysis
Sulfur Dioxide: less than or equal to 16,690 lbs/hour using 3-hour Average	Title I Condition: PSD Permit Application and source impacts analysis
Sulfur Dioxide: less than or equal to 0.96 lbs/million Btu heat input on an annual average and 58,480 tons per year.	Title I Condition: PSD Permit Application and source impacts analysis
Particulate Matter < 10 micron: less than or equal to 2560 lbs/hour	Title I Condition: PSD Permit Application and source impacts analysis and Minn. R. 7009.0020
B. MONITORING REQUIREMENTS	hdr
Use the SO2 CEMS on SV 001 to measure SO2 emissions in lb/mmBtu.	Title I Condition: PSD Permit Application and source impacts analysis; Minn. R. 7017.1006
Emissions Monitoring: The owner or operator shall measure SO2, NOx, and CO2 emissions, and exhaust gas flow rate for each affected unit in accordance with 40 CFR Section 75.10.	40 CFR pt. 75
Emissions Monitoring: The owner or operator shall measure the opacity emissions from SV 001.	Minn. R. 7017.1006; 40 CFR Section 75
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 Permit Issuance . 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 Permit Issuance . 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 CEMS according to the QA/QC procedure in 40 CFR pt. 75, Appendix B as amended.	40 CFR Section 75.21
CEMS and COMS Continuous Operation: Except for system downtime due to damage from unavoidable events, sudden and not reasonably preventable monitor breakdowns, scheduled monitor maintenance, daily drift checks, calibration error audits, linearity checks, relative accuracy test audits and cylinder gas audits, all CEMS and COMS shall be in continuous operation.	Minn. R. 7017.1090
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 the specifications of PS-1 of 40 CFR Section 60, Appendix B.	Minn. R. 7017.1210, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7017.1210, subp. 3
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to six-minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the six-minute averaging period.	Minn. R. 7007.0800, subp. 2
C. TESTING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Performance Test: due before end of each 36 months starting 10/28/1998 to measure particulate matter emissions. A year is defined as twelve months. The tests shall be conducted at an interval not to exceed 36 months between test dates. Each test shall consist of a minimum of three runs in accordance with Minn. R. 7017.2001-7017.2060.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 36 months starting 10/28/1998 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4
D. RECORD KEEPING	hdr
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5 and Minn. R. 7017.1130
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5 and Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: EU 001 Tangential - Fired Coal Burner

Associated Items: CE 038 Wet Scrubber-High Efficiency w/o Lime

CE 047 Modified Furnace or Burner Design

CE 051 Electrostatic Precipitator - High Efficiency

SV 001

What to do	Why to do it																																								
A. EMISSION LIMITS	hdr																																								
Sulfur Dioxide: not to exceed 30 percent of the CE 038 inlet concentration when the inlet concentrations are 0.8 lbs/MMBtu to 1.6 lbs/MMBtu. When inlet concentrations exceed 1.6 lbs/MMBtu, the SO ₂ emission rate in lbs/MMBtu is limited to $[(0.6 \times IC) - 0.48 \text{ lbs/MMBtu}]$, where IC = inlet concentration in lbs SO ₂ /MMBtu. When the inlet concentration is less than 0.8 lbs/MMBtu the unit is subject to a limit of 0.24 lbs/MMBtu. Emissions are calculated daily on a 90-day rolling average basis. Under no circumstances shall there be a 90-day rolling average emission of Sulfur Dioxide: greater than 0.96 lbs/million Btu heat input	June 10, 1983 Settlement Agreement; meets requirements of Minn. R. 7011.0510, subp. 1																																								
Limit SO ₂ as a function of inlet SO ₂ concentration in accordance with the following: <table> <tr> <th>Inlet (Coal) lbs/MMBtu</th><th>Stack Emissions lb/MMBtu</th></tr> <tr><td><0.8</td><td>0.24</td></tr> <tr><td>0.8</td><td>0.24</td></tr> <tr><td>0.9</td><td>0.27</td></tr> <tr><td>1.0</td><td>0.30</td></tr> <tr><td>1.1</td><td>0.33</td></tr> <tr><td>1.2</td><td>0.36</td></tr> <tr><td>1.3</td><td>0.39</td></tr> <tr><td>1.4</td><td>0.42</td></tr> <tr><td>1.5</td><td>0.45</td></tr> <tr><td>1.6</td><td>0.48</td></tr> <tr><td>1.7</td><td>0.54</td></tr> <tr><td>1.8</td><td>0.60</td></tr> <tr><td>1.9</td><td>0.66</td></tr> <tr><td>2.0</td><td>0.72</td></tr> <tr><td>2.1</td><td>0.78</td></tr> <tr><td>2.2</td><td>0.84</td></tr> <tr><td>2.3</td><td>0.90</td></tr> <tr><td>2.4</td><td>0.96</td></tr> <tr><td>>2.4</td><td>0.96</td></tr> </table>	Inlet (Coal) lbs/MMBtu	Stack Emissions lb/MMBtu	<0.8	0.24	0.8	0.24	0.9	0.27	1.0	0.30	1.1	0.33	1.2	0.36	1.3	0.39	1.4	0.42	1.5	0.45	1.6	0.48	1.7	0.54	1.8	0.60	1.9	0.66	2.0	0.72	2.1	0.78	2.2	0.84	2.3	0.90	2.4	0.96	>2.4	0.96	June 10, 1983 Settlement Agreement; meets requirements of Minn. R. 7011.0510, subp. 1
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Opacity: less than or equal to 55 percent opacity using 6-minute Average period, and 42 percent opacity based on a monthly averaging period, except that 0.4 percent of the six-minute averages may exceed 55 percent opacity. This limit applies only to data produced by the COM on SV 001. The calculation of percentage of exceedances shall be based on a 365-day rolling average. This opacity limit shall be replaced by Minn. R. 7011.0510, subp. 2 on December 31, 2001, or the date on which replacement or additional air pollution control equipment for reduction of opacity, is installed and operational, whichever comes first. "Operational" means 30 days after the date of completion of control equipment installation.	Minn. R. 7007.0800, subp. 2																																								
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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)																																								

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

<p>NOx Averaging Plan</p> <p>Beginning January 1, 2000 either:</p> <p>Maintain an annual average NOx emission rate of 0.28 lbs/MMBtu and maintain the annual heat input to greater than or equal to 42,255,000 MMBtu per year.</p> <p>OR</p> <p>Maintain a Btu-weighted 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 Btu-weighted annual average emission rate averaged over the same units had they each 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>Allen 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#	Allen 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	<p>40 CFR pt. 76</p>
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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: subbituminous coal, distillate oil, and used oils and spill cleanup materials.	Minn. R. 7007.0800, subp. 2														
Petroleum-derived used oils, contaminated soils, rags and other absorbents generated on site or within the NSP system can be burned at a maximum of 10 percent of total fuel mass input.	Minn. R. 7007.0800, subp. 2														
Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045.	Minn. R. 7007.0800, subp. 2														
NSP generated boiler chemical cleaning waste limited to: the lessor of 5% of the heat or mass input to the boiler, unless good combustion is demonstrated at a higher flow rate; cleaning waste shall be introduced into 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, amounts, origin of material, cleaning agent boiler feed rate, and operating capacity of the boiler during incineration, including steam flow. The Permittee is not authorized for subsequent disposals of cleaning agents at the higher burn rate until written approval has been received from the MPCA.	Minn. R. 7007.0800, subp. 2														
Calculate: 1) the 365-day average percentage of six-minute average opacity values above 55 percent on a daily basis, and 2) the monthly average opacity. Keep these calculations and the underlying data on site and submit the results of those calculations to the MPCA on a quarterly basis during the interim Opacity limit time period (due 30 days after the end of the quarter).	Minn. R. 7007.0800, subp. 2														
The air pollution control equipment for EU 001 shall be operated whenever the boiler is in operation, except during startup or shutdown.	Minn. R. 7007.0800, subp. 14														
Determine control equipment inlet SO2 concentration according to the fuel sampling and analysis option of Method 19 in 40 CFR pt. 60, Appendix A. Determine SO2 emission rate using the SO2 CEMS on SV 001.	Minn. R. 7007.0800, subp. 2														
C. TESTING REQUIREMENTS	hdr														
<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>	<p>Minn. R. 7007.0800, subp. 2.</p>														

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

<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 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 an existing permit condition</p>	Minn. R. 7007.0800, subp. 2.
D. RECORD KEEPING	hdr
<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)
E. REPORTING	hdr
<p>Notification of completion of control equipment modification: notify the agency of the actual date of completion of the installation of wet electrostatic precipitators on EU 001, no later than 14 days after completion.</p>	Minn. R. 7007.0800, subp. 2
<p>If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR Section 72.9(e).</p>	40 CFR Section 72.9(e)
<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

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: EU 002 Tangential - Fired Coal Burner

Associated Items: CE 039 Wet Scrubber-High Efficiency w/o Lime
CE 040 Electrostatic Precipitator - High Efficiency
CE 048 Modified Furnace or Burner Design
SV 001

What to do	Why to do it																																								
A. EMISSION LIMITS	hdr																																								
Sulfur Dioxide: not to exceed 30 percent of the CE 038 inlet concentration when the inlet concentrations are 0.8 lbs/MMBtu to 1.6 lbs/MMBtu. When inlet concentrations exceed 1.6 lbs/MMBtu, the SO ₂ emission rate in lbs/MMBtu is limited to $[(0.6 \times IC) - 0.48 \text{ lbs/MMBtu}]$, where IC = inlet concentration in lbs SO ₂ /MMBtu. When the inlet concentration is less than 0.8 lbs/MMBtu the unit is subject to a limit of 0.24 lbs/MMBtu. Emissions are calculated daily on a 90-day rolling average basis. Under no circumstances shall there be a 90-day rolling average emission of Sulfur Dioxide: greater than 0.96 lbs/million Btu heat input	June 10, 1983 Settlement Agreement; meets requirements of Minn. R. 7011.0510, subp. 1																																								
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TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

