

**AIR EMISSION PERMIT NO. 00900021-003**

**IS ISSUED TO**

Northern States Power Company d/b/a Xcel Energy

**XCEL ENERGY - GRANITE CITY GENERATING**

680 Highway 10 North

St. Cloud, Benton County, Minnesota 56304

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	Issuance Date	Action Number
Total Facility Operating Permit	09/15/1995	11/07/2000	001
Administrative Amendment	MPCA initiated	06/25/2001	002
Total Facility Operating Permit - Reissuance	05/09/2005	see below	003

This permit supersedes all previous permits for this source 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; Part 70/Major for New Source Review

**Issue Date:** November 8, 2007

**Expiration:** November 8, 2012  
Title I Conditions do not expire.

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Jeff J. Smith, 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	651-82-5332

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 facility generates electricity mainly during periods of peak electrical demand. It is composed of four identical simple cycle combustion turbine generators capable of firing either natural gas or distillate fuel oil, and several insignificant activities. This permit is a reissuance of the title V operating permit. No changes are allowed by this permit.

All four combustion turbines at the facility are fossil fuel-fired electric generating units with nameplate capacity of 17 MW. Therefore these units are not subject to CAIR. In addition, the four units commenced operation in 1972 and therefore are not subject to the Acid Rain Program because they are not affected units according to § 72.6(b)(1).

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-1

11/08/07

Facility Name: Xcel Energy - Granite City Generating

Permit Number: 00900021 - 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
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr
<p>These requirements apply where there is a reasonable possibility that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test described in Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase. If the ATPA test is not used for a particular project, or if there is not a reasonable possibility that the proposed project could result in a significant emissions increase, then these requirements do not apply to that project.</p> <p>Even though a particular modification is not subject to New Source Review, a permit amendment, recordkeeping, or notification may still be required under Minn. R. 7007.1150 - 7007.1500.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2
<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> <li>1. Project description;</li> <li>2. Identification of any emission unit (EU) whose emissions of an NSR pollutant could be affected;</li> <li>3. Pre-change potential emissions of any affected existing EU, and the projected post-change potential emissions of any affected existing or new EU;</li> <li>4. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the EU could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination.</li> </ol> <p>The Permittee shall maintain records of this documentation.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
<p>The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
<p>The Permittee must submit a report to the Agency if the annual summed (actual, plus potential if used in hybrid test) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain:</p> <ol style="list-style-type: none"> <li>a. The name and ID number of the facility, and the name and telephone number of the facility contact person</li> <li>b. The annual emissions (actual, plus potential if any part of the project was analyzed using the hybrid test) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded.</li> <li>c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection.</li> </ol>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
OPERATIONAL REQUIREMENTS	hdr
<p>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.</p>	40 CFR pt. 50; Minn. Stat. Section 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.

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

11/08/07

Facility Name: Xcel Energy - Granite City Generating

Permit Number: 00900021 - 003

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
<b>PERFORMANCE TESTING</b>	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
Performance Test Notifications and Submittals:  Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.  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 Copy: 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. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 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
<b>MONITORING REQUIREMENTS</b>	hdr
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)
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)
<b>RECORDKEEPING</b>	hdr
Recordkeeping: Retain all records at the stationary source or other Northern States Power site 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)
<b>REPORTING/SUBMITTALS</b>	hdr

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

11/08/07

Facility Name: Xcel Energy - Granite City Generating

Permit Number: 00900021 - 003

<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp. 3
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
<p>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.</p>	Minn. R. 7019.1000, subp. 1
<p>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:</p> <ol style="list-style-type: none"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected;</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.</li> </ol>	Minn. R. 7019.1000, subp. 1
<p>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.</p>	Minn. R. 7007.1150 through Minn. R. 7007.1500
<p>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).</p>	Minn. R. 7007.1400, subp. 1(H)
<p>Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit the report on a form approved by the Commissioner.</p>	Minn. R. 7019.3000 through Minn. R. 7019.3100
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	Minn. R. 7002.0005 through Minn. R. 7002.0095

