

**AIR EMISSION PERMIT NO. 13900010- 001
IS ISSUED TO**

Northern States Power Company

NSP - Blue Lake
1200 70th Street South
Shakopee, Scott County, Minnesota 55379

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	September 15, 1995

This permit authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal ; Part 70

Issue Date: March 16, 2000

Expiration: March 16, 2005

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	(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, Major Facilities Section/Metro District, 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 Blue Lake Generating Plant provides up to 205 Megawatts (MW) of peak electrical generation. The facility is on call to operate, as needed, any or all of four primarily fuel oil fired combustion turbine/generator sets. The turbines may also fire used oil when sufficient quantity has accumulated in on-site storage. This on-site storage consists of two identical tanks each with a capacity of 2.5 million gallons. One tank is usually used strictly for the storage of waste oil. The facility also has two emergency diesel engines.

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 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
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 enforceable by the EPA Administrator or citizens under the Clean Air Act.	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.	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
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
B. POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
C. TESTING REQUIREMENTS	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Operating and/or production limits will be placed on emission units based on operating conditions during performance testing. Limits set as a result of a performance test (conducted before or after permit issuance) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025.	Minn. R. 7017.2025
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 of issuance of the permit if monitoring activities are not performed or monitoring equipment is not installed and operational prior to permit issuance.	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
E. RECORDKEEPING	hdr
Recordkeeping: 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)

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Recordkeeping: 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 recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
F. REPORTING	hdr
Oral or Written (faxed) Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner 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. 7019.1000, subp. 1
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. 7019.1000, subp. 1
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. 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.	Minn. R. 7019.1000, subp. 2
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. 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.	Minn. R. 7019.1000, subp. 3
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: GP 001 electric generating combustion turbines**Associated Items:** EU 001 simple cycle combustion turbine

EU 002 simple cycle combustion turbine

EU 003 simple cycle combustion turbine

EU 004 simple cycle combustion turbine

SV 001

SV 002

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 . This limit applies to each emission unit.	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent once operating temperatures have been attained. This limit applies to each emission unit.	Minn. R. 7011.2300, subp. 1
Allowable Fuel Types: Distillate fuel oil and used mineral oil dielectric fluid less than 50 ppm PCBs.	Minn. R. 7007.0800, subp. 2
Used mineral oil dielectric fluid less than 50 ppm PCBs: Fuel Usage: less than or equal to 1 million gallons/year using 12-month Rolling Sum	Minn. R. 7007.0800, subp. 2; limited to maintain minor status for HAPs (HCL and Lead compounds)
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for all fuel types.	Minn. R. 7007.0800, subp. 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1
Collect and retain on-site, distillate fuel oil supplier certification showing that each delivery (by truck or pipeline) of distillate fuel oil has a sulfur content of less than or equal to 0.5 percent by weight.	Minn. R. 7007.0800, subp. 5
Record Keeping: Maintain records of monthly and annual (12-month rolling sum) used mineral oil dielectric fluid usage.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: EU 001 simple cycle combustion turbine**Associated Items:** GP 001 electric generating combustion turbines

SV 001

What to do	Why to do it
Performance Test: due 90 days after Permit Issuance to measure Opacity. Future opacity testing shall be conducted on a 48 month interval.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: EU 002 simple cycle combustion turbine**Associated Items:** GP 001 electric generating combustion turbines
SV 002

What to do	Why to do it
Performance Test: due 455 days after Permit Issuance to measure Opacity. Future opacity testing shall be conducted on a 48 month interval.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: EU 003 simple cycle combustion turbine**Associated Items:** GP 001 electric generating combustion turbines

SV 003

What to do	Why to do it
Performance Test: due 820 days after Permit Issuance to measure Opacity. Future opacity testing shall be conducted on a 48 month interval.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: EU 004 simple cycle combustion turbine**Associated Items:** GP 001 electric generating combustion turbines

SV 004

What to do	Why to do it
Performance Test: due 1,185 days after Permit Issuance to measure Opacity. Future opacity testing shall be conducted on a 48 month interval.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: EU 005 Emergency Engine/Generator**Associated Items:** SV 005

What to do	Why to do it
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Allowable Fuel Types: Distillate fuel oil.	Minn. R. 7007.0800, subp. 2
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for all fuel types.	Minn. R. 7007.0800, subp. 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/16/00

Facility Name: NSP - Blue Lake

Permit Number: 13900010 - 001

Subject Item: EU 006 Diesel Fire Pump**Associated Items:** SV 006

What to do	Why to do it
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Allowable Fuel Types: Distillate fuel oil.	Minn. R. 7007.0800, subp. 2
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for all fuel types.	Minn. R. 7007.0800, subp. 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1

TECHNICAL SUPPORT DOCUMENT
For
DRAFT AIR EMISSION PERMIT NO. 13900010-001

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

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 4911)
Northern States Power Company 414 Nicollet Mall (RSQ-6) Minneapolis, Minnesota 55401-1993	1200 70th Street South Shakopee, Minnesota Scott County

1.2. Description of the facility

The Blue Lake Generating Plant provides up to 205 Megawatts (MW) of peak electrical generation. The facility is on call to operate, as needed, any or all of four primarily fuel oil fired combustion turbine/generator sets. The turbines may also fire used oil when sufficient quantity has accumulated in on-site storage. This on-site storage consists of two identical tanks each with a capacity of 2.5 million gallons. One tank is usually used strictly for the storage of waste oil. The facility also has two emergency diesel engines.

