

AIR EMISSION PERMIT NO. 04900030-003

IS ISSUED TO

Northern States Power Company dba Xcel Energy

XCEL ENERGY – PRAIRIE ISLAND NUCLEAR

1717 Wakonade Drive East
Welch, Goodhue County, MN 55089

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	Issue Date	Action #
Total Facility Operating Permit	September 15, 1995	June 22, 2000	001
Major Amendment	November 13, 2002	June 3, 2003	002
Major Amendment	February 14, 2006	See Below	003
Total Facility Operating Permit – Reissuance	December 20, 2004		

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 are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/Limits to Avoid NSR

Issue Date: January 3, 2007

Expiration: January 3, 2012
Title I Conditions do not expire.

Richard J. Sandberg, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
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. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

This air emission facility is part of the Northern States Power Prairie Island Nuclear Generating Plant. The air emission facility is composed of an oil-fired heating boiler and 12 diesel-fired engines that are used to either generate emergency power, pump cooling water, or pump water for fire fighting.

PERMIT ACTION 003 DESCRIPTION:

This is a reissuance of a Part 70 operating permit that includes changes applied for as a major amendment. The major amendment is to increase the NO_x limit for each diesel engine from 3.35 to 4.0 lbs/mmBTU heat input to allow for some cushion for stack testing the larger diesel engines. As a result, the fuel usage limit will be decreased from 83955 to 70238 gallons/month. This is a Title I Condition emission limit to restrict facility NO_x potential emissions to less than the major source level of 250 tons/year. No emission changes are allowed by this permitting action.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1

01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

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
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Sec. 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2, & 4; Minn. R. 7009.0010 - 7009.0080
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
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2035, subps. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit and completion of permit reopening and reissuance. If limits serve to cause more stringent operating conditions, resulting changes to facility operation need to be made immediately. If limits serve to relax current operating conditions, resulting changes to facility operation must not be made prior to issuance of permit amendment with new limit incorporated.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment.	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: 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)
RECORDKEEPING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2**

01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

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)
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)
REPORTING/SUBMITTALS	hdr
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
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
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
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 - 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)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 - 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 - 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3**

01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

Subject Item: GP 001 Internal Combustion Engines**Associated Items:** EU 002 Diesel Engine D1

EU 003 Diesel Engine D2

EU 004 Diesel Cooling Water Pump 12

EU 005 Diesel Cooling Water Pump 22

EU 006 Diesel Fire Pump 121

EU 007 Diesel Engine D3

EU 008 Diesel Engine D4

EU 009 Security Diesel Engine

EU 010 Diesel Engine D5-1

EU 011 Diesel Engine D5-2

EU 012 Diesel Engine D6-1

EU 013 Diesel Engine D6-2

EU 014 Temporary Diesel Engine(s) >600 Hp

EU 015 Temporary Diesel Engine(s) <600 Hp

What to do	Why to do it
LIMITS AND OPERATING RESTRICTIONS	hdr
Fuel Usage: less than or equal to 70238 gallons/month using 12-month Rolling Average for GP 001	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 4.0 lbs/million Btu heat input for each emission unit in GP 001	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity once operating temperature has been attained. This applies individually to each emission unit in GP 001.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input (equivalent to a fuel oil sulfur content of 0.49 percent by weight). This applies individually to each emission unit in GP 001.	Minn. R. 7011.2300, subp. 2
Permitted Fuel: Distillate Fuel Oil with a maximum sulfur content of 0.49 percent by weight	Minn. R. 7007.0800, subp. 2
EU 014 and EU 015 Temporary Diesel Engines: The Permittee may operate temporary diesel fuel-fired engines at the facility providing the Permittee follows the fuel usage recordkeeping requirements and meets all applicable emission limits and fuel requirements in this subject item. A temporary engine is any engine that is not located and/or operated at the facility for more than twelve consecutive months, and does not include emission units 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, or 013.	Minn. R. 7007.0800, subp. 2
MONITORING AND RECORDKEEPING	hdr
Recordkeeping - EU 004 and EU 005 Operating Hours: by the last day of each month, the Permittee shall separately record EU 004 and EU 005 operating hours for the previous month, and separately record cumulative operating hours for EU 004 and EU 005 during the current calendar year.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subps. 4 & 5; Minn. R. 7007.3000;
DEFINITION OF "TOTAL GP 001 MONTHLY FUEL USAGE"	Minn. R. 7007.0800, subp. 2
"Total GP 001 Monthly Fuel Usage" is the monthly GP 001 fuel usage excluding EU 015 fuel usage when GP 001 (excluding EU 015) fuel usage is less than 60,000 gallons during the month. When GP 001 (excluding EU 015) fuel usage is equal or greater than 60,000 gallons, "TOTAL GP 001 MONTHLY FUEL USAGE" includes EU 015 fuel usage starting the month after the calculated GP 001 (excluding EU 015) monthly fuel usage exceeds 60,000 gallons, and each month thereafter until GP 001 monthly fuel usage (excluding EU 015) drops below 60,000 gallons.	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