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

11/08/07

Facility Name: Xcel Energy - Granite City Generating

Permit Number: 00900021 - 003

**Subject Item: GP 001 Combustion Turbines****Associated Items:** EU 001 Turbine Engine 1

EU 002 Turbine Engine 2

EU 003 Turbine Engine 3

EU 004 Turbine Engine 4

<b>What to do</b>	<b>Why to do it</b>
Opacity: less than or equal to 20 percent opacity once operating temperature has been attained, for 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) for each emission unit in GP 001.	Minn. R. 7011.2300, subp. 2
Sulfur Content of Fuel: less than or equal to 0.49 percent by weight for distillate fuel oil.	Minn. R. 7007.0800, subp. 2
Permitted Fuels: Pipeline natural gas and distillate fuel oil only.	Minn. R. 7007.0800, subp. 2
Fuel Sulfur Content: The Permittee shall determine fuel sulfur content according to one of the following methods:  1. Test according to current ASTM method(s) and keep records of lab analysis of the sulfur content of each shipment; or 2. For each shipment, obtain a bill of lading or other type of fuel receipt specifying the fuel oil grade.	Minn. R. 7007.0800, subp. 4 and 5
See Subject Items EU 001, EU 002, EU 003, and EU 004 for applicable performance testing requirements.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Xcel Energy - Granite City Generating  
Permit Number: 00900021 - 003

Subject Item: EU 001 Turbine Engine 1  
Associated Items: GP 001 Combustion Turbines  
SV 001 Turbine Engine 1

What to do	Why to do it
Performance Test: due 365 days after Permit Issuance to measure EU 001 opacity while combusting fuel oil.  For additional applicable performance test requirements, see "Performance Test Notifications and Submittals" in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1



TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Xcel Energy - Granite City Generating  
Permit Number: 00900021 - 003

Subject Item: EU 002 Turbine Engine 2

Associated Items: GP 001 Combustion Turbines  
SV 002 Turbine Engine 2

What to do	Why to do it
Performance Test: due 365 days after Permit Issuance to measure EU 002 opacity while combusting fuel oil.  For additional applicable performance test requirements, see "Performance Test Notifications and Submittals" in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Xcel Energy - Granite City Generating  
Permit Number: 00900021 - 003

Subject Item: EU 003 Turbine Engine 3

Associated Items: GP 001 Combustion Turbines  
SV 003 Turbine Engine 3

What to do	Why to do it
Performance Test: due 365 days after Permit Issuance to measure EU 003 opacity while combusting fuel oil.  For additional applicable performance test requirements, see "Performance Test Notifications and Submittals" in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Xcel Energy - Granite City Generating  
Permit Number: 00900021 - 003

Subject Item: EU 004 Turbine Engine 4

Associated Items: GP 001 Combustion Turbines  
SV 004 Turbine Engine 4

What to do	Why to do it
Performance Test: due 365 days after Permit Issuance to measure EU 004 opacity while combusting fuel oil.  For additional applicable performance test requirements, see "Performance Test Notifications and Submittals" in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1

**TABLE B: SUBMITTALS****B-1** 11/08/07

Facility Name: Xcel Energy - Granite City Generating  
Permit Number: 00900021 - 003

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.

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 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 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

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

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

Facility Name: Xcel Energy - Granite City Generating  
Permit Number: 00900021 - 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

**TABLE B: RECURRENT SUBMITTALS****B-3** 11/08/07

Facility Name: Xcel Energy - Granite City Generating

Permit Number: 00900021 - 003

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. 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 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). Submit the certification on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. The certification covers all deviations experienced during the calendar year.	Total Facility

**APPENDIX**

Facility Name: Xcel Energy - Granite City Generating

Permit Number: 00900021-003

**Insignificant Activities Required To Be Listed**

<b>Minn. R. 7007.1300</b>	<b>Activity</b>	<b>Applicable performance standard</b>
subp. 3.H(3)	Welding Equipment	Minn. R. 7011.0715
subp. 3.K	Spray paint equipment for facility upkeep	Minn. R. 7011.0715
subp. 4	Temporary/emergency heating equipment	Minn. R. 7011.0515
subp. 4	Temporary internal combustion engines	Minn. R. 7011.2300
subp. 4	VOC fugitive emissions from distillate oil truck loading, pumps, valves, flanges, and turbine startup engine fuel reservoirs	
subp. 4	494,792 gallon distillate oil storage tank; 1,000,000 gallon distillate oil storage tank (currently out of service)	Minn. R. 7011.1505
subp. 4	Four 300 hp turbine startup engines	Minn. R. 7011.2300

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 00900021-003**

This technical support document (TSD) is for all parties interested in the permit and meets the requirements of 40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1. This document provides the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the permit.

