AIR EMISSION PERMIT NO. 02500002- 002

IS ISSUED TO

Northern Natural Gas Company
for
NORTHERN NATURAL GAS - NORTH BRANCH
6579 420th Street
North Branch, Chisago County, MN 55056

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit applications:

Permit Type	Application Date
Total Facility Operating Permit - Reissuance	05/03/2002 (rev. 2/18/04, 5/26/04, 10/25/04,11/10/05)
Minor Amendment	11/23/2005

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/Major for NSR

Issue Date: March 14, 2006

Expiration: March 14, 2011
All Title I Conditions do not expire.

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

for Sheryl A. Corrigan
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:

The North Branch Compressor Station is used to pressurize natural gas in order to facilitate its transmission through the pipeline system. In operation since 1966, the facility consists of four natural gas-fired reciprocating engines to drive the pipeline natural gas compressors, a natural gas-fired emergency generator, a diesel-fired emergency generator, and insignificant sources of emissions such as space heaters and a small boiler.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Northern Natural Gas Co - North Branch

Permit Number: 02500002 - 002

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
SOURCE-SPECIFIC REQUIREMENTS	hdr
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr
These requirements apply where there is a reasonable possibility that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test 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. 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.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000
Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following information: 1. A description of the project 2. Identification of the emission unit(s) whose emissions of an NSR pollutant could be affected 3. 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 potential emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the unit(s) 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. The Permittee shall maintain records of this documentation.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
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. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if 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.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
The Permittee must submit a report to the Agency if the annual summed (actual plus potential, if applicable) 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: a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The annual emissions (actual plus potential, if any part of the project was analyzed using potential emissions) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection.	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
The Permittee shall comply and upon written request demonstrate compliance, 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.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, supbs. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0100-7009.0080.
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

Facility Name: Northern Natural Gas Co - North Branch

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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 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 specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	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)
RECORDKEEPING	hdr
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original 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

Facility Name: Northern Natural Gas Co - North Branch

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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 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
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 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Northern Natural Gas Co - North Branch

Permit Number: 02500002 - 002

Subject Item: **GP 001 Internal Combustion Engines**

Associated Items: EU 001 Natural Gas Reciprocating Engine 1

EU 002 Natural Gas Reciprocating Engine 2

EU 003 Natural Gas Reciprocating Engine 3

EU 004 Natural Gas Reciprocating Engine 4

EU 005 Natural Gas Auxiliary Generator

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been obtained. The averaging time for this limit is any ten consecutive seconds and the opacity limit applies to each individual emission unit.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input (met by equipment design - engines only burn natural gas, PTE of each is approximately 0.0006 lb/MMBtu).	Minn. R. 7011.2300, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Northern Natural Gas Co - North Branch

Permit Number: 02500002 - 002

Subject Item: **EU 006 Diesel generator**

Associated Items: SV 006 Emergency generator

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been obtained. The averaging time for this limit is any ten consecutive seconds.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input (met by equipment design - engine PTE based on AP-42 published emission factors is 0.29 lb/MMBtu).	Minn. R. 7011.2300, subp. 2
Fuel types allowed: Diesel fuel, by equipment design.	Minn. R. 7005.0100, subp. 35a
Hours of Operation: The Permittee shall maintain records of fuel use or hours of operation on site that document that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" date September 6, 1996, limiting operation to 500 hour per year.	Minn. R. 7007.0800, subp. 4 & 5

TABLE B: SUBMITTALS

Facility Name: Northern Natural Gas Co - North Branch

Permit Number: 02500002 - 002

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

Facility Name: Northern Natural Gas Co - North Branch

Permit Number: 02500002 - 002

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

Facility Name: Northern Natural Gas Co - North Branch

Permit Number: 02500002 - 002

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 11/05/1997. 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 occured, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 11/05/1997 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX B
Facility Name: Northern Natural Gas Company - North Branch
Permit Number: 02500002-002

Insignificant Activities and Applicable Requirements

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane. ▪ **Nine space heaters with a total rated heat input of 1.205 MMBtu/hour**	Minn. R. 7011.0510/0515
3(H)	Miscellaneous:	
	2. equipment used for hydraulic or hydrostatic testing ▪ **The facility has equipment for hydraulic and hydrostatic testing.**	Minn. R. 7011.0710/0715
	3. brazing, soldering or welding equipment; ▪ **Approximately 200 lb/yr of electrode is consumed during arc welding done on-site**	Minn. R. 7011.0710/0715
	4. blueprint copiers and photographic processes ▪ **The facility has blueprint copiers**	Minn. R. 7011.0105/0110 (opacity)
3(J)	Fugitive Emissions from roads and parking lots. ▪ **There are fugitive emissions from unpaved roads and a parking lot.**	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. ▪ **Spray painting for piping and emissions stacks for plant upkeep. Also sandblasting of this equipment prior to painting.**	Minn. R. 7011.0710/0715