<p>Fuel Usage Monitoring and Recordkeeping - by the last day of each month, calculate and record:</p> <ol style="list-style-type: none"> 1. The Total GP 001 Monthly Fuel Usage for the previous month, and 2. The GP 001 12-month rolling average fuel usage for the previous 12-months <p>Refer to the "Total GP 001 Monthly Fuel Usage" definition above.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subps. 4 & 5; Minn. R. 7007.3000;</p>
<p>Fuel Supplier Certification: The Permittee shall maintain certification from the fuel supplier that guarantees a maximum sulfur content in all fuel oil deliveries. The supplier will notify the Permittee in writing on the date of delivery of fuel oil with a sulfur content exceeding the guaranteed maximum.</p>	<p>Minn. R. 7007.0800, subps. 4 & 5</p>
<p>PERFORMANCE TESTING - EU 002/EU 003</p>	<p>hdr</p>
<p>Performance Test: due before end of each calendar 60 months starting 10/09/2006 to measure NOx emissions from EU 002 or EU 003. Testing shall commence with EU 002, and subsequently alternate between EU 002 and EU 003 at intervals not to exceed 60 months.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>Performance Test: due before end of each calendar 36 months starting 06/01/2004 to measure opacity emissions from EU 002 or EU 003. Testing shall commence with EU 002 and subsequently alternate between EU 002 and EU 003 at intervals not to exceed 36 months.</p>	<p>Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>PERFORMANCE TESTING - EU 004/EU 005</p>	<p>hdr</p>
<p>Initial Performance Test: due 90 days after Notification of resuming operation of either EU 004 or EU 005 for more than 100 hours in any calendar year. This performance test shall measure NOx emissions from EU 004 or EU 005.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>Initial Performance Test: due 90 days after Notification of resuming operation of either EU 004 or EU 005 for more than 100 hours in any calendar year. This performance test shall measure opacity emissions from EU 004 or EU 005.</p>	<p>Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>PERFORMANCE TESTING - EU 007/EU 008</p>	<p>hdr</p>
<p>Performance Test: due before end of each calendar 60 months starting 08/12/2005 to measure NOx emissions from EU 007 or EU 008. Testing shall commence with EU 008, and subsequently alternate between EU 007 and EU 008 at intervals not to exceed 60 months.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>Performance Test: due before end of each calendar 60 months starting 08/12/2005 to measure opacity emissions from EU 007 or EU 008. Testing shall commence with EU 008, and subsequently alternate between EU 007 and EU 008 at intervals not to exceed 60 months.</p>	<p>Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>PERFORMANCE TESTING - EU 010 & EU 011/EU 012 & EU 013</p>	<p>hdr</p>
<p>Performance Test: due before end of each calendar 60 months starting 08/15/2005 to measure NOx emissions from an emission unit pair (EU 010 & 011 or EU 012 & 013) that has not been tested in the previous five years. Testing shall commence with EU 010 & 011 and subsequently alternate between EU 010 & 011 and EU 012 & 013 at intervals not to exceed 60 months.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>
<p>Performance Test: due before end of each calendar 60 months starting 08/15/2005 to measure opacity emissions from an emission unit pair (EU 010 & 011 or EU 012 & 013) that has not been tested in the previous five years. Testing shall commence with EU 010 & 011 and subsequently alternate between EU 010 & 011 and EU 012 & 013 at intervals not to exceed 60 months.</p>	<p>Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5**