**1. General Information**

**1.1. Applicant and Stationary Source Location:**

Owner and Operator Address and Phone Number	Facility Address (SIC Code: 4911)
Northern States Power d/b/a Xcel Energy 414 Nicollet Mall Minneapolis, Minnesota 55401-1993 Nancy Glass (612) 330-5520 <a href="mailto:nancy.c.glass@xcelenergy.com">nancy.c.glass@xcelenergy.com</a>	680 US Highway 10 North St. Cloud Benton County Minnesota 56304-0238

**1.2. Facility Description**

This facility generates electricity mainly during periods of peak electrical demand. It is composed of four identical simple cycle combustion turbine generators capable of firing either natural gas or distillate fuel oil, and several insignificant activities. This permit is a reissuance of the title V operating permit.

**1.3 Description of any Changes Allowed with this Permit Issuance**

No changes are allowed by this permit.

**1.4 Description of All Amendments Issued Since the Issuance of the Last Total Facility Permit**

Permit Number and Issuance Date	Action Authorized
Permit No. 00900021-002 June 25, 2001	Administrative Amendment to revise title V modeling requirements.

**1.5. Facility Emissions:**

**Table 1. Total Facility Potential to Emit Summary**

	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	54	54	2281	3975	386	10	3.6	5.8
Total Facility Actual Emissions (2005)	0.13	0.13	0.10	6.69	1.54	0.04	HAPs not reported in emission inventory	

**Table 2. Facility Classification**

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Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	SO <sub>2</sub> , NO <sub>x</sub> , CO		PM, PM <sub>10</sub> , VOC
Part 70 Permit Program	SO <sub>2</sub> , NO <sub>x</sub> , CO		PM <sub>10</sub> , VOC
Part 63 NESHAP			HAPs

## 2. Regulatory and/or Statutory Basis

### New Source Review

The facility is an existing major 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)

The four gas turbines at this facility were constructed prior to the effective date of part 60 subpart GG, Standards of Performance for Stationary Gas Turbines, and have not been modified or reconstructed after the October 3, 1977, effective date. Therefore subpart GG does not apply.

### National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is a natural minor source for HAPs and therefore, part 63 does not apply.

### Clean Air Interstate Rule (CAIR)

On March 10, 2005, the U.S. EPA adopted a new rule to address the interstate transport of air pollutants known as the Clean Air Interstate Rule (CAIR). CAIR is a cap and trade program that will permanently cap emissions of SO<sub>2</sub> and NO<sub>x</sub> in the eastern United States and achieves large reductions of SO<sub>2</sub> and/or NO<sub>x</sub> emissions across 28 eastern states and the District of Columbia. In Minnesota, CAIR applies for fine particulate matter only, and not for ozone. As defined at 40 CFR §51.123(cc),

*Electric generating unit or EGU means:*

- (1) ... a stationary, fossil fuel-fired boiler or stationary, fossil fuel-fired combustion turbine serving at any time, since the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

Affected sources are all fossil fuel-fired electric generating units with a nameplate capacity of greater than 25 MW. All four combustion turbines at the facility are fossil fuel-fired electric generating units with nameplate capacity of 17 MW. Therefore these units are not subject to CAIR.

### Acid Rain Program

The four electric generating units are all simple cycle combustion turbines that commenced operation in 1972, and therefore are not affected units according to §72.6(b)(1).

### Tribal Involvement

This facility is in Benton County. The Mille Lacs Band of Ojibway has expressed the desire to be informed of air permitting activities in Benton County. On May 2, 2007, an email was sent to the contacts for the tribe, Charlie Lippert and Curt K. informing them of the permit action. No response was received at that time from tribe staff.

### Minnesota State Rules

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The four gas turbines are subject to Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines.

**Table 3. Regulatory Overview of Facility**

EU, GP, or SV	Applicable Regulations	Comments:
GP 001	Minn. R. 7011.2300, subp. 1 and 2	Standards of Performance for Stationary Combustion Engines; Opacity and SO <sub>2</sub> standards
	Minn. R. 7017.2020, subp. 1	Opacity performance testing for each GP 001 emission unit

### 3. Technical Information

#### Updates Made Since Previous Title V Operating Permit issuance:

Replaced entire total facility section with updated current requirements.