1.3 Description of any changes allowed with this permit issuance

In an attempt to limit the facility's emissions of Hazardous Air Pollutants (HAPs), at least Hydrogen Chloride (HCL) and lead, (products of incomplete combustion not fully analyzed) NSP is requesting that the used oil currently allowed as a fuel, be limited to used mineral oil dielectric fluid. This will limit the fluctuating amounts of heavy metal and Chlorine content in the used oil shipments. Furthermore, NSP has accepted a new usage limit of 1 million gallons per year of used mineral oil dielectric fluid. By narrowing the used oil waste stream to basically only transformer oils and by lowering the used oil usage from 24 million to 1 million gallons per year, the facility will potentially be minor for HAP metals and HCL pending further analysis of the distillate

fuel oil. The conservative and narrow limit and fuel restriction does not deem necessary any further periodic monitoring for metal or halogen content.

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

Permit Number and Issuance Date	Action Authorized
202R-93-I/O-1 July 27, 1993	Installation and operation of one emergency diesel generator.
340000010-008 November 26, 1997	Changes in testing and record keeping requirements for used oil burning for energy recovery.

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	PM10 tpy	SO2 tpy	NOx Tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
001	001	simple cycle turbine	173	173	1433	1981	136	99.3	2.475		2.81
002	002	simple cycle turbine	173	173	1433	1981	136	99.3	2.475		2.81
003	003	simple cycle turbine	173	173	1433	1981	136	99.3	2.475		2.81
004	004	simple cycle turbine	173	173	1433	1981	136	99.3	2.475		2.81
005	005	emergency generator	0.39	0.39	0.78	14.02	3.89	0.39			
006	006	fire pump diesel	1.18	1.18	1.15	17.26	3.75	1.18			

	PM Tpy	PM10 tpy	SO2 tpy	NOx Tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions*	719	719	5939	8237	572	413	9.9		11.2
Total Facility Actual Emissions*	0.69	0.69	19.2	9.36	0.92	0.32			

*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 need be by MPCA staff. These are the potential emissions that would appear in a public notice.

Table 2. Facility(TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)	CO, NO _x , SO ₂ , PM-10		
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	CO, NO _x , SO ₂ , PM-10	Pb, total 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:
Total Facility	40 CFR 63	1,000,000 used mineral oil dielectric fluid fuel usage limit to limit emissions of lead and Hydrogen Chloride (HCL) below 10 TPY threshold.
EU001 EU002 EU003 EU004	Minn. R. 7007.2300	Standards of Performance for Internal Combustion Engines: SO ₂ ≤ 0.5 lbs/MMBtu Opacity ≤ 20 percent once operating temp. is attained

3. Technical Information

- In an attempt to synthetic minor the facility for HAPs , limits on used oil burning was placed on the facility during the last modification. Maximum concentrations of pollutants were determined by limits listed in Minn. R. 7045 for Off-spec used oil and by looking at current reports on the average lead (Pb) concentrations in used oil around the country. A maximum average concentration of 100 ppm of lead was assumed to be the highest potential on any HAP (see attached spreadsheet page). The 100 ppm concentration translates into a 24

million gallon limit for used oil combustion. Hydrogen Chloride emissions from the reaction of hydrogen and chlorine in the fuel may still prove to be the true limiting HAP whether it be from used oil or from distillate fuel oil. The determination of will be made at a later time when and if a Maximum Achievable Control Technology (MACT) standard is approved for this type of facility or the facility triggers 112g. The burning of used oil also created some concern about the amount of particulate matter less than 10 microns that potentially could be emitted due to used oil's higher (around 0.4% to 0.5%) ash content. An ash content of 0.45 percent yields a Particulate Matter less than 10 um in size (PM₁₀) emission rate of 661 pounds per hour from each turbine. The attached SCREEN model run shows the concentration from one unit operating at full capacity is well below the federal PM₁₀ 24 hour National Ambient Air Quality Standard (NAAQS). This was made assuming only one unit running, however due to the peaking status of the facility, rarely do all turbines operate at capacity all at the same time and rarely is the facility operated uninterrupted for a 24 hour period. A full modeling analysis for the entire facility for all pollutants will be submitted before the expiration of the Title V permit.

4. Conclusion

Based on the information provided by Northern States Power, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13900010-001 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 K. Zigich, Jennifer Tschida

Attachment: CD-01 Forms
Others specified in section 3