01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

Subject Item: EU 001 Boiler 1**Associated Items:** SV 001 Boiler 1

What to do	Why to do it
LIMITS AND OPERATING RESTRICTIONS	hdr
Fuel Usage: less than or equal to 31002 gallons/month using 12-month Rolling Average	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.144 lbs/million Btu heat input	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity	Minn. R. 7011.0510, subp. 2
Permitted Fuel: Distillate Fuel Oil with a maximum sulfur content of 0.49 percent by weight	Minn. R. 7007.0800, subp. 2
A temporary boiler may be brought onsite for a period of up to one year, for the purpose of providing steam, heat, or electric power in place of EU 001, when EU 001 is out of operation. The temporary boiler may not be operated at the same time as EU 001 except for up to eight hours during start-up and shutdown transition periods. The temporary boiler must have potential emission rates in lbs/hour for all criteria pollutants that are less than the permit emission limits and potential emission rates of EU 001. All fuel usage by any temporary boiler shall be included in the fuel usage recordkeeping required under this subject item.	Minn. R. 7007.0800, subp. 2
RECORDKEEPING	hdr
Fuel Usage Monitoring and Recordkeeping - by the last day of each month, calculate and record: 1. The total EU 001 fuel usage for the previous month, 2. The EU 001 12-month rolling average fuel usage for the previous 12-months. Any temporary boiler fuel usage shall be included in this fuel usage recordkeeping.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.3000

TABLE B: SUBMITTALS

B-1 01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear
Permit Number: 04900030 - 003

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:

AQ Permit Technical Advisor
Industrial 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:

AQ Compliance Tracking Coordinator
Industrial 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**B-2** 01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification	due 30 days after Resuming Operation by either EU 004 or EU 005 for more than 100 hours in any calendar year. This shall be a written notification indicating that the emission unit has exceeded 100 operating hours in the calendar year.	GP001
Testing Frequency Plan	due 60 days after Initial Performance Test to measure NOx emissions and opacity from EU 004 and EU 005. The plan shall specify a NOx and opacity testing frequency for EU 004 and EU 005 using the test data and MPCA guidance. Future performance tests 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. The Plan may propose that future performance tests commence with testing of the emission unit that was not tested during the initial performance test, and that testing alternate between EU 004 and EU 005.	GP001

TABLE B: RECURRENT SUBMITTALS**B-3** 01/03/07

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 003

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 06/22/2000. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 06/22/2000 (for the previous calendar year). The Certification shall be submitted on a form approved by the Commissioner, both to the Commissioner and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX B

Insignificant Activities and Applicable Requirements

Facility Name: Xcel Energy – Prairie Island Nuclear Generating Plant

Permit Number: 04900030-003

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp. 2.

The following sources at the Permittee's facility qualify as insignificant activities under Minn. R. 7007.1300, subs. 3 and 4 and are not required to be listed in the permit.

Minn. R. 7007.1300, subp.	Rule Description of the Activity	General Applicable Requirement
3(A)	Space heaters fueled by kerosene, natural gas, or propane	Minn. R. 7011.0515
3(G)	Emissions from laboratories	Minn. R. 7011.0515
3(H)(3)	Brazing, soldering, and welding equipment	Minn. R. 7011.0515; Minn. R. 7011.0610; Minn. R. 7011.0715
3(H)(4)	Blueprint copiers and photographic processes	Minn. R. 7011.0110
3(J)	Fugitive dust from unpaved plant entrance roads and parking lots	Minn. R. 7011.0150
3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment	Minn. R. 7011.0715
4	<ul style="list-style-type: none">- Internal combustion engines burning distillate oil, gasoline, natural gas, or propane- VOC fugitives from pumps, valves, flanges on fuel oil tanks- VOC fugitive emissions from parts washers- Sandblasting- Small propane fired furnaces and generators- Gluing equipment- Various oil tanks; combined tankage approximately 343,000 gallons	Minn. R. 7011.0715

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 04900030-003

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

1. General Information

1.1 Applicant and Stationary Source Location

Stationary Source/Address (SIC Code: 4911)	Corporate/Company Owner
1717 Wakonade Drive East Welch, MN 55089 Goodhue County	Northern States Power Company, doing business as Xcel Energy (Xcel Energy)
Contact: John K. Chelstrom Phone: 612-330-7682	414 Nicollet Mall (Environmental Services Dept.) Minneapolis, MN 55401

1.2 Description of the Facility

This air emission facility is part of the Northern States Power Prairie Island Nuclear Generating Plant. This facility generates 1076 MW of electricity. The air emission facility is composed of one distillate oil-fired heating boiler and 12 diesel-fired engines for emergencies, to generate power, pump cooling water, or pump water for fire fighting. The generators and water pumps are required by the U.S. Nuclear Regulatory Commission.