Removed requirement to submit modeling information because this was completed.

Gas turbine heat input capacities originally reported on a LHV basis (244.1 mmBtu/hr for NG and 242.1 mmBtu/hr for fuel oil). These were converted to HHV as follows:

$$\begin{aligned}\text{LHV}_{\text{ng}} * 1.10 &= \text{HHV}_{\text{ng}} \\ \text{LHV}_{\text{fo}} * 1.065 &= \text{HHV}_{\text{fo}}\end{aligned}$$

Gasoline is no longer stored in the 1 mmgal tank and the tank is out of service. Therefore, the gasoline storage prohibition in the tank was removed from the total facility subject item.

The GP 001 fuel oil certification requirement was replaced with language allowing the Permittee to determine the fuel oil sulfur content by sampling according to current ASTM methods or obtaining a bill of lading for each delivery specifying the fuel oil grade. This change was prompted by the Permittee and MPCA enforcement staff.

#### Emission Calculations

The Permittee provided a calculations spreadsheet that was revised and corrected by the permit writer. The main changes were the conversion of emissions based on LHV to a HHV basis. Delta emissions data was revised as well.

#### 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.

The following is a summary of periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 4. Periodic Monitoring**

<b>Emission Unit or Group</b>	<b>Requirement (basis)</b>	<b>Additional Monitoring</b>	<b>Discussion</b>
GP 001 gas turbines	Minn. R. 7011.2300 SO <sub>2</sub> limit	Distillate oil supplier certification of fuel oil sulfur content	Fuel oil sulfur content is directly related to SO <sub>2</sub> emissions
	Minn. R. 7011.2300 opacity limit	periodic method 9 opacity testing	Use of fuel oil or natural gas should result in little or no visible emissions once operating temperature has been achieved

### **3.3 Insignificant Activities**

There are several insignificant activities at the Granite City Generating Plant. These are listed in the permit appendix and in the table below:

**Table 5. Insignificant Activities**

<b>Insignificant Activity</b>	<b>General Applicable Emission limit</b>	<b>Discussion</b>
Fuel use: temporary/emergency heating equipment	PM or 0.4 lb/mmBtu, Opacity 20% with exceptions (Minn. R. 7011.0515)	Based on the fuels used and EPA published emissions factors, it is highly unlikely that these sources could violate the applicable requirement.
Storage Tanks: fuel oil	Minn. R. 7011.1505	Very low vapor pressure of oil requires no controls
VOC fugitive emissions from distillate oil pumps, valves, flanges, four turbine startup engine reservoirs, and fuel oil truck loading	no applicable requirements	No applicable requirements, so no monitoring is warranted. Also, potential VOC emissions are extremely low due to very low vapor pressure of fuel oil.

Insignificant Activity	General Applicable Emission limit	Discussion
Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source; brazing, soldering, and welding equipment	PM, variable depending on airflow or process weight rate Opacity 20% (Minn. R. 7011.0715)	While spray and welding equipment will have the potential to emit particulate matter, these particular activities are not associated with production, so they would be infrequent and usually occur outdoors. Testing or monitoring is not feasible.
Temporary internal combustion engines burning distillate oil, gasoline, or natural gas for plant maintenance; four permanent 139 hp gas turbine startup reciprocating engines; substation emergency generator	Opacity 20% SO <sub>2</sub> 0.5 lb/mmBtu (Minn. R. 7011.2300)	Based on the fuels used and EPA published emissions factors, it is highly unlikely that these sources would violate the applicable requirement.

### 3.4 Comments Received

Public Notice Period: September 19, 2007 - October 18, 2007

EPA 45-day Review Period: September 19, 2007 - November 2, 2007

No comments were received during the public notice period or the EPA review period.

### 4. Conclusion

Based on the information provided by Northern States Power dba Xcel Energy, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 00900021-003 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:      Marshall Cole (permit writer/engineer)  
    Christian Norman; Scott Parr (enforcement)  
    Andy Place (stack testing)  
    Hien Le (peer reviewer)

AQ File No. 202Q; DQ #465

Attachment:    Emissions Summary