

AIR EMISSION PERMIT NO. 04900030-004

IS ISSUED TO

Northern States Power Co 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	Permit Number
Total Facility Operating Permit - Reissuance	December 20, 2004	04900030-003
Minor Amendment	November 08, 2007	04900030-004

This permit amendment amends Air Emission Permit No. 04900030-003, and 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

Minor Amendment: October 8, 2008

Issue Date: January 3, 2007

Expiration: January 3, 2012

Title I Conditions do not expire.

Don Smith, P.E., 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 permit action was a reissuance of a Part 70 operating permit that included changes applied for as a major amendment. The major amendment was to increase the Nitrogen Oxides (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 was decreased from 83955 to 70238 gallons/month. The Title I Condition emission limit is to restrict facility NO_x potential emissions to less than the major source level of 250 tons/year. No emission changes were allowed by this permitting action.

PERMIT ACTION 004 DESCRIPTION:

A minor amendment application was received November 8, 2007, in accordance with Minn. R. 7007.1450, subp. 2 informing the MPCA of a new trailer-mounted portable diesel-driven pump with a displacement of 6.8 liters per cylinder. The 151 horsepower diesel fire-pump engine will power the portable pump. Emission calculations demonstrate that this needs to be a minor amendment to the existing air quality permit. The engine will be a new emission unit, but will not be in a fixed location on-site. An administrative amendment was also rolled into this permit action.

The administrative amendment was requested under Minn. R. 7007.1400 subpart 1(c). Requiring the Permittee to comply with additional, more frequent, or expanded testing, monitoring, recordkeeping, or reporting requirements.

Xcel Energy's Prairie Island Nuclear Generating Plant Air Quality Permit 003 currently states for sulfur verification in fuel oil "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, which is 500 parts per million. This amendment is requesting a language change to the following, which is consistent with new language in the Xcel Energy - High Bridge Permit, No. 12300012-006:

Fuel Sulfur Content Monitoring: The permittee shall determine fuel sulfur content according to one of the following methods:

- (1) Test according to current American Society for Testing Materials or U.S. Environmental Protection Agency method(s) and keep records of lab analyses of sulfur content; or
- (2) Obtain and maintain a fuel supplier certification for each shipment of diesel fuel, showing that the sulfur content does not exceed the appropriate limit.

This permit action also included updates to permit language used to keep all MPCA air permits uniform. The two regulations that were added at the total facility level are labeled: Permit Appendices and Retain Records. The Facility Description was also updated. Stack Vents 002, 009, 010, 011, 012, 013 discharge direction was added. Building 010 name was also changed.

Permit and Amendment History			
Permit Type	Application Date	Issuance Date	Permit Action Number
Total Facility Operating Permit	9/15/95	6/22/00	001
Major Amendment	11/13/02	6/3/03	002
Major Amendment	2/14/06	1/3/07	003
Total Facility Operating Permit – Reissuance	12/20/04		
Administrative Amendment	2/21/08	See above	004
Minor Amendment	11/8/07		

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-1**

10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

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
Permit Appendices: This permit contains one appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
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 stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3
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)

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

10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

RECORDKEEPING	hdr
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)
Retain Records: When the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. These records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
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. 7007.1150-7007.1500. 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**

10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

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
- EU 017 Portable Diesel Fire Pump Engine

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**

10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

<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 Sulfur Content Monitoring: The permittee shall determine fuel sulfur content according to one of the following methods:</p> <p>(1) Test according to current ASTM or EPA method(s) and keep records of lab analyses of sulfur content; or</p> <p>(2) Obtain and maintain a fuel supplier certification for each shipment of diesel fuel, showing that the sulfur content does not exceed the appropriate limit.</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**

10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

Subject Item: GP 002 Emergency Internal Combustion Engines**Associated Items:** EU 017 Portable Diesel Fire Pump Engine