<p>NOx Averaging Plan</p> <p>Beginning January 1, 2000 either:</p> <p>Maintain an annual average NOx emission rate of 0.28 lbs/MMBtu and maintain the annual heat input to greater than or equal to 42,255,000 MMBtu per year.</p> <p>OR</p> <p>Maintain a Btu-weighted 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 Btu-weighted annual average emission rate averaged over the same units had they each 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>Allen 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#	Allen 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	<p>40 CFR pt. 76</p>
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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: subbituminous coal, distillate oil, and used oils and spill cleanup materials.	Minn. R. 7007.0800, subp. 2														
Petroleum-derived used oils, contaminated soils, rags and other absorbents generated on site or within the NSP system can be burned at a maximum of 10 percent of total fuel mass input.	Minn. R. 7007.0800, subp. 2														
Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045.	Minn. R. 7007.0800, subp. 2														
NSP generated boiler chemical cleaning waste limited to: the lessor of 5% of the heat or mass input to the boiler, unless good combustion is demonstrated at a higher flow rate; cleaning waste shall be introduced into 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, amounts, origin of material, cleaning agent boiler feed rate, and operating capacity of the boiler during incineration, including steam flow. The Permittee is not authorized for subsequent disposals of cleaning agents at the higher burn rate until written approval has been received from the MPCA.	Minn. R. 7007.0800, subp. 2														
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The air pollution control equipment for EU 002 shall be operated whenever the boiler is in operation, except during startup or shutdown.	Minn. R. 7007.0800, subp. 14														
C. TESTING REQUIREMENTS	hdr														
<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>	<p>Minn. R. 7007.0800, subp. 2.</p>														

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

<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 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 an existing permit condition</p>	Minn. R. 7007.0800, subp. 2.
D. RECORD KEEPING	hdr
<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)
E. REPORTING	hdr
<p>Notification of completion of control equipment modification: notify the agency of the actual date of completion of the installation of wet electrostatic precipitators on EU 002, no later than 14 days after completion.</p>	Minn. R. 7007.0800, subp. 2
<p>If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR Section 72.9(e).</p>	40 CFR Section 72.9(e)
<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

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: EU 003 Opposed - Fired Coal Burner

Associated Items: CE 036 Gas Scrubber (General, Not Classified)

CE 037 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

CE 049 Modified Furnace or Burner Design

MR 009

MR 010

MR 011

MR 012

MR 013

MR 014

MR 015

MR 016

SV 002

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input	Title I Condition: PSD permit application and source impacts analysis; 40 CFR Section 60.42a(a)
Particulate Matter < 10 micron: less than or equal to 530 lbs/hour	Minn. R. 7009.0020
Opacity: less than or equal to 20 percent opacity using 6-minute Average except for one six-minute period per hour of not more than 27 percent opacity.	40 CFR Section 60.42a(b)
Sulfur Dioxide: less than or equal to 0.60 lbs/million Btu heat input and 30 percent of the potential combustion concentration (70 percent SO ₂ reduction), and less than or equal to 0.61 lbs/million Btu heat input and 10 percent of the potential combustion concentration (90 percent SO ₂ reduction), when burning coal. Calculate emissions on a 30-day rolling average according to 40 CFR Section 60.46a.	Title I Condition: 40 CFR Section 52.21 BACT limit; meets requirements of 40 CFR Section 60.43a(a)
Sulfur Dioxide: less than or equal to 0.61 lbs/million Btu heat input and not to exceed 10 percent of the potential combustion concentration, when burning coal with distillate oil. When burning coal with distillate oil and emissions are less than or equal to 0.60 lbs/million Btu, emissions shall not exceed the potential combustion concentration determined as follows: $\%P = (10x + 30y) / 100$ <p>%P = percent potential combustion concentration x = percent total heat input from distillate fuel oil y = percent total heat input from coal</p> <p>Calculate emissions on a 30-day rolling average according to 40 CFR Section 60.46a.</p>	Title I Condition: 40 CFR Section 52.21 BACT limit; meets requirements of 40 CFR Section 60.43a(h)
Sulfur Dioxide: less than or equal to 10,834 lbs/hour using 1-Hour Average	Title I Condition: PSD Permit Application and source impacts analysis
Sulfur Dioxide: less than or equal to 10,001 lbs/hour using 3-hour Average	Title I Condition: PSD Permit Application and source impacts analysis
Sulfur Dioxide: less than or equal to 0.60 lbs/million Btu heat input using an annual average.	Title I Condition: PSD Permit Application and source impacts analysis
The sulfur dioxide emission standards based on the BACT limit, apply at all times except during periods of startup, shutdown, and when both emergency conditions exist and the procedures in section 60.46a(d) are implemented.	Minn. R. 7007.0800, subp. 2
Nitrogen Oxides: less than or equal to 0.50 lbs/million Btu heat input using 30-day Rolling Average when burning coal. When distillate oil is burned with coal, the applicable standard is determined by the formula in 40 CFR Section 60.44a(c). Determine NO _x emission rate according to the procedures in 40 CFR Section 60.46a.	40 CFR Section 60.44a
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)

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

<p>NOx Averaging Plan</p> <p>Beginning January 1, 2000 either:</p> <p>Maintain an annual average NOx emission rate of 0.35 lbs/MMBtu and maintain the annual heat input to greater than or equal to 34,912,000 MMBtu per year.</p> <p>OR</p> <p>Maintain a Btu-weighted 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 Btu-weighted annual average emission rate averaged over the same units had they each 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>Allen 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#	Allen 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	<p>40 CFR pt. 76</p>
Plant	Boiler ID#														
Allen 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														
<p>The particulate matter emission standards under 40 CFR Section 60.42a and the nitrogen oxides emission standards under section 40 CFR Section 60.44a apply at all times except during periods of startup, shutdown, or malfunction.</p>	<p>40 CFR Section 60.46a(c)</p>														
<p>B. OPERATIONAL REQUIREMENTS</p>	<p>hdr</p>														
<p>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.</p>	<p>40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9 (g)(4)</p>														
<p>Allowed fuel types: subbituminous coal, distillate oil, and used oils and spill cleanup materials. The Permittee may also incinerate boiler cleaning agents in EU 003.</p>	<p>Minn. R. 7007.0800, subp. 2</p>														
<p>Petroleum-derived used oils, contaminated soils, rags and other absorbents generated on site or within the NSP system can be burned at a maximum of 10 percent of total fuel mass input.</p>	<p>Minn. R. 7007.0800, subp. 2</p>														
<p>Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045.</p>	<p>Minn. R. 7007.0800, subp. 2</p>														
<p>NSP generated boiler chemical cleaning waste limited to: the lessor of 5% of the heat or mass input to the boiler, unless good combustion is demonstrated at a higher flow rate; cleaning waste shall be introduced into 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, amounts, origin of material, cleaning agent boiler feed rate, and operating capacity of the boiler during incineration, including steam flow. The Permittee is not authorized for subsequent disposals of cleaning agents at the higher burn rate until written approval has been received from the MPCA.</p>	<p>Minn. R. 7007.0800, subp. 2</p>														
<p>C. MONITORING REQUIREMENTS</p>	<p>hdr</p>														
<p>Measure SO2 emissions using certified SO2 CEMS as prescribed in 40 CFR Section 60.47a(b).</p>	<p>Title I Condition: PSD Permit Application and source impacts analysis; Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1006</p>														
<p>Determine control equipment inlet SO2 concentration using the fuel sampling and analysis option of Method 19 in 40 CFR pt. 60, Appendix A. Determine SO2 emission rate using the SO2 CEMS on SV 002.</p>	<p>40 CFR Section 60.48a(c); Minn. R. 7007.0800, subp. 2</p>														
<p>Install, calibrate, operate, and maintain a CEMS to measure CO2 or O2 at each location that SO2 or NOx emissions are monitored.</p>	<p>40 CFR Section 60.47a(d)</p>														
<p>Measure NOx emissions using certified NOx CEMS.</p>	<p>40 CFR Section 60.47a(c)</p>														
<p>Measure opacity using certified COM.</p>	<p>40 CFR Section 60.47a(a); Minn. R. 7017.1006</p>														
<p>CEMS and COMS Continuous Operation: Except for system downtime due to damage from unavoidable events, sudden and not reasonably preventable monitor breakdowns, scheduled monitor maintenance, daily drift checks, calibration error audits, linearity checks, relative accuracy test audits and cylinder gas audits, all CEMS and COMS shall be in continuous operation.</p>	<p>Minn. R. 7017.1090</p>														
<p>COMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all COMS shall be in continuous operation.</p>	<p>40 CFR Section 60.13(e)</p>														
<p>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 the specifications of PS-1 of 40 CFR Section 60, Appendix B.</p>	<p>Minn. R. 7017.1210 subp. 2; 40 CFR Section 60.13(d)</p>														

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7017.1210, subp. 3
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to six-minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points during the six-minute averaging period.	40 CFR Section 60.13(e)(1) 40 CFR Section 60.13(h)
The owner or operator shall measure SO ₂ , NO _x , and CO ₂ emissions, and exhaust gas flow rate, for each affected unit in accordance with 40 CFR pt. 75.	40 CFR pt. 75
CEMS QA/QC: The owner or operator of an affected facility shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 75, Appendix B as amended for Part 75 CEMS and 40 CFR pt. 60, Appendix F as amended for Part 60 CEMS.	40 CFR Section 75.21
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 Permit Issuance . 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 Permit Issuance . 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
The permittee shall obtain the minimum amount of NO _x CEMS data as prescribed in 40 CFR Section 60.47a(f). If the permittee can not meet these minimum requirements for NO _x monitoring, the permittee shall follow the requirements of 40 CFR Section 60.47a(h).	40 CFR Section 60.47a(f); Minn. R. 7007.0800, subp. 2
The air pollution control equipment for EU 003 shall be operated whenever the boiler is in operation	Minn. R. 7007.0800, subp. 14
D. TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure particulate matter less than 10 microns (PM-10) emissions. The tests shall be conducted at an interval to be determined following analysis of the test results, but not to exceed 60 months between test dates. Each test shall consist of a minimum of three runs in accordance with Minn. R. 7017.2001-7017.2060.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4
Boiler Alternative Operating Conditions for Performance Testing: 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. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2.
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: 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: (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. (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. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2.
STET (Short Term Emergency and Testing) Operating Hours Limit: 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.	Minn. R. 7007.0800, subp. 2.