1.3 Description of any Changes Allowed with this Permit Issuance

This reissuance includes a major amendment to increase the NO_x limit for each diesel engine from 3.35 to 4.0 lbs/mmBTU heat input to allow for some cushion for stack testing the larger diesel engines. As a result, the fuel usage limit will be decreased from 83955 to 70238 gallons/month. This is a Title I condition emission limit to restrict facility NO_x potential emissions to less than the major source level of 250 tons/year.

Other changes made through this permit action

Updated standard language for any outdated requirements

Total Facility – added performance testing requirements to total facility level

GP 001 – updated performance testing requirements based on most recent tests

EU 001 – Removed performance testing requirements

Note: All performance tests were reviewed and accounted for up to 10/27/06.

1.4 Permit History

Permit Number and Issuance Date	Action Authorized
04900030-002 (6/3/03)	Changed requirement to submit modeling protocol and results to a requirement to submit modeling information
04900030-001 (6/22/00)	Part 70 Total Facility Permit issuance

1.5 Facility Emissions

Table 1. Total Facility Potential to Emit Summary

	PM (tpy)	PM ₁₀ (tpy)	SO ₂ (tpy)	NO _x (tpy)	CO (tpy)	VOC (tpy)	All HAPs (tpy)
Total Facility Potential Emissions Increases	(1.2)	(1.2)	(5.8)	0	(9.8)	(1.0)	(0.02)
Total Facility Limited Potential Emissions	6.3	6.6	42.7	239.7	51.0	5.4	0.1
Total Facility Actual Emissions (2004)	0.33	0.27	0.18	10.76	3.91	0.38	HAPs not reported in emission inventory

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		NO _x , CO, SO ₂	PM ₁₀ , PM, VOC
Part 70 Permit Program	NO _x	CO, SO ₂ , PM ₁₀	VOC
Part 63 NESHAP	--	--	Single and Total HAP

2. Regulatory and/or Statutory Basis

New Source Review

The facility has limits to keep it a synthetic minor source under New Source Review regulations. No changes are authorized by this permit.

Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is a minor source for HAPs under 40 CFR pt. 63. Thus, no NESHAPs apply.

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

Table 3. Regulatory Overview of Units Affected by the Permit Amendment

Unit	Applicable Regulations	Comments:
Total Facility	40 CFR pt. 50; Minn. R. 7009.0100 to 7009.0080	Added NAAQS requirement
GP 001 Internal Combustion Engines	Title I limits to avoid PSD; Minn. R. 7007.0800, subp. 2	Increased NO _x limit to 4.0 lbs/mm BTU heat input for each emission unit
		Decreased Fuel Usage to 70,238 gallons/month
	Minn. R. 7017.2020, subp. 1	Updated Performance Testing requirements based off most recent tests conducted
EU 001 Boiler 1	Minn. R. 7017.2020, subp. 1	Removed Performance Testing requirements based off most recent tests conducted and very low run times. (6.1 hr in 2005, 25.1 in 2004) This is a backup facility heating boiler, only would be needed if both nuclear generators were down at the same time during the winter heating season. Operating hours for this unit over the last 5 years have been solely for exercising the unit and performance testing.

3. Technical Information

3.1 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement are different or new from the previous permit. All other monitoring requirements are still applicable

Table 4. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP 001 Internal Combustion Engines	Operating Hours for EU 004 and EU 005	Recordkeeping	Records to show that hours of operation were less than 100 hours for the year. When over 100 hours, an Initial Performance Test is required, then a Testing Frequency Plan, which will make this requirement obsolete.
	12 month rolling average fuel limit	Recordkeeping	Records to show compliance with fuel usage limit

3.2 Calculations of Potential to Emit

Attachment 1 to this TSD contains the PTE calculations, which summarizes the PTE of the Facility. Emission Factors were obtained from AP-42 Chapters 1.3 and 3.4.