What to do	Why to do it
LIMITS & OPERATIONAL REQUIREMENTS	hdr
Total Particulate Matter: less than 0.60 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
NMHC+NOx: less than 7.8 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
Carbon Monoxide: less than 3.7 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
Timeline for Emission Standards: The Permittee shall operate and maintain the stationary CI ICE according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine. You may only change those settings that are permitted by the manufacturer.	40 CFR Section 60.4206; 40 CFR Section 60.4211(a); Minn. R. 7011.3520
Diesel Fuel: Use diesel fuel that meets the requirements of 40 CFR Section 80.510(a) which states the following per-gallon standards: 1. Sulfur content. 500 parts per million (ppm) maximum. 2. Cetane index or aromatic content, as follows: i. A minimum cetane index of 40; or ii. A maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(a); 40 CFR Section 80.510(a); Minn. R. 7011.3520
Diesel Fuel: Beginning October 1, 2010, use diesel fuel that meets the requirements of 40 CFR Section 80.510(b) for nonroad diesel fuel which states: (b) Beginning June 1, 2010. Except as otherwise specifically provided in this subpart, all NR and LM diesel fuel is subject to the following per-gallon standards: (1) Sulfur content. i. 15 ppm maximum for NR diesel fuel. ii. 500 ppm maximum for LM diesel fuel. (2) Cetane index or aromatic content, as follows: i. A minimum cetane index of 40; or ii. A maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(b); 40 CFR Section 80.510(b); Minn. R. 7011.3520
Hour Meter: The Permittee must install a non-resettable hour meter prior to startup of the engine.	40 CFR Section 60.4209(a); Minn. R. 7011.3520
Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Any operation other than emergency operation, maintenance, and testing as permitted in this section, is prohibited.	40 CFR Section 60.4211(e); Minn. R. 7011.3520

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6**

10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

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

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** 10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear
Permit Number: 04900030 - 004

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.

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

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.

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.

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

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** 10/08/08

Facility Name: Xcel Energy - Prairie Island Nuclear

Permit Number: 04900030 - 004

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 A

Insignificant Activities and Applicable Requirements

Facility Name: Xcel Energy – Prairie Island Nuclear Generating Plant

Permit Number: 04900030-004

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
PROPOSED AIR EMISSION PERMIT NO. 04900030-004

This technical support document (TSD) is intended for all parties interested in the proposed 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 preliminary determination to issue the proposed 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: Jonathan Amos, P.E. 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 the Activities Allowed by this Permit Action

A minor amendment application was received November 8, 2007 in accordance with Minn. R. 7007.1450, subp. 2 informing the MPCA of a new trailer-mounted portable diesel-driven pump with a displacement of 6.8 liters per cylinder. The 151 horsepower (hp) diesel fire-pump engine will power the portable pump. Emission calculations demonstrate that this needs to be a minor amendment to the existing air quality permit. The engine will be a new emission unit, but will not be in a fixed location on-site. An administrative amendment was also rolled into this permit action.

The administrative amendment was requested under Minn. R. 7007.1400 subpart 1(c). Requiring the Permittee to comply with additional, more frequent, or expanded testing, monitoring, recordkeeping, or reporting requirements.

Xcel Energy's Prairie Island Nuclear Generating Plant Air Quality Permit 003 currently states for sulfur verification in fuel oil "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, which is 500 parts per million (ppm)." This amendment is requesting a language change to the following which is consistent with new language in the Xcel Energy - High Bridge Permit, NO. 12300012-006:

Fuel Sulfur Content Monitoring: The permittee shall determine fuel sulfur content according to one of the following methods:

- (1) Test according to current ASTM or EPA method(s) and keep records of lab analyses of sulfur content; or
- (2) Obtain and maintain a fuel supplier certification for each shipment of diesel fuel, showing that the sulfur content does not exceed the appropriate limit.

This permit action also included updates to permit language used to keep all MPCA air permits uniform. The two regulations that were added at the total facility level are labeled: Permit Appendices and Retain Records. The Facility Description was also updated. Stack Vents (SV) 002, 009, 010, 011, 012, 013 discharge direction was added. Building 010 name was also changed.

1.4 Facility Emissions:

Table 1. Title I Emissions Increase Summary

Pollutant	Limited (500 hours) Emissions Increase from the Modification (tpy)	PSD/112(g) Significant Thresholds for major sources	NSR/112(g) Review Required?
PM	0.0828	25	No
PM ₁₀	0.0828	15	No
NO _x	0.872	40	No
SO ₂	0.0775	40	No
CO	0.110	100	No
Ozone (VOC)	0.0413	40	No

Table 2. Non-Title I Emissions Increase Summary

Pollutant	Net Change (lb/hr)	Insignificant Modification Thresholds (lb/hr <)	Minor and Moderate Amendment Thresholds (lb/hr < or ≥)	Type of Amendment (Minor or Moderate)
PM ₁₀	0.331	0.855	3.42	Insignificant
NO _x	3.49	2.28	9.13	Minor
SO ₂	0.310	2.28	9.13	Insignificant
CO	0.441	5.70	22.80	Insignificant
VOC	0.165	2.28	9.13	Insignificant

Table 3. 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)

40 CFR pt. 60 subp. IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - This subpart does apply to the new emergency portable diesel fire pump engine and will regulate it. GP002 was added to the permit because of the new emergency pump and the regulations from this subpart are included in the group.