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
4	Individual emissions units at a stationary source, each of which has: A. Potential emissions of 5.7 pounds per hour or actual emissions of two tons per year of carbon monoxide; B. Potential emissions of 2.28 pounds per hour or actual emissions of one ton per year for particulate matter, particulate matter less than ten microns, nitrogen oxide, sulfur dioxide, and VOCs; and C. For hazardous air pollutants, emissions units with: (1) potential emissions of 25 percent or less of the hazardous air pollutant thresholds listed in subp. 5; or (2) combined HAP actual emissions of one ton per year unless the emissions unit emits one or more of the HAPs listed in this subpart. ▪ **Natural gas fired boiler rated at 3.3475 MMBtu/hour, emits less than the thresholds.**	Minn. R. 7011.0710/0715

APPENDIX C
Facility Name: Northern Natural Gas Company - North Branch
Permit Number: 02500002-002

Parameters Used in Modeling Analysis for Title V Permit Compliance (NO_X)

Source ID	Allowed Fuel	Potential NO_X Emission Rate (lb/hr)	Stack Height (ft)	Stack Exit Diameter (ft)	Exhaust Gas Temperature (°F)	Exhaust Gas Flow Rate (acfm)
EU001	Natural gas	50.7	31.99	1.31	630	9193.9
EU002	Natural gas	50.7	31.99	1.31	630	9193.9
EU003	Natural gas	50.7	31.99	1.31	630	9193.9
EU004	Natural gas	50.7	31.99	1.31	630	9193.9
EU005	Natural gas	4.5	21.0	0.33	600	614.7

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 02500002-002

This technical support document 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 preliminary determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 4922)
Northern Natural Gas Company P.O. Box 3330 Omaha, NE 68103	6579 420th Street North Branch Chisago County
Randy Rice Vice President – Operations (402) 398-7600	Ronald Beidelman Division Environmental Specialist (952) 887-1712

1.2. Description of the Permit Action

The North Branch Compressor Station is used to pressurize natural gas in order to facilitate its transmission through the pipeline system. In operation since 1966, the facility consists of four natural gas-fired reciprocating engines to drive the pipeline natural gas compressors, a natural gas-fired emergency generator, a diesel-fired emergency generator, and insignificant sources of emissions such as space heaters and a small boiler. Emissions from these engines exceed PSD thresholds, and the facility is considered a major source. There have been no significant modifications at the facility since 1966.

1.3 Description of any Changes Allowed with this Permit Issuance

This permit authorizes installation of a new diesel powered emergency generator (EU006). This installation qualifies as a minor amendment, and the application was received on November 28, 2005.

1.4 Permit History

The original Part 70 operating permit was issued on November 5, 1997, and has not been amended since. On October 29, 2004, the Permittee submitted a notification of installation of insignificant activities (a boiler and an oil/water separator).

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	Single HAP tpy	All HAPs tpy
Total Facility Potential Emissions (including proposed modification)	13.6	13.6	0.45	909.6	110	34.2	15.6	22.6
Potential Emissions of Proposed Modification	0.03	0.03	0.28	1.1	0.11	0.02	neg	neg
Total Facility Actual Emissions (2004)	2.92	2.92	0.04	191.64	23.34	7.25	HAPs not reported in emission inventory	

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	**X**		
Part 70 Permit Program	**X**		
Part 63 NESHAP	**X**		

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)

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

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility does not currently have any glycol dehydration units, and therefore is not subject to 40 CFR 63 Subpart HHH National Emission Standards for Air Pollutants From Natural Gas Transmission and Storage Facilities (40 CFR 63.1270(c)).

The facility is an existing major source under 40 CFR pt. 63. EU005 and EU006 are emergency stationary RICEs, and EU001 – EU004 are existing 2-cycle lean burn stationary RICEs. Under 40 CFR §63.6590(b)(3), "A stationary RICE which is an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing compression ignition (CI) stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE that combusts landfill gas or digester gas equivalent

to 10 percent or more of the gross heat input on an annual basis, does not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary."

Although the Permittee indicated in the permit application that the facility would be subject to 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, the only such units at the facility are "existing small gaseous fuel boilers and process heaters" (40 CFR 63.7506(c)(3)). 40 CFR 63.7506(c) states that "The affected boilers and process heaters listed in paragraphs (c)(1) through (4) of this section are not subject to the initial notification requirements in Sec. 63.9(b) and are not subject to any requirements in this subpart or in subpart A of this part (i.e., they are not subject to the emission limits, work practice standards, performance testing, monitoring, SSM plans, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart, or any other requirements in subpart A of this part)."

Compliance Assurance Monitoring (CAM)

Since no control equipment is utilized to meet applicable emission limits, CAM does not apply.