3.3 Insignificant Activities

Xcel Energy – Prairie Island Nuclear has several operations which are classified as insignificant activities. These are listed in Appendix B to the permit.

3.4 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be tracked (e.g., limits, submittals, etc.), should be in Table A or B. The main reason is that the appendices are word processing sections and are not part of the tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

3.5 Comments Received

Public Notice Period: November 15, 2006 – December 14, 2006

EPA 45-day Review Period: November 15, 2006 – December 29, 2006

No comments were received during the review periods.

4. Conclusion

Based on the information provided by Xcel Energy – Prairie Island Nuclear, the MPCA has reasonable assurance that the operation of the emission facility, as described in the Air Emission Permit No. 04900030-003, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:	Trevor Shearen (permit writer/engineer)
	Emily Hansen (enforcement)
	Steve Gorg (stack testing)
	Marshall Cole (peer reviewer)

Attachment: 1. Total Facility PTE Summary

ATTACHMENT 1:
Total Facility PTE Summary

Table 5. Total Facility PTE

Pollutant	EU 001 ¹	GP 001 ²		Total Facility	
	PTE (ton/yr)	Current PTE (ton/yr)	Limited PTE (ton/yr)	Current PTE ³ (ton/yr)	Limited PTE ⁴ (ton/yr)
NO _x	3.67	236.2	236.0	239.9	239.7
SO _x	13.21	35.3	29.5	48.5	42.7
CO	0.93	59.9	50.1	60.9	51.1
PM	0.37	7.05	5.90	7.42	6.27
PM ₁₀	0.37	7.05	5.90	7.42	6.27
Total VOC	0.05	6.35	5.31	6.39	5.36
Total HAPs	0.009	0.105	0.088	0.11	0.10

[1] EU 001 (ton/yr) from Table 6

[2] GP 001 (ton/yr) from Table 7

[3] Total Facility Current PTE (ton/yr) = EU 001 PTE (ton/yr) + GP 001 Current PTE (ton/yr)

[4] Total Facility Limited PTE (ton/yr) = EU 001 PTE (ton/yr) + GP 001 Limited PTE (ton/yr)

Table 6. EU 001 – Heating Boiler

Pollutant	Emission Factor (lb/gal)	Uncontrolled PTE¹ (ton/yr)	Limited PTE² (ton/yr)	Actual Emissions³ (ton/yr)
NO _x	0.0197 [15]	34.13	3.67	0.006
SO _x	0.0710 [11]	122.84	13.21	0.022
CO	0.0050 [11]	8.65	0.93	0.002
PM	0.0020 [11]	3.46	0.37	0.001
PM ₁₀	0.0020 [11]	3.46	0.37	0.001
Total VOC	0.0003 [12]	0.44	0.05	0.000
Benzene	2.14E-07 [13]	3.70E-04	3.98E-05	6.53E-08
Ethylbenzene	6.36E-08 [13]	1.10E-04	1.18E-05	1.94E-08
Formaldehyde	3.30E-05 [13]	5.71E-02	6.14E-03	1.01E-05
Naphthalene	1.13E-06 [13]	1.96E-03	2.10E-04	3.45E-07
1,1,1 Trichloroethane	2.36E-07 [13]	4.08E-04	4.39E-05	7.20E-08
Toluene	6.20E-06 [13]	1.07E-02	1.15E-03	1.89E-06
Xylenes	1.09E-07 [13]	1.89E-04	2.03E-05	3.32E-08
Arsenic	5.48E-07 [14]	9.48E-04	1.02E-04	1.67E-07
Beryllium	4.11E-07 [14]	7.11E-04	7.65E-05	1.25E-07
Cadmium	4.11E-07 [14]	7.11E-04	7.65E-05	1.25E-07
Chromium	4.11E-07 [14]	7.11E-04	7.65E-05	1.25E-07
Copper	8.22E-07 [14]	1.42E-03	1.53E-04	2.51E-07
Lead	1.23E-06 [14]	2.13E-03	2.29E-04	3.76E-07
Manganese	8.22E-07 [14]	1.42E-03	1.53E-04	2.51E-07
Mercury	4.11E-07 [14]	7.11E-04	7.65E-05	1.25E-07
Nickel	4.11E-07 [14]	7.11E-04	7.65E-05	1.25E-07
Selenium	2.06E-06 [14]	3.56E-03	3.82E-04	6.27E-07
Zinc	5.48E-07 [14]	9.48E-04	1.02E-04	1.67E-07
Total HAPs		8.48E-02	9.12E-03	1.50E-05