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

<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 an existing permit condition</p>	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 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)(1)
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5; and Minn. R. 7017.1130; 40 CFR Section 75.50
The permittee shall obtain the minimum amount of SO ₂ CEMS data as prescribed in 40 CFR Section 60.47a(f). If the permittee can not meet these minimum requirements for SO ₂ monitoring, the permittee shall follow the requirements of 40 CFR Section 60.47a(h).	40 CFR Section 60.47a(f); Minn. R. 7007.0800, subp. 2
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5; and Minn. R. 7017.1130
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 Section 72.9(e).	40 CFR Section 72.9(e)

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: CE 037 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F**Associated Items:** EU 003 Opposed - Fired Coal Burner

What to do	Why to do it
Opacity: less than or equal to 10 percent using 3-hour Average from SV 002.	Minn. R, 7007.0800, subp. 4
Record Keeping: Record all three (3) hour block averages of opacity from SV 002. The 3-hour block averages shall be calculated by averaging all 6 minute averages from the previous 3-hour block period starting at 2400 each day.	Minn. R, 7007.0800, subp. 4
Record and Report all episodes, with a duration more than one hour, of instrument (COM) measured opacity greater than 10 percent from SV 002. Report these episodes as a breakdown and follow the requirements stated in the Breakdown Notification requirement. Breakdown Notification is not required for equipment breakdowns that do not result in greater than 10 percent opacity for more than one hour in SV 002.	Minn. R, 7019.1000, subp. 2B

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: CE 038 Wet Scrubber-High Efficiency w/o Lime**Associated Items:** EU 001 Tangential - Fired Coal Burner

What to do	Why to do it
Pressure Drop: greater than or equal to 15 inches of water column and less than or equal to 27 inches of water column using 3-hour Average during all periods of associated boiler operation. This is the pressure drop across the entire wet scrubber system if there is an operating wet scrubber module that is NOT a Wet ESP module.	Minn. R, 7007.0800, subp. 14
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 27 inches of water column using 3-hour Average during all periods of associated boiler operation. This is the pressure drop across the entire wet scrubber system when all of the operating wet scrubber modules are Wet ESP modules.	Minn. R, 7007.0800, subp. 14
Monitor the pressure drop across the entire wet scrubber system during all periods of associated boiler operation. Three (3)-hour block averages shall be calculated by using all pressure drop one (1)-minute averages from the previous 3-hour block period starting at 2400 each day.	Minn. R, 7007.0800, subp. 4 and 5
Pressure Gauge Calibration Schedule: Calibrate wet scrubber module pressure sensors once every 36 month period starting May 17, 1998.	Minn. R, 7007.0800, subp. 4
Wet ESP and Wet Scrubber Module Operation: Monitor and record the minutes of operation of each Wet Scrubber module (1 through 12). Monitor and record the minutes of each corresponding and concurrent Wet Scrubber module (1 through 12) and Wet ESP module (1 through 12), operation. Both fields within a Wet ESP module shall be in operation to qualify as an operating Wet ESP module.	Minn. R, 7007.0800, subp. 4
Alternative Periodic Monitoring: Following installation of all 12 Wet-ESP modules the owner or operator may substitute the previous monitoring requirements with the three requirements below provided the following occurs: 1. Opacity values from SV 001 are below 20 percent during all times except startup, shutdown, and breakdown periods. 2. An Engineering Test to measure particulate matter in conjunction with opacity monitoring is conducted on SV 001 during operation of both EU 001 and EU 002. The engineering test shall consist of three 1-hour test runs with a single 1-hour test run conducted at each combined boiler load of 40 to 50, 70 to 80 and 90 to 100 percent. Each boiler shall be operated within the three specified ranges. 3. Correlation of opacity and particulate matter emissions data showing opacity limit is more limiting than particulate limit. 4. Written MPCA staff approval of the engineering test and opacity/particulate correlation.	Minn. R, 7007.0800, subp. 4
Opacity: less than or equal to 20 percent using 3-hour Average from SV 001.	Minn. R, 7007.0800, subp. 4
Record Keeping: Record all three (3) hour block averages of opacity from SV 001. The 3-hour block averages shall be calculated by averaging all 6 minute averages within each 3-hour block period starting at 2400 each day.	Minn. R, 7007.0800, subp. 4
Record and Report all episodes of instrument (COM) measured opacity greater than 20 percent on a 1-hour average from SV 001. Report these episodes as a breakdown and follow the requirements stated in the Breakdown Notification requirement. Breakdown Notification is not required for equipment breakdowns that do not result in measured opacity greater than 20 percent on a 1-hour average from SV 001.	Minn. R, 7019.1000, subp. 2B

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: CE 039 Wet Scrubber-High Efficiency w/o Lime**Associated Items:** EU 002 Tangential - Fired Coal Burner

What to do	Why to do it
Pressure Drop: greater than or equal to 15 inches of water column and less than or equal to 27 inches of water column using 3-hour Average during all periods of associated boiler operation. This is the pressure drop across the entire wet scrubber system if there is an operating wet scrubber module that is NOT a Wet ESP module.	Minn. R, 7007.0800, subp. 14
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 27 inches of water column using 3-hour Average during all periods of associated boiler operation. This is the pressure drop across the entire wet scrubber system when all of the operating wet scrubber modules are Wet ESP modules.	Minn. R, 7007.0800, subp. 14
Monitor the pressure drop across the entire wet scrubber system during all periods of associated boiler operation. Three (3)-hour block averages shall be calculated by using all pressure drop one (1)-minute averages from the previous 3-hour block period starting at 2400 each day.	Minn. R, 7007.0800, subp. 4 and 5
Pressure Gauge Calibration Schedule: Calibrate wet scrubber module pressure sensors once every 36 month period starting March 5, 1998.	Minn. R, 7007.0800, subp. 4
Wet ESP and Wet Scrubber Module Operation: Monitor and record the minutes of operation of each Wet Scrubber module (1 through 12). Monitor and record the minutes of each corresponding and concurrent Wet Scrubber module (1 through 12) and Wet ESP module (1 through 12), operation. Both fields within a Wet ESP module shall be in operation to qualify as an operating Wet ESP module.	Minn. R, 7007.0800, subp. 4
Alternative Periodic Monitoring: Following installation of all 12 Wet-ESP modules the owner or operator may substitute the previous monitoring requirements with the three requirements below provided the following occurs: 1. Opacity values from SV 001 are below 20 percent during all times except startup, shutdown, and breakdown periods. 2. An Engineering Test to measure particulate matter in conjunction with opacity monitoring is conducted on SV 001 during operation of both EU 001 and EU 002. The engineering test shall consist of three 1-hour test runs with a single 1-hour test run conducted at each combined boiler load of 40 to 50, 70 to 80 and 90 to 100 percent. Each boiler shall be operated within the three specified ranges. 3. Correlation of opacity and particulate matter emissions data showing opacity limit is more limiting than particulate limit. 4. Written MPCA staff approval of the engineering test and opacity/particulate correlation.	Minn. R, 7007.0800, subp. 4
Opacity: less than or equal to 20 percent using 3-hour Average from SV 001.	Minn. R, 7007.0800, subp. 4
Record Keeping: Record all three (3) hour block averages of opacity from SV 001. The 3-hour block averages shall be calculated by averaging all 6 minute averages within each 3-hour block period starting at 2400 each day.	Minn. R, 7007.0800, subp. 4
Record and Report all episodes of instrument (COM) measured opacity greater than 20 percent on a 1-hour average from SV 001. Report these episodes as a breakdown and follow the requirements stated in the Breakdown Notification requirement. Breakdown Notification is not required for equipment breakdowns that do not result in measured opacity greater than 20 percent on a 1-hour average from SV 001.	Minn. R, 7019.1000, subp. 2B

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: FS 009 PM-10 Truck Hauling Traffic, Paved**Associated Items:** CE 041 Dust Suppression by Water Spray

What to do	Why to do it
Truck Traffic: less than or equal to 50 trucks/day . This limit applies to the Unit 3 ash trucks hauling ash to the Unit 3 ash landfill. The limit is 50 rounds trips per day from the Unit 3 ash loading station to the landfill	Title I Condition: PSD Increment for PM-10
Recordkeeping: Daily record the number of truck transfers of fly ash from the Unit 3 ash loading station to the Unit 3 ash landfill.	Title I Condition: PSD Increment for PM-10

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: FS 010 PM-10 Truck Hauling Traffic, Unpaved**Associated Items:** CE 041 Dust Suppression by Water Spray

What to do	Why to do it
Truck Traffic: less than or equal to 50 trucks/day . This limit applies to the Unit 3 ash trucks hauling ash to the Unit 3 ash landfill. The limit is 50 rounds trips per day from the Unit 3 ash loading station to the landfill	Title I Condition: PSD Increment for PM-10
Recordkeeping: Daily record the number of truck transfers of fly ash from the Unit 3 ash loading station to the Unit 3 ash landfill.	Title I Condition: PSD Increment for PM-10

TABLE A: LIMITS AND OTHER REQUIREMENTS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

Subject Item: FS 020 PM-10 Coal Transloading**Associated Items:** CE 041 Dust Suppression by Water Spray

What to do	Why to do it
Process Throughput: less than or equal to 1,944 tons/day of coal transloaded for shipment off-site.	Minn. R. 7009.0020
Record keeping - Coal Transloading: Once each day, following a day in which coal transloading occurred, record the tons of coal transloaded the previous day.	Minn. R. 7007.0800, subp. 2

TABLE B: SUBMITTALS

12/28/99

Facility Name: NSP - Sherburne County
Permit Number: 14100004 - 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

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 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, EU002, EU003
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	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
Performance Test Notification (written)	due 30 days before Performance Test	EU003
Performance Test Plan	due 30 days before Performance Test	EU003
Performance Test Report - Microfiche Copy	due 105 days after Performance Test	EU003
Performance Test Report	due 45 days after Performance Test	EU003
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA)	EU003, SV001
Testing Frequency Plan	due 60 days after Initial Performance Test for particulate matter less than 10 microns (PM-10) emissions. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1.	EU003

TABLE B: RECURRENT SUBMITTALS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