40 CFR pt. 60 subp. JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines - This subpart does not apply to the new emergency portable diesel fire pump engine because the engine is not a gasoline engine.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

40 CFR pt. 63, subp. ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. This subpart regulates stationary reciprocating internal combustion engines (RICE) at both major and area sources of hazardous air pollutant (HAP) emissions. Prairie Island is an area source of HAPs, and the fire pump engine is considered a new source under this subpart. However, per 40 CFR 63.6590(c), the only requirements under this subpart for a new affected source installed at an area source are to comply with 40 CFR Part 60, Subpart IIII, for compression ignition engines. No other requirements under 40 CFR Part 63, Subpart ZZZZ 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
- Minn. R. 7011.3520 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Table 4. Regulatory Overview of Units Affected by the Modification/Permit Amendment

EU, GP, or SV	Applicable Regulations	Comments:
GP001	Minn. R. 7007.0800, subp. 4 and 5	Fuel Sulfur Content: provides a choice to permittee for showing compliance with maximum sulfur content in their fuel.
GP002	40 CFR pt. 60, subp. IIII 40 CFR pt. 63 subp. ZZZZ, Minn. R. 7011.3520	NSPS for Stationary Compression Ignition Internal Combustion Engines. Subp. ZZZZ also applies but is only regulated through subp. IIII.
EU017	40 CFR pt. 60, subp. IIII 40 CFR pt. 63 subp. ZZZZ, Minn. R. 7011.3520	EU017 is the new emergency portable diesel fire pump engine which triggered NSPS IIII and NESHAP ZZZZ and has the following limits: CO limit of 3.7 g/hp-hr PM limit of 0.60 g/hp-hr NMHC + NOx limit of 7.8 g/hp-hr

3 Technical Information

3.1 Calculations of Potential to Emit (PTE)

Attachment 1 to this TSD contains a spreadsheet, which summarizes the PTE for 500 hours of the new emergency portable diesel fire pump engine.

3.2 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 5 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 5. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP002	40 CFR Section 60.4211(e)	Recordkeeping	Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year.
EU017	40 CFR Section 60.4214(b)	Notification	The stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification.

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
EU017	40 CFR pt. 60, subp. IIII 40 CFR pt. 63 subp. ZZZZ Minn. R. 7011.3520	None	Limited to emergency use only, except for training and maintenance. No periodic monitoring is required.

3.3 Insignificant Activities

Xcel Energy's Prairie Island Nuclear Generating Plant has several operations which are classified as insignificant activities. These are listed in Appendix A to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities.

Table 6. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
Fuel use: space heaters fueled by, kerosene, natural gas, or propane	PM \leq 0.6 or 0.4 lb/MMBtu, depending on year constructed Opacity \leq 20% with exceptions (Minn. R. 7011.0510/515)	For this unit, based on the fuels used and EPA published emissions factors, it is highly unlikely that it could violate the applicable requirement. In addition, these types of units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Emissions from a laboratory, as defined in Minn. R. 7007.1300, subp. 3(G)	PM, variable depending on airflow Opacity \leq 20% (Minn. R. 7011.0710/715)	These are very small, intermittent, bench-top operations that typically do not even have any emissions. It is highly unlikely that they could violate the applicable requirement.

Insignificant Activity	General Applicable Emission limit	Discussion
Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity \leq 20% (Minn. R. 7011.0710/715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Blueprint copiers and photographic processes	Opacity \leq 20% (Minn. R. 7011.0105 or 7011.0110))	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions. In addition, these units would be operated and vented directly into an office area, so monitoring or testing is not feasible.
Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source	PM, variable depending on airflow or process weight rate Opacity \leq 20% (Minn. R. 7011.0715)	While spray equipment will have the potential to emit particulate matter, these particular activities are those not associated with production, so they would be infrequent and usually occur outdoors. Testing or monitoring is not feasible.

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

EPA 45-day Review Period: 8/21/08 - 10/6/08

Comments were not received from EPA during their review period. Changes to the permit were not made as a result of the comments.

4 Conclusion

Based on the information provided by Xcel Energy, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 04900030-004 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: Jake Swaggert (permit writer/engineer)
Christian Norman (enforcement)
Sean O'Connor (stack testing)
Trevor Shearen (peer reviewer)

AQ File No. 202U; DQ 1748, 1916

Attachments: 1. PTE Summary
2. Facility Description and CD-01 Forms