Max Process Rate 395 gal/hr
Monthly Fuel Limit 31002 gal/mo
2005 Actual Fuel Use 610 gal/yr

- [1] Uncontrolled PTE (ton/yr) = Emission Factor (lb/gal) x Max Process Rate x 8760 (hr/yr) / 2000 (lb/ton)
[2] Limited PTE (ton/yr) = Emission Factor (lb/gal) x Monthly Fuel Limit (gal/month) x 12 (month/yr) / 2000 (lb/ton)
[3] Actual Emissions (ton/yr) = Emission Factor (lb/gal) x 2005 Actual Fuel Use (gal/yr) / 2000 (lb/ton)
[11] AP-42 Table 1.3-1 (9/98)
[12] AP-42 Table 1.3-3 (9/98)
[13] AP-42 Table 1.3-9 (9/98)
[14] AP-42 Table 1.3-10 (9/98): (lb/gal) = (lb/MM Btu) x (0.137 MM Btu/gal)
[15] Stack test

Table 7. GP 001 – Internal Combustion Engines

Pollutant	Emission Factor (lb/MMBtu)	Current Limited PTE¹ (ton/yr)	Proposed Limited PTE² (ton/yr)	Actual Emissions³ (ton/yr)
NO _x (current)	3.35 [11]	236.2	N/A	17.4
NO _x (proposed)	4.00 [12]	N/A	236.0	20.8
SO _x	0.50 [13]	35.26	29.50	2.60
CO	0.85 [14]	59.94	50.15	4.43
PM	0.10 [14]	7.05	5.90	0.52
PM ₁₀	0.10 [14]	7.05	5.90	0.52
Total VOC	0.09 [14]	6.35	5.31	0.47
Acetaldehyde	2.52E-05 [15]	1.78E-03	1.49E-03	1.31E-04
Acrolein	7.88E-06 [15]	5.56E-04	4.65E-04	4.10E-05
Benzene	7.76E-04 [15]	5.47E-02	4.58E-02	4.04E-03
Formaldehyde	7.89E-05 [15]	5.56E-03	4.66E-03	4.11E-04
Naphthalene	1.30E-04 [16]	9.17E-03	7.67E-03	6.77E-04
Toluene	2.81E-04 [15]	1.98E-02	1.66E-02	1.46E-03
Xylenes	1.93E-04 [15]	1.36E-02	1.14E-02	1.01E-03
Total HAPs		1.05E-01	8.80E-02	7.77E-03

Current Fuel Usage Limit 83955 gal/month
Proposed Fuel Usage Limit 70238 gal/month
2005 Actual Rolling Average Fuel Use 6200 gal/month
Distillate Oil Heat Content 0.14 MM Btu/gal

[1] Current Limited PTE (ton/yr) = Emission Factor (lb/MM Btu) x Distillate Oil Heat Content (MM Btu/gal)
x Current Fuel Usage Limit (gal/month) x 12 (month/yr) / 2000 (lb/ton)

[2] Proposed Limited PTE (ton/yr) = Emission Factor (lb/MM Btu) x Distillate Oil Heat Content (MM Btu/gal)
x Proposed Fuel Usage Limit (gal/month) x 12 (month/yr) / 2000 (lb/ton)

[3] Actual Emissions (ton/yr) = Emission Factor (lb/MM Btu) x Distillate Oil Heat Content (MM Btu/gal)
x 2005 Actual Rolling Average Fuel Use (gal/month) x 12 (month/yr) / 2000 (lb/ton)

[11] Current Limit

[12] Proposed Limit

[13] Distillate Oil Limit

[14] AP-42, 10/96, Table 3.4-1

[15] AP-42, 10/96, Table 3.4-3

[16] AP-42, 10/96, Table 3.4-4