What to send	When to send	Portion of Facility Affected
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 (after expiration of the interim Opacity limit) and SO ₂ including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	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.	EU003
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance for opacity emissions during the interim opacity limit time period. The opacity report shall include: A) the percentage of six-minute average opacity values above 55 percent for each day in the quarter; B) the maximum 365-day average percentage of six-minute averages above 55 percent for any 365-day period ending during the quarter; and C) the average opacity for each calendar month. 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.	EU003
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) .	EU003, SV001
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit	EU003
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 starting 01/01/2000. 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, EU002
Compliance Certification Report (Acid Rain Program)	due 60 days after end of each calendar year starting 01/01/2000. 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).	EU003
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (January 30th).	Total Facility

TABLE B: RECURRENT SUBMITTALS

12/28/99

Facility Name: NSP - Sherburne County

Permit Number: 14100004 - 001

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 36 months starting 10/28/1998 (30 days before each Performance Test)	SV001
Performance Test Plan	due 30 days before end of each 36 months starting 10/28/1998 (30 days before each Performance Test)	SV001
Performance Test Report - Microfiche Copy	due 105 days after end of each 36 months starting 10/28/1998 (105 days after each Performance Test)	SV001
Performance Test Report	due 45 days after end of each 36 months starting 10/28/1998 (45 days after each Performance Test)	SV001

APPENDIX I

Facility Name: NSP - Sherburne County

Permit Number: 14100004-001

Phase II NO_x Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

This submission is:

☒

New

☐

Revised

Step 1 Indicate plant name, State, and ORIS code from NADB, if applicable	Sherburne County	MN	6090
	Plant Name	State	ORIS Code

Step 2 Identify each affected Group 1 and Group 2 boiler using the boiler ID# from NADB, if applicable. Indicate boiler type: “CB” for cell burner, “CY” for cyclone, “DBW” for dry bottom wall-fired, “T” for tangentially fired, “V” for vertically fired, and “WB” for wet bottom. Indicate the compliance option selected for each unit

ID# 1	ID# 2	ID# 3	ID#	ID#	ID#
T	T	DBW			
Type	Type	Type	Type	Type	Type

(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for <u>Phase I</u> dry bottom wall-fired boilers)						
(b) Standard annual average emission limitation of						

0.45 lb/mmBtu (for <u>Phase I</u> tangentially fired boilers)						
(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)						
(d) Standard annual average emission limitation of 0.46 lb/mmBtu (for <u>Phase II</u> dry bottom wall-fired boilers)						
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for <u>Phase II</u> tangentially fired boilers)						
(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)						
(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)						
(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)						
(i) Standard annual						

average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)						
(j) NO_x Averaging Plan (include NO_x Averaging form)	X	X	X			
(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack						
(l) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO_x Averaging (check the NO_x Averaging Plan box and include NO_x Averaging form)	X	X				
(m) EPA-approved common stack apportionment method pursuant to 40 CFR 75.17 (a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)						
(n) AEL (include Phase II AEL Demonstration Period, Final AEL Petition, or AEL Renewal form as appropriate)						
(o) Petition for AEL demonstration period or final AEL under review by U.S. EPA or demonstration period						

ongoing						
(p) Repowering extension plan approved or under review						

Standard Requirements

General. This source is subject to the standard requirements in 40 CFR 72.9 (consistent with 40 CFR 76.8(e)(1)(i)). These requirements are listed in this source's Acid Rain Permit.

Special Provisions for Early Election Units

Nitrogen Oxides. A unit that is governed by an approved early election plan shall be subject to an emissions limitation for NO_x as provided under 40 CFR 76.8(a)(2) except as provided under 40 CFR 76.8(e)(3)(iii).

Liability. The owners and operators of a unit governed by an approved early election plan shall be liable for any violation of the plan or 40 CFR 76.8 at that unit. The owners and operators shall be liable, beginning January 1, 2000, for fulfilling the obligations specified in 40 CFR Part 77.

Termination. An approved early election plan shall be in effect only until the earlier of January 1, 2008 or January 1 of the calendar year for which a termination of the plan takes effect. If the designated representative of the unit under an approved early election plan fails to demonstrate compliance with the applicable emissions limitation under 40 CFR 76.5 for any year during the period beginning January 1 of the first year the early election takes effect and ending December 31, 2007, the permitting authority will terminate the plan. The termination will take effect beginning January 1 of the year after the year for which there is a failure to demonstrate compliance, and the designated representative may not submit a new early election plan. The designated representative of the unit under an approved early election plan may terminate the plan any year prior to 2008 but may not submit a new early election plan. In order to terminate the plan, the designated representative must submit a notice under 40 CFR 72.40(d) by January 1 of the year for which the termination is to take effect. If an early election plan is terminated any year prior to 2000, the unit shall meet, beginning January 1, 2000, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7. If an early election plan is terminated on or after 2000, the unit shall meet, beginning on the effective date of the termination, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7.

Phase II NO_x Averaging Plan

For more information, see instructions and refer to 40 CFR 76.11

This submission is: New ☐ ☒ Revised

Step 1

Identify the units participating in this averaging plan by plant name, State, and boiler ID# from NADB. In column (a), fill in each unit's applicable emission limitation from 40 CFR 76.5, 76.6, or 76.7. In column (b), assign an alternative contemporaneous annual emissions limitation in lb/mmBtu to each unit. In column (c), assign an annual heat input limitation in mmBtu to each unit. Continue to page 3 if necessary.

Plant Name	State	ID#	(a) Emission Limitation	(b) Alt. Contemp. Emission Limitation	(c) Annual Heat Input Limit
Allen S. King	MN	1	0.86	1.05	34.000.000
Black Dog	MN	1	0.40	0.81	2.094.000
Black Dog	MN	3	0.46	0.81	5.685.000
Black Dog	MN	4	0.46	0.81	11.036.000
High Bridge	MN	3	0.50	0.60	1.771.500
High Bridge	MN	4	0.50	0.60	1.771.500
High Bridge	MN	5	0.50	0.60	5.037.000
High Bridge	MN	6	0.50	0.60	10.313.000
Minnesota Valley	MN	4	0.46	0.47	1.189.000
Riverside	MN	6	0.46	0.85	4.324.500
Riverside	MN	7	0.46	0.85	4.324.500
Riverside	MN	8	0.86	0.82	10.821.000
Sherburne County	MN	1	0.45	0.28	42.255.000
Sherburne County	MN	2	0.45	0.28	42.255.000
Sherburne County	MN	3	0.46	0.35	34.912.000

Step 2

Use the formula to enter the Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan and the Btu-weighted annual average emission rate for the same units if they are operated in compliance with 40 CFR 76.5, 76.6, or 76.7. The former must be less than or equal to the latter.

Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan

Btu-weighted annual average emission rate for same units operated in compliance with 40 CFR 76.5, 76.6, or 76.7

0.54

0.54

$$\frac{\sum_{i=1}^n (R_{Li} \times HI_i)}{\sum_{i=1}^n HI_i}$$

$$\frac{\sum_{i=1}^n [R_{li} \times HI_i]}{\sum_{i=1}^n HI_i}$$

Where,

R_{Li} = Alternative contemporaneous annual emission limitation unit i, in lb/mmBtu, as specified in column (b) of Step 1:

R_{li} = Applicable emission limitation for unit i, in lb/mmBtu, as specified in column (a) of Step 1:

HI_i = Annual heat input for unit i, in mmBtu, as specified in column (c) of Step 1:

n = Number of units in the averaging plan

☒ This plan is effective for calendar year 2000 through calendar year 2004 unless notification to terminate the plan is given.

☐ Treat this plan as ☐ identical plans, each effective for one calendar year for the following calendar years , , , and unless notification to terminate one or more of these plans is given.

Special Provisions

Emission Limitations

Each affected unit in an approved averaging plan is in compliance with the Acid Rain emission limitation for NO_x under the plan only if the following requirements are met:

- (i) For each unit, the unit's actual annual average emission rate for the calendar year, in lb/mmBtu, is less than or equal to its alternative contemporaneous annual emission limitation in the averaging plan, and
 - (a) For each unit with an alternative contemporaneous emission limitation less stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year does not exceed the annual heat input limit in the averaging plan,
 - (b) For each unit with an alternative contemporaneous emission limitation more stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year is not less than the annual heat input limit in the averaging plan, or
- (ii) If one or more of the units does not meet the requirements of (i), the designated representative shall demonstrate, in accordance with 40 CFR 76.11(d)(1)(ii)(A) and (B), that the actual Btu-weighted annual average emission rate for the units in the plan is less than or equal to the Btu-weighted annual average rate for the same units had they each 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.
- (iii) If there is a successful group showing of compliance under 40 CFR 76.11(d)(1)(ii)(A) and (B) for a calendar year, then all units in the averaging plan shall be deemed to be in compliance for that year with their alternative contemporaneous emission limitations and annual heat input limits under (i).

Liability

The owners and operators of a unit governed by an approved averaging plan shall be liable for any violation of the plan or this section at that unit or any other unit in the plan, including liability for fulfilling the obligations specified in part 77 of this chapter and sections 113 and 411 of the Act.

Termination

The designated representative may submit a notification to terminate an approved averaging plan, in accordance with 40 CFR 72.40(d), no later than October 1 of the calendar year for which the plan is to be terminated.

Phase II Permit Application

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

This submission is ☒ New ☐ Revised

Sherburne County	MN	6090
Plant Name	State	ORIS Code

Compliance
Plan

a Boiler ID#	b Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)	c Repowering Plan	d New Units Commence Operation Date	e New Units Monitor Certification Deadline
1	Yes	no		
2	Yes	no		
3	Yes	no		
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			

Standard Requirements

Permit Requirements.

(1) The designated representative of each affected source and each affected unit at the source shall:

- (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
 - (ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;
- (2) The owners and operators of each affected source and each affected unit at the source shall:
 - (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and
 - (ii) Have an Acid Rain Permit.

Monitoring Requirements.

- (1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR parts 74, 75, and 76.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR parts 74 and 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements.

- (1) The owners and operators of each source and each affected unit at the source shall:
 - (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
 - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
- (3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
 - (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
 - (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1)(i) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements. The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements.

- (1) The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
- (2) The owners and operators of an affected unit that has excess emissions in any calendar year shall:
 - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
 - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements.

