

**AIR EMISSION PERMIT NO. 11900029- 001**  
**IS ISSUED TO**

**VIKING GAS TRANSMISSION - NSP - ANGUS**  
County Road 20  
Angus, Polk County, Minnesota 56712

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

Permit Type	Application Date
Total Facility Operating Permit	09/15/95

This permit authorizes the Permittee to operate and construct 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 and with all general conditions listed in Minn. R. 7007.0800, subp. 16, and all standard permit requirements listed in 40 CFR § 70.6(a) which are incorporated by reference. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the Minnesota Pollution Control Agency (MPCA) rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal ; Part 70

**Issue Date:** October 8, 1997

**Expiration:** All Title I Conditions do not expire.

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Michael J. Sandusky  
Acting Division Manager  
Air Quality Division

for Peder A. Larson  
Commissioner  
Minnesota Pollution Control Agency