Minnesota State Rules

The reciprocating engines (EU001 – EU004) and the auxiliary generator (EU005) 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:
EU005, EU006	Minn. R. 7011.2300	Auxiliary Generators • Standards of performance for stationary internal combustion engines – opacity and SO_2 • Burning pipeline-quality natural gas therefore no additional compliance demonstration required
EU001 – EU004	Minn. R. 7011.2300	Reciprocating Engines • Standards of performance for stationary internal combustion engines – opacity and SO_2 • Burning pipeline-quality natural gas therefore no additional compliance demonstration required

3. Technical Information

3.1 Calculations of Potential to Emit

Attachment 1 of this TSD contains detailed spreadsheets and supporting information prepared by both the Permittee and the MPCA. All emissions calculations are based on EPA approved emissions factors from AP-42, fuels burned, and equipment capacity.

For the original Title V permit, the calculations for the reciprocating engines were done using AP-42 emission factors for "rich-burn" engines. In the application for reissuance, the emission factors for 2-stroke lean-burn engines were used. The Permittee clarified (and certified) that these are lean-burn engines, not rich-burn.

3.2 Modeling

The modeling analysis required by the original Title V permit was submitted to the MPCA on December 15, 1998. The attached memo dated January 4, 1999 (attachment 2), summarizes the results of that modeling. The stack data contained in Delta and subsequently resubmitted with the permit application for reissuance shows different stack parameters than those used in the modeling analysis. On November 10, 2005, the MPCA received written (certified) clarification that the stack parameters used in the modeling were correct, so the stack parameters were amended in Delta to reflect this.

The AP-42 emission factors used to calculate emissions were also changed since the modeling was completed. The modeled NO_X emissions were 43.2 lb/hr for each of EU001 – EU004, and 2.9 lb/hr for EU005; the calculated NO_X emissions using current AP-42 factors are 50.7 lb/hr for each of EU001 – EU004, and 4.5 lb/hr for EU005. Modeled NO_X totaled 175.7 lb/hr:

$$(4 \times 43.2) + 2.9 = 175.7$$

Revised emission calculations yield 211.7 lb/hr, including the proposed new emergency generator (EU006):

$$(4 \times 50.7) + 4.5 + 4.4 = 211.7$$

The modeling analysis showed a maximum annual average NO_X concentration of 77.64 µg/m^3, at the facility fenceline. The NAAQS is 100 µg/m^3 on an annual average. To estimate the maximum annual concentration at the higher emission rate (211.7 lb/hr), use a ratio:

$$\frac{175.7 \frac{\text{lb}}{\text{hr}}}{77.64 \frac{\mu\text{g}}{\text{m}^3}} = \frac{211.7 \frac{\text{lb}}{\text{hr}}}{93.5 \frac{\mu\text{g}}{\text{m}^3}}$$

Since the estimated concentration at 211.7 lb/hr (93.5 µg/m^3) is less than the NAAQS of 100 µg/m^3, there is no need to request that modeling be repeated. The modeling parameters shown in the permit (Appendix C) reflect the physical modeled parameters (stack height, flow rate, etc) and the potential emissions, since restrictions on potential emissions were not assumed for modeling or permitting purposes.

3.3 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
EU001 – EU006	$SO_2 \leq 0.5$ lb/MMBtu Opacity ≤ 20 % with exceptions (Minn. R. 7011.2300)	None	Based on AP-42 and natural gas sulfur content, the PTE of the unit is significantly less than the rule limit; therefore, it is highly unlikely that it could violate the applicable requirement.

3.4 Insignificant Activities

NNG has several operations which are classified as insignificant activities. These are listed in Appendix B 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, depending on year constructed Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0510/0515)	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.
Equipment used for hydraulic or hydrostatic testing	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0710/0715)	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 particulate matter. In addition, these units would be operated and vented directly into a building, so testing is not feasible.
Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R.	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

Insignificant Activity	General Applicable Emission limit	Discussion
	7011.0710/0715)	vented inside a building, so testing for PM or opacity is not feasible.
Blueprint copiers and photographic processes	Opacity ≤ 20%, with excursions (Minn. R. 7011.0105)	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 particulate matter, especially in quantities to cause visible emissions. In addition, these units would be operated and vented directly into a building, so 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, such as spray printing of buildings, machinery, vehicles, and other supporting equipment	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirements. In addition, the nature of these activities is that they are performed in an outside area where the emissions would be fugitive in nature.
Individual units with actual emissions less than 2000 lb/year of certain pollutants	PM ≤ 0.6 or 0.4, depending on year constructed Opacity ≤ 20% with exceptions (Minn. R. 7011.0510/0515)	For these units, based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirements.

3.5 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.

3.6 Comments Received

Public Notice Period: 1/26/06 – 2/24/06
EPA 45-day Review Period: 1/26/06 – 3/13/06

Comments were not received from the public during the public notice period. Comments were not received from EPA during their review period. No changes were made to the permit after the public notice period.

4. Conclusion

Based on the information provided by Northern Natural Gas Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 02500002-002 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: Toni Volkmeier (permit writer/engineer)
Emily Hanson (enforcement)
Bonnie Nelson (peer reviewer)

Attachments:
1. PTE Summary and Calculation Spreadsheets
2. Copy of Air Dispersion Modeling Review Memo
3. Facility Description and CD-01 Forms