- (1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
 - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
 - (ii) All emissions monitoring information, in accordance with 40 CFR part 75;
 - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,

- (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- (2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability.

- (1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or a written exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
- (5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
- (6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans) and 40 CFR 76.11 (NO_x averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities. No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or a written exemption under 40 CFR 72.7 or 72.8 shall be construed as:

- (1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
- (2) Limiting the number of allowances a unit can hold; provided, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;
- (3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
- (4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
- (5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

APPENDIX II Technical Support Document

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 14100004-001

This technical support document is for all the interested parties of the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 4911 & 4961)
Northern States Power Company 414 Nicollet Mall Minneapolis, MN 55401-1993 (612) 330-7682	Sherburne County Generating Plant 13999 Industrial Blvd. Becker, MN 55308

1.2. Description of the facility

The NSP Sherburne County facility has a total plant electrical output rating of 2,255 MW. the plant also supplies steam to an off-site customer. Two boilers (boilers 1 and 2) at the facility are Tangentially fired boilers and discharge emissions to the atmosphere through a common 650 foot stack. Boiler 3 at the facility is a front and rear wall-fired boiler and discharges emissions through another 650 foot stack. Boilers 1 and 2 each have a maximum rated heat input capacity of 7,111 MMBtu/hr while boiler 3 is rated at 8,840 MMBtu/hr. Steam for electric power generation is provided by all three boilers and boilers 1 and 2 also supply steam for off-site sale. Approximately 3 percent of the steam from boilers 1 and 2 are used for off-site sale.

Fuel for the facility can come in many forms. Subbituminous coal is the primary fuel for all three main power boilers. Distillate fuel oil is used as an ignition and warm up fuel. While used oil will be burned in accordance with the used oil regulation Minn. R. 7045.

Coal is brought to the facility via railcars and unloaded by physically flipping the railcar and dumping the coal into a hopper. From there it is transferred by conveyor to the coal barn, to the coal stacker in the coal bergs area or to scraper loading for transportation to inactive storage. Coal from the coal barn, reclaim areas of the active bergs area is transferred to the crushers. Crushed coal is transferred to coal silos for temporary storage prior to pulverizing for combustion in Boilers 1, 2, and 3.

Lime, for use in the control of emissions from Boiler 3, is delivered to the plant site by rail and transferred pneumatically to storage silos and subsequently provided to a lime slurry preparation system. The lime slurry is introduced into the flue gas stream of Boiler 3 in conjunction with a solids recycle stream of fly ash and lime.

The air pollution control equipment for Boilers 1 and 2 consists primarily of spray towers (wet scrubbing) to control particulate and Sulfur Dioxide (SO₂) emissions in addition to some Hazardous Air Pollutant (HAP) emissions. A trial installation of a full scale wet electrostatic precipitator (WESP) has completed testing and should be completely operational by the end of 2001. The air pollution control equipment for Boiler 3 consists of a lime slurry in a spray dryer/bag house configuration to control SO₂ and particulate emissions in addition to some HAP emissions.

1.3 Description of any changes allowed with this permit issuance

The following requirement and physical changes are allowed under this permit:

- A 0.003 gr/dscf emission rate for all coal handling equipment dust collectors/stacks. This is based on recent stack testing
- Incineration of boiler chemical cleaning waste in the main power boilers at a rate that is consistent with other NSP facilities.
- Coal transloading operations up to 1,944 tons per day.
- Closure of vents from #31 and #32 Ash Transfer Bins
- New Particulate Matter less than 10 um in size (PM₁₀) limits on SV001 and SV002. Limits are double the Particulate Matter (PM) limits to account for condensable particulates. Limits exceed National Ambient Air Quality Standard (NAAQS) modeling requirements.
- Various changes to fugitive dust source emissions to match revised Prevention of Significant Deterioration (PSD) increment modeling analysis including addition of FS009 and FS010 limits.
- Steam Flow monitoring and recordkeeping requirement for EU 001 to verify turbine modification is not subject to Prevention of Significant Deterioration (PSD) (see discussion in Section 3)

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.

AFTER 8-25-81

Permit Number and	Action Authorized
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Issuance Date	
Amendment 1 to 202C-81-OT-1 April 28, 1982	Changes opacity limits in accordance with a variance issued by the MPCA Board
Amendment 2 to 202C-81-OT-1 July 26, 1983	Changes SO ₂ limits (sets a schedule for SO ₂ removal efficiency) in accordance with the Sherco 3 settlement agreement.
Amendment 3 to 202C-81-OT-1 September 21, 1983	Changes performance testing requirements
Amendment 4 to 202C-81-OT-1 May 16, 1985	Modifies Continuous Emissions Monitoring System (CEMS) certification and audit requirements
Amendment 5 to 202C-81-OT-1 March 31, 1987	Authorizes burning of waste oil and petroleum distillate solvents
Amendment 6 to 202C-81-OT-1 June 9, 1988	Authorizes installation of a modified particulate scrubber and sulfur dioxide absorber module with a SO ₂ removal efficiency of at least 80%
Amendment 7 to 202C-81-OT-1 May 18, 1988	Changes performance testing requirements
202Y-83-I-3 July 21, 1983	Installation permit for Boiler 3 (“Sherco 3”) and associated air pollution control equipment
202C-92-P-1 January 22, 1993	Authorizes modification and testing of a scrubber module on Boiler 1 to reduce PM and opacity
202Y-92-P-1 October 21, 1992	Authorizes construction and operation of test equipment
202C-93-P-2 June 4, 1993	Authorizes a temporary modification for testing of scrubber module no. 207 for Boiler No. 2
202C-93-P-3 August 13, 1993	Authorizes a 90 day test burn of petroleum coke in Sherco Units 1 and 2
Amendment 8 to 202C-81-OT-1 December 9, 1993	Authorizes installation and operation of low-Nitrogen Oxides (No _x) burners on Boiler 2
14100004-021 (202C-94-I/O-1 November 29, 1994	PSD permit; allows modification of Boilers 1 and 2 steam line to provide capability of producing process steam for sale; sets emission limits for all emission units based on modeling to ensure compliance with state and federal AAQS
14100004-022 December 28, 1994	Extends PM performance test deadline
14100004-020 (Amendment 9 to 202C-81-OT-1)	Authorizes modification and continued operation of Sherco Unit 2 scrubber

March 28, 1995	
Amendment 10 to 202C-81-OT-1 December 28, 1994	Extends PM performance test deadline
14100004-023 (Amendment 1 to 14100004-021) May 11, 1995	Establishes “worst case” operating conditions for stack testing for Boilers 1, 2 and 3
14100004-025 (Amendment 11 to 202C-81-OT-1) June 19, 1997	Authorizes modification of existing pollution control equipment as well as installation and operation of wet electrostatic precipitators serving Units 1 and 2

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	Boiler # 1	2803	5484	29,879	26,364	915.4	109.9	12.6	110.6	200.6
002	001	Boiler # 2	2803	5484	29,879	26,364	915.4	109.9	12.6	110.6	200.6
003	002	Boiler # 3	1162	2321	30,292	49,424	1139	136.7	22.9	137.5	383.6
004	003	#1 Aux Boiler	15.25	15.25	274.7	95.4	19.1	0.8			0.3
005	004	#2 Aux Boiler	15.25	15.25	274.7	95.4	19.1	0.8			0.3
006	005	#1 Coal Crusher	3.5	3.5						HCL	
007	006	#2 Coal Crusher	6.9	6.9							
008	007	#11 Coal Silo	3.5	3.5							
009	008	#12 Coal Silo	3.5	3.5							
010	009	#21 Coal Silo	3.5	3.5							
011	010	#22 Coal Silo	3.5	3.5							
012	011	#31 Coal Silo	6.2	6.2							
013	012	#32 Coal Silo	6.2	6.2							
014	013	#1 Transfer	5.8	5.8							
015	014	#2 Transfer	6.0	6.0							
016	015	#3 Transfer	2.2	2.2							
017	016	#4 Transfer	2.7	2.7							
018	017	#5 Transfer	1.5	1.5							
019	018	#1 Coal Barn	4.1	4.1							
020	019	#2 Coal Barn	4.1	4.1							
021	020	#31 Ash Transfer Bin	0	0							
022	021	#32 Ash Transfer Bin	0	0							
023	022	#31 AQCS Silo	2.3	2.3							
024	023	#32 AQCS Silo	2.3	2.3							
025	024	#31 AQCS Solids	2.0	2.0							

		Recycle									
026	025	#32 AQCS Solids Recycle	2.0	2.0							
027	026	#1 Tunnel & #7 Transfer	11.6	11.6							
028	027	#2 Tunnel	10.0	10.0							
029	028	#1 Tripper Bypass	2.5	2.5							
030	029	#1 Tripper Loading	2.6	2.6							
031	030	#6 Transfer Point	2.9	2.9							
032	031	Emergency Reclaim	1.4	1.4							
033	032	Scraper Loading and Reclaim	12.1	12.1							
034	033	Limestone Reclaim	0.5	0.5							
035	034	Limestone Storage	0.9	0.9							
036	035	Lime Receiving	13.0	13.0							
037	036	#31 Lime Silo	2.6	2.6							
038	037	#32 Lime Silo	2.6	2.6							
039	038	Rail Car Unloading 1	11.4	11.4							
040	039	Rail Car Unloading 2	11.4	11.4							
045	044	#1 Diesel Fire Pump	0.1	0.1	0.1	1.8	0.4	0.1			
046	045	#1 Diesel Well Pump	0.04	0.04	0.04	1.2	0.3	0.1			
047	046	#1 Diesel Emergency Generator	0.5	0.5	0.5	14.1	3.1	1.0			
048	047	#31 Diesel Emergency Engine	0.3	0.3	0.3	9.4	2.0	0.6			
049	048	#32 Diesel Emergency Engine	0.3	0.3	0.3	9.4	2.0	0.6			
050	049	Diesel Air Compressor	0.4	0.4	0.2	5.9	1.3	0.4			
053	052	Filter Air Receiver - #1 Coal Barn	0.5	0.5							
054	053	Filter Air Receiver - #2 Coal Barn	0.2	0.2							
055	054	Filter Air Receiver - Coal Crushing	0.5	0.5							
FS		See Table 2									

	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*	7035	13,556	79,545	72,329	3019	364	48.1	358.7	786
Total Facility Actual Emissions	4165	4165	19,117	27,835	1510	178	12.4	HCL	43.0

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

Table 2. Air Dispersion Modeling Emission Rates

PM₁₀ limits to meet the 24-hour and annual NAAQS and PSD Increment (PM₁₀ includes condensables)

Source	Calculations and Regulatory Basis if not strictly a modeled limit	lbs/hour	tons/year
EU001 SV001	0.09lbs/MMBtu @ 7,111MMBtu/hr and 8760hours/yr Negotiated permit limit & 7011.0545 Max design capacity Emissions doubled to account for condensables	1280	5606
EU002 SV001	0.09lbs/MMBtu @ 7,111MMBtu/hr and 8760hours/yr Sherco 3 agreement & 7011.0545 Max design capacity Emissions doubled to account for condensables	1280	5606
EU003 SV002	0.03lbs/MMBtu @ 8,840MMBtu/hr and 8760hours/yr NSPS Da Max design cap. Emissions doubled to account for condensables	530	2321
EU004 SV003	0.05lbs/MMBtu @ 122MMBtu/hr and 8760hours/yr Title I limit Max design cap.	6.1	26.7
EU005 SV004	0.05lbs/MMBtu @ 122MMBtu/hr and 8760hours/yr Title I limit Max design cap.	6.1	26.7
EU006 SV005	0.003 gr/acf @ 23,200 acfm and 8760 hours/yr stack tests Max design cap.	0.6	2.6
EU007 SV006	0.003 gr/acf @ 46,000 acfm and 8760 hours/yr stack tests Max design cap.	1.2	5.2
EU008 SV007	0.003 gr/acf @ 23,400 acfm and 8760 hours/yr stack tests Max design cap.	0.6	2.6
EU009 SV008	0.003 gr/acf @ 23,400 acfm and 8760 hours/yr stack tests Max design cap.	0.6	2.6
EU010 SV009	0.003 gr/acf @ 23,400 acfm and 8760 hours/yr stack tests Max design cap.	0.6	2.6
EU011 SV010	0.003 gr/acf @ 23,400 acfm and 8760 hours/yr stack tests Max design cap.	0.6	2.6
EU012 SV011	0.003 gr/acf @ 41,400 acfm and 8760 hours/yr stack tests Max design cap.	1.1	4.7
EU013 SV012	0.003 gr/acf @ 41,400 acfm and 8760 hours/yr stack tests Max design cap.	1.1	4.7
EU014 SV013	0.003 gr/acf @ 38,525 acfm and 8760 hours/yr stack tests Max design cap.	1.0	4.3
EU015 SV014	0.003 gr/acf @ 40,200 acfm and 8760 hours/yr stack tests Max design cap.	1.0	4.5
EU016 SV015	0.003 gr/acf @ 14,700 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.7
EU017 SV016	0.003 gr/acf @ 18,300 acfm and 8760 hours/yr stack tests Max design cap.	0.5	2.1
EU018 SV017	0.003 gr/acf @ 9,775 acfm and 8760 hours/yr stack tests Max design cap.	0.3	1.1
EU019	0.003 gr/acf @ 27,600 acfm and 8760 hours/yr	0.7	3.1

SV018	stack tests Max design cap.		
EU020 SV019	0.003 gr/acf @ 27,600 acfm and 8760 hours/yr stack tests Max design cap.	0.7	3.1
EU023 SV022	0.003 gr/acf @ 15,500 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.7
EU024 SV023	0.003 gr/acf @ 15,500 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.7
EU025 SV024	0.003 gr/acf @ 13,500 acfm and 8760 hours/yr stack tests Max design cap.	0.3	1.5
EU026 SV025	0.003 gr/acf @ 13,500 acfm and 8760 hours/yr stack tests Max design cap.	0.3	1.5
EU027 SV026	0.003 gr/acf @ 77,000 acfm and 8760 hours/yr stack tests Max design cap.	2.0	8.7
EU028 SV027	0.003 gr/acf @ 66,700 acfm and 8760 hours/yr stack tests Max design cap.	1.7	7.5
EU029 SV028	0.003 gr/acf @ 16,700 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.9
EU030 SV029	0.003 gr/acf @ 17,300 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.9
EU031 SV030	0.003 gr/acf @ 19,500 acfm and 8760 hours/yr stack tests Max design cap.	0.5	2.2
EU032 SV031	0.003 gr/acf @ 9,200 acfm and 8760 hours/yr stack tests Max design cap.	0.2	1.0
EU033 SV032	0.003 gr/acf @ 80,500 acfm and 8760 hours/yr stack tests Max design cap.	2.1	9.1
EU034 SV033	0.003 gr/acf @ 3,200 acfm and 8760 hours/yr stack tests Max design cap.	0.1	0.4
EU035 SV034	0.003 gr/acf @ 5,750 acfm and 8760 hours/yr stack tests Max design cap.	0.1	0.6
EU036 SV035	0.003 gr/acf @ 86,250 acfm and 8760 hours/yr stack tests Max design cap.	2.2	9.7
EU037 SV036	0.003 gr/acf @ 17,250 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.9
EU038 SV037	0.003 gr/acf @ 17,250 acfm and 8760 hours/yr stack tests Max design cap.	0.4	1.9
EU039 SV038	0.003 gr/acf @ 76,000 acfm and 8760 hours/yr stack tests Max design cap.	2.0	8.6
EU040 SV039	0.003 gr/acf @ 76,000 acfm and 8760 hours/yr stack tests Max design cap.	2.0	8.6
EU045 SV044	0.032 lbs/gallon @ 40 gallons/hour and 500 hours/yr Max design cap.	1.3	0.3
EU046 SV045	0.032 lbs/gallon @ 10 gallons/hour and 500 hours/yr Max design cap.	0.3	0.1
EU047	0.032 lbs/gallon @ 120 gallons/hour and 500 hours/yr	3.8	1.0

SV046	Max design cap.		
EU048 SV047	0.032 lbs/gallon @ 80 gallons/hour and 500 hours/yr Max design cap.	2.6	0.6
EU049 SV048	0.032 lbs/gallon @ 80 gallons/hour and 500 hours/yr Max design cap.	2.6	0.6
EU050 SV049	0.032 lbs/gallon @ 50 gallons/hour and 500 hours/yr Max design cap.	1.6	0.4
EU053 SV052	0.003 gr/acf @ 3,110 acfm and 8760 hours/yr stack tests Max design cap.	0.1	0.4
EU054 SV053	0.003 gr/acf @ 1,141 acfm and 8760 hours/yr stack tests Max design cap.	0.03	0.1
EU055 SV054	0.003 gr/acf @ 3,048 acfm and 8760 hours/yr stack tests Max design cap.	0.1	0.4
FS001	AP-42 dump eq. assume 1% as fugitives @ 3300 tons/hr, 9×10^6 tons/yr, assumed 25% coal moisture based on analysis, 40% control by watering to meet 7011.0150 and modeling	0.002	0.002
FS002	0.75 lbs/aces-day, 68 acres and 50 % control by watering to meet 7011.0150 and modeling	1.06	4.65

FS003	AP-42 dump eq. @ 3000tons/hour, 6X10 ⁶ tons/yr, assumed 25% coal moisture based on analysis, 40 % control to meet 7011.0150 and modeling	0.14	0.14
FS004	AP-42 dump eq. @ 3000tons/hour, 2X10 ⁶ tons/yr, assumed 25% coal moisture based on analysis, no control	0.24	0.08
FS005	0.75 lbs/acres-day, 2 acres and 50 % control by watering to meet 7011.0150 and modeling; annual based on practical limit	0.9	0.16
FS006	AP-42 dump eq. @ 3000tons/hour, 2X10 ⁶ tons/yr, assumed 25% coal moisture based on analysis, 40 % control to meet 7011.0150 and modeling	0.14	0.05
FS007	AP-42 dump eq. @ 3000tons/hour, 2X10 ⁶ tons/yr, assumed 25% coal moisture based on analysis, 50 % control Nov.-March and 70% control April-October to meet 7011.0150 and modeling not modeled concurrently with FS006.	0.12/ 0.07	0.03
FS008	AP-42 Section 11.9 @ 962 miles/day 179,046 m/yr for scrapers AP-42 Section 13.2.2 @ 12.2 miles/day, half loaded transload trucks on unpaved roads AP-42 Section 13.2.1 @ 108 miles/day, half loaded transload trucks on paved roads All with 50% control Nov-March and 70% control April- October	25.8 uncon- trolled	45.2 control- led
FS009	AP-42 Section 13.2.1 @ 120 miles/day, 17,386 m/yr for Unit 3 Ash to landfill AP-42 Section 13.2.1 @ 9 miles/day, 936 m/yr Metro ash to #3 ash silo / AP-42 Section 13.2.1 @ 9 miles/day, 468 m/yr Unit 3 ash sent off-site All with 50% control Nov-March and 70% control April-October / routine water truck traffic 70% control, 35miles/day 2288 miles/yr.	29.0 uncon- trolled	127.2 control- led
FS010	AP-42 Section 13.2.2 @ 20 miles/day, 3333 m/yr Metro ash to Pond 2, 50% control Nov-March and 70% control April-October AP-42 Section 13.2.2 @ 96? miles/day, 13,530 m/yr Water Truck 70% control April-October AP-42 Section 13.2.2 @ 15 miles/day, 2173 m/yr #3 Ash Trucks 70% control April-October	22.5 uncon- trolled	6.1 control- led
FS011	AP-42 dump eq. @ 240tons/day, 40,000 tons/yr, no control	0.002	0.003
FS012	Time-varying See attachments or modeling analysis		
FS013	0.75 lbs/acres-day, 14 acres and 50 % control to meet 7011.0150 and modeling (model could not use two different control values for erosion)	0.22	0.96
FS014	AP-42 dump eq. @ 110 tons/hour on a 24-hour average, 440,000 tons/yr, assumed 20% ash moisture based on analysis, no control, equivalent to 50 trucks per day	0.01	0.02
FS015	AP-42 dump eq. @ 110 tons/hour on a 24-hour average, 440,000 tons/yr, assumed 17.5% ash moisture based on analysis, no control, equivalent to 50 trucks per day	0.01	0.03

FS016	Time-varying See attachments or modeling analysis		
FS017	0.75 lbs/acres-day, 30 acres and 50 % control to meet 7011.0150 and modeling (model could not use two different control values for erosion)	0.47	2.1
FS018	AP-42 Section 11.17-4 and dump eq. Assume 1% as fugitives @ 12 tons/hr, continuous, no control	0.04	0.1
FS019	Non particulate source	0.0	0.0
FS020	AP-42 dump eq. @ 81tons/hour, 709,560 tons/yr, assumed 25% coal moisture based on analysis, no control	0.01	0.03
FS021	AP-42 dump eq. assume 1% as fugitives @ 3300 tons/hr, 5×10^6 tons/yr, assumed 25% coal moisture based on analysis, 40% control by watering to meet 7011.0150 and modeling	0.001	0.001

SO₂ Limits to meet 1-hour MNAQS and 3-hour, 24-hour and annual NAAQS

Source	Calculations and Regulatory Basis if not strictly a modeled limit	lbs/hour	tons/year
EU001 SV001	1.3lbs/MMBtu @ 6954 MMBtu/hr for 1- hour average 1.2lbs/MMBtu @ 6954 MMBtu/hr for 3 and 24 - hour average 0.96lbs/MMBtu @ 6954 MMBtu/hr for annual average Title I modeled limit Max continuous capacity is currently listed as 7111 MMBtu/hr	9040 8345	29,240
EU002 SV001	1.3lbs/MMBtu @ 6954 MMBtu/hr for 1- hour average 1.2lbs/MMBtu @ 6954 MMBtu/hr for 3 and 24 - hour average 0.96lbs/MMBtu @ 6954 MMBtu/hr for annual average Title I modeled limit Max continuous capacity is currently listed as 7111 MMBtu/hr	9040 8345	29,240
EU003 SV002	1.3lbs/MMBtu @ 8840 MMBtu/hr for 1- hour average 1.2lbs/MMBtu @ 8840 MMBtu/hr for 3 and 24 – hour average 0.61lbs/MMBtu @ 8334 MMBtu/hr and 8760hours/yr Title I BACT limit and modeled limits Max continuous design capacity is currently listed as 8840 MMBtu/hr	11,492 10,608 5084	22,267
GP001 EU004 EU005 SV003 SV004	0.50lbs/MMBtu @ \leq 171MMBtu/hr for 1 - hour average 0.35lbs/MMBtu @ $>$ 171MMBtu/hr for 1 - hour average Title I modeled limit Max design capacity is about 240 MMBtu/hour combined This has been changed due to errors in the original PSD modeling analysis such as stack height, diameter and temperature. New modeling shows attainment with the 0.5lbs/MMBtu and all heat input rates. 0.5lbs/MMBtu @ 250.8 MMBtu/hr	85.5 old new 125.4	 549.3
GP007 EU045 EU046 EU047 EU048 EU049 EU050 SV044 SV045 SV046 SV047 SV048 SV049	0.5% fuel sulfur limit @ Emergency only status Title I modeled limit and to satisfy 7011.2300	25.2	not modeled due to limited operation

Table 3. Modeled Potential Nitrogen Oxides Emission Rates

source	Calculations and Regulatory Basis	lbs/hour	tons/year
EU001 SV001	0.85lbs/MMBtu @ 6954 MMBtu/hr for annual average AP-42 estimate; no limit; actual emissions are around 0.26 lbs/MMBtu from the stack vent Max continuous capacity is currently listed as 7111 MMBtu/hr	5911	25,889
EU002 SV001	0.85lbs/MMBtu @ 6954 MMBtu/hr for annual average AP-42 estimate; no limit; actual emissions are around 0.26 lbs/MMBtu from the stack vent; this unit has a lower actual lb/MMBtu emission rate than EU001 Max continuous capacity is currently listed as 7111 MMBtu/hr	5911	25,889
EU003 SV002	0.50lbs/MMBtu @ 8334 MMBtu/hr and 8760hours/yr NSPS Da limit Max continuous capacity is currently listed as 8840 MMBtu/hr	4167	18,252
GP001 EU004 EU005 SV003 SV004	20 lbs/1000 gals @ 871 X 2 gallons per hour AP-42 estimate; no limit Max design capacity is about 1742 gallons/hour combined	34.9	not modeled due to limited operation
GP007 EU045 EU046 EU047 EU048 EU049 EU050 SV044 SV045 SV046 SV047 SV048 SV049	AP-42 estimate for large and small diesel engines No limit	165.8	not modeled due to limited operation

Table 2. Facility(TF) and Permit Classification

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

* 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:
Facility	Minn. R. 7007.0150	Preventing Particulate Matter from Becoming Airborne
GP001	PSD impact analysis and Minn. R. 7011.0510	Fuel sulfur limit PM and Opacity limits
GP002 GP004 GP005 GP006	PSD impact analysis and Minn. R. 7011.0715	PM and Opacity limits
GP003	PSD impact analysis and 40 CFR Section 60.252	PM limit Opacity
GP007	PSD impact analysis and Minn. R. 7011.2300	Fuel Sulfur content and Opacity limits
SV001	PSD impact analysis	3-hour and annual SO ₂ emission limit
EU001 EU002 EU003	Minn. R. 7007.0510 Minn. R. 7009.0020	Standards of Performance for Existing Indirect Heating Equipment (Opacity) and Ambient Air Quality Standards (PM ₁₀ and SO ₂)

		EU001 and EU002 have opacity variance through December 31, 2001
EU003	40 CFR 60 subpart Da	NSPS for Electric Utility Steam Generating plants
EU001 EU002 EU003	40 CFR 72.9 40 CFR 76	Acid Rain allowance limitations for SO ₂ and NO _x averaging plan
EU001 EU002 EU003	Minn. R. 7045	Allowed to burn up to 10% on and off-spec used oil as defined in 7045

* 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 of assuring compliance with fugitive dust control measures.

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.

Emission Unit 001, 002, 003:

Units are listed Acid Rain Phase II sources. All units are entered into a NO_x Averaging Plan with other NSP coal plants in the state of Minnesota.

Allowed Fuel Types - Subbituminous coal and distillate oil. 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.

Emission Unit 001 and 002 - Stack Vent 1

Emission limits - Both boilers were ordered from the manufacturer previous to the promulgation of New Source Performance Standard D. Therefore, they are not subject to those emission limits. The SO₂ emissions were limited (as a function of coal sulfur content) in an agreement worked out between the agency and NSP during the permitting of Emission Unit 3. Furthermore, the stack vent limits were established during the 1994 PSD permit ambient air impact analysis. NO_x has not been limited in the past and due to the very tall stack and low ambient impact, NO_x is not limited at this time. A Particulate Matter limit of 0.09 lbs/MMBtu was originally agreed upon as a viable limit for the two boilers in the original construction permit No. 202-72-I-1. A new PM₁₀ limit has been placed on SV 001. This is twice the current TSP emission rate in an attempt to account for condensables that are measured in the PM₁₀ test.

The emissions have been verified by ambient air modeling to be appropriate. The opacity standard of 20 percent will be obtained on stack vent one no later than December 31, 2001.

PM₁₀ Performance Test- Boilers 1 and 2 may be tested individually or together since it is very unlikely that one boiler could effectively mask excess emissions from the other due to their likeness in size and design.capacity.

Performance Test Frequency- Every 3 years from date of last test (10/28/98), due to current compliance status. This will be re-evaluated after performance tests are completed. An additional optional test may be performed after installation of the Wet Electrostatic Precipitator (ESPs). The Wet ESPs are expected to lower particulate emission in addition to the required opacity decrease requirement. The test may be done if the company wishes to increase the test frequency to 5 years and to change the periodic monitoring from the current to a new alternative method. These changes are contingent on MPCA approval.

Alternative Operating Conditions – Short Term Emergency and Testing (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. The pound per hour emission limit for SO₂ and PM₁₀ on Stack Vents No. 1 is the total emission rate of both 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 STET.

Monitoring - CEMS required for all Acid rain sources and Continuous Opacity Monitor System (COMS) required by 7017.1000. Periodic monitoring for PM for EU 001 and EU 002 addresses three different situations. The first and current situation is the existence of only wet scrubber modules in place to control particulate matter. In this situation the wet scrubbers shall maintain a 15 to 27 inches of water pressure drop across each wet scrubber (one for EU 001 and one for EU 002) of 12 modules each. The second situation occurs during the installation of the wet ESPs for opacity mitigation. There will be one wet ESP module for each wet scrubber module (12 for each unit). When the wet ESPs are in operation behind a wet scrubber module, the pressure drop across the scrubber ceases to be relevant to the overall particulate collection efficiency. Therefore, only the dual operation of both controls becomes the significant parameter. The third situation is after all wet ESPs are in operation and the stack vent 001 opacity drops below 20 percent, the facility may be able to use the opacity monitor to show compliance with the particulate limit. This is due to the fact that both boilers are currently operating below their particulate limit when the stack opacity is around 50 percent. If the stack stays below 20 percent opacity then it may be assumed that the particulate emission rate is being met. This will have to be proven with a post wet ESP installation stack test. Since PM₁₀ limits have been selected at conservative levels, the MPCA believes monitoring for PM is adequate to show compliance with the PM₁₀ emission rates.

HAPs – Hydrogen Chloride (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.

- **Unit 1 Steam Turbine upgrade and PSD applicability**

Northern States Power Company (NSP) is planning the next maintenance cycle on the high pressure section of the Unit 1 steam turbine at its Sherburne County Generating Station (Sherco). The steam turbine which has operated for nearly 24 years is overhauled every 6 to 8 years to refurbish (grind and polish) and/or replace turbine blades, improve tolerances and refurbish the

inlet nozzle. Wear and damage to the steam turbine components is caused by fine particles that are present in the high pressure steam and impact the turbine components at very high speed. This slow erosion of turbine components eventually increases the tolerances or gaps in the turbine where steam can pass without transferring energy to the turbine blades and thus decreases the overall efficiency of the steam turbine. Since the steam turbine is a physical bottleneck in the current Steam Generator, Steam Turbine, Electric Generator system, the erosion of turbine components, in essence, naturally debottlenecks the Steam Generator and Steam Turbine. Periodic overhauls to the turbine are necessary to reverse the debottlenecking and restore the component tolerances and efficiencies. However, as shown in figure 1, the turbine efficiency can never be fully restored to original values, and each subsequent turbine overhaul restores less and less of the original design.

Recently, design improvements have greatly improved the efficiency and wear characteristics of steam turbine components. NSP proposes to take advantage of these improvements by replacing the high pressure section of the Unit 1 steam turbine with a new redesigned section. The new section will be designed to pass the same maximum steam flow (5,254,000 lbs/hour) as the current design has been observed to pass over the previous two years. The increased efficiency of the new turbine section will increase the overall efficiency of the Steam Generator, Steam Turbine, Electric Generator system and thus will lead to a small (~2%) increase in total electrical output from the Unit 1 electric generator. The new design will also slow, by approximately 80 percent, the rate of wear and damage of the new section, thus greatly reducing the natural debottlenecking and efficiency degradation (see figure 2).

Although this type of project is not explicitly exempted from Prevention of Significant Deterioration (PSD) review, the Minnesota Pollution Control Agency (MPCA) believes, based on the findings stated below, that this project is not subject to PSD review.

1. Turbine upgrade will actually increase the efficiency of the entire Steam Generator, Steam Turbine, Electric Generator system. This will lower the fuel usage and emission rate of the emission unit on a pound per megawatt basis and will maintain or lower the current maximum hourly emission rate.
2. The new turbine will naturally degrade and debottleneck at 20 percent of the current rate, thus slowing fuel demand increases and subsequent increases in emissions for the same amount of energy output.
3. Turbine overhauls are events that occur every 6 to 8 years on this unit and have been historically viewed as “routine maintenance and repair” and thus exempt from PSD review. Although the planned turbine upgrade is more costly and not as common a procedure as the turbine overhaul, the cost is substantially lower than the cost of total turbine reconstruction or replacement and the components of the high pressure turbine section being replaced by the proposed project do not differ significantly from those that are overhauled on a routine basis.
4. The entire unit 1 system (Steam Generator, Steam Turbine, Electric Generator) is not currently derated in its output capacity. Only the emissions per megawatt-hour increase over the wear cycle.
5. NSP does not plan to increase the utilization of this already base load unit beyond the normal market demand. The efficiency upgrade of the turbine does not change the

overall efficiency and economy of the unit enough to change the dispatch of the unit to some hypothetically higher base level such as that of the two NSP nuclear fission generating plants.

6. Unlike the WEPCO life extension project where, "...the plans to increase production rate or hours of operation are inextricably intertwined with the physical changes...", no such causal link exists between the physical change and any future increase in utilization. Therefore, changes in overall utilization of Unit 1 would be linked solely to external factors which are excluded from consideration. (see September 9, 1988 U.S. EPA memorandum from Don R. Clay, Acting Assistant Administrator for Air and Radiation to David A. Kee, Director, Air and Radiation Division, Region V, page 8)

Based on the above findings the MPCA believes the Sherco Unit 1 steam turbine upgrade is exempt from PSD review. To verify the change, according to design claims, does not increase the steam flow capability of the Unit 1 Steam Turbine and thus the output capacity of the Unit 1 Steam Generator, the MPCA proposes to place a steam flow monitoring and recordkeeping requirement for the EU 001 Steam Turbine into the Title V permit.

Emission Unit 003 - Stack Vent 2

Emission limits - The boiler is subject to of the New Source Performance Standard subpart Da. Therefore, it is subject to those emission limits. The SO₂ emissions were limited to 0.6 and 0.61 lbs/MMBtu, in place of the Da limit in an agreement worked out between the agency and NSP during the permitting of Emission Unit 3. This has always been considered as the BACT standard for this boiler. Furthermore, the 1 and 3 hour and annual limits were established during the 1994 PSD permit ambient air impact analysis. NO_x has not been limited in the past and due to the very tall stack and low ambient impact, NO_x is not limited at this time. The Particulate Matter limit of 0.03 lbs/MMBtu is the NSPS subpart Da limit. A new PM₁₀ limit has been placed on SV 001. This is twice the current TSP emission rate in an attempt to account for condensables that are measured in the PM₁₀ test. The emissions have been verified by ambient air modeling to be appropriate. The opacity standard of 20 percent is again the NSPS subpart Da limit.

Performance Test - Initial PM₁₀ performance test shall be performed within 180 days after permit issuance.

Performance Test Frequency- This will be evaluated after the performance test for particulate matter < 10 microns is complete.

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. The pound per hour emission limit for SO₂ and PM₁₀ on Stack Vents No. 2 is the total emission rate of the boiler running at 100 percent heat input. These limits will assure compliance with the NAAQS and Minnesota Ambient Air Quality Standard (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 STET.

Monitoring - CEMS required for all Acid rain sources and COMS required by 7017.1000. Periodic monitoring for PM from EU 003 entails the use of the stack vent No.2 COMS to measure an opacity range that will ensure compliance with the applicable emission rate. Since compliance can not be assured on EU 003 when the opacity is 20 percent or less, a new lower opacity

operating cap of 10% is assigned. This is not however a replacement of the 20 percent on a 6-minute average limit that already exists for this boiler. The averaging time for the new periodic monitoring limit is based on a 3-hour average due to the fact that EPA Method 5 with three one hour tests is the method used to show compliance with the PM standard. Since PM₁₀ limits have been selected at conservative levels, the MPCA believes monitoring for PM is adequate to show compliance with the PM₁₀ emission rates.

HAPs - 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.

Group 001 (Auxiliary Boilers 1 & 2)

New stack vent information (i.e. additional 15' stack heights and higher temperature) and a remodeling analysis shows that the 0.5 fuel sulfur limit is adequate for attainment for all heat inputs. Therefore, the 0.5 lb/MMBtu emission rate is the only SO₂ emission limit for these boilers and the recordkeeping has been reduced to fuel certification. Information below was written before the modeling results were known and represents past limitations.

Emission limits - SO₂ and PM limits were established during the last PSD modeling analysis. Different SO₂ limits apply at two heat input ranges. Opacity is limited consistent with the opacity rule 7011.0510.

Record Keeping - The fuel record keeping was deemed necessary to show compliance with the two layered SO₂ limit at different load ratings. NSP does not want to be limited to fuel oil that is less than 0.5 percent sulfur by weight. Otherwise a 0.35 percent fuel sulfur limit would suffice to ensure compliance with both SO₂ limits.

Group 002 (EU006, EU008, EU009, EU010, EU011, EU014)

Group 004 (EU023, EU024, EU025, EU026)

Group 005 (EU034, EU035, EU036, EU037, EU038)

Group 006 (EU032, EU033, EU039, EU040)

Due to recent concerns about the allowable Particulate emission rates of most of the noncombustion sources in the previous PSD permit. NSP conducted engineering tests on the stack vents at the railcar unloading building and the #4 transfer house. These emission tests measured a value of approximately 0.003 grains/actual cubic foot. When this grain loading is multiplied by the volume air capacity of the air handling unit at these sources, the measured emission rates are close to 100 times higher than the pound per hour estimated value listed in the PSD permit. Speculation as to the cause of these high measured emission include the theory that the fans on this is equipment is acting essentially as a vacuum system which is drawing in more particulate than would otherwise become airborne.

Since NSP made an honest attempt to estimate stack emissions from these sources using the latest AP-42 data, we are only requiring the source to adjust the emission limits in this Title V permit and to submit a new NAAQS and PSD Increment modeling analysis. The new emission rate is still well below the state industrial process rule standard. The opacity limit is consistent with the state opacity rule for this type of equipment (Group 002 and 006 Coal Handling

equipment and Group 004 and 005 Industrial Process equipment). There are no emission standards for specific coal handling equipment that is located at outstate sources.

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.

Group 003 (EU007, EU012, EU013, EU015, EU016, EU017, EU018, EU019, EU020, EU027, EU028, EU029, EU030, EU031)

This coal handling equipment was constructed after October 24, 1974 and is thus subject to NSPS subpart Y.

Due to recent concerns about the allowable Particulate emission rates of most of the noncombustion sources in the previous PSD permit. NSP conducted engineering tests on the stack vents at the railcar unloading building and the #4 transfer house. These emission tests measured a value of approximately 0.003 grains/actual cubic foot. When this grain loading is multiplied by the volume air capacity of the air handling unit at these sources, the measured emission rates are close to 100 times higher than the pound per hour estimated value listed in the PSD permit. Speculation as to the cause of these high measured emission include the theory that the fans on this equipment is acting essentially as a vacuum system which is drawing in more particulate than would otherwise become airborne.

Since NSP made an honest attempt to estimate stack emissions from these sources using the latest AP-42 data, we are only requiring the source to adjust the emission limits in this Title V permit and to submit a new NAAQS and PSD Increment modeling analysis. The new emission rate is still well below the state industrial process rule standard. The opacity limit is consistent with the New Source Performance Standard (NSPS) subpart Y.

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.

Group 007 (EU045, EU046, EU047, EU048, EU049, EU050)

These are all older internal combustion engines which were modeled for the previous PSD permit. The fuel sulfur is limited to 0.5 percent by weight to comply with the PSD modeling and the state rule for SO₂ emissions from these types of units. The opacity is limited to 20 percent, also in compliance with the state rule for IC engines.

Fugitive Sources

All fugitive sources except FS009 and FS010 (truck traffic specifically Unit 3 ash hauling) and FS020 (Coal Transloading) are limited by practical operating limitations. FS012 and FS016 comprise all the activities associated with construction and maintenance of the ash ponds and

landfill that will occur over the life of the permit. Due to the practical limitations and conservative worst case modeling assumptions, no limits will be placed on the fugitive emission sources except FS020 which is a new source. NSP is expected to stay within the operating parameters assumed during the modeling analysis.

4. Conclusion

Based on the information provided by the NSP Sherburne County Generating facility, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 14100004-001 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Daren Zigich, Marshall Cole, Margaret McCourtney, Tom Kosevich, Jennifer Tschida

Attachment: CD-01 Forms
Modeled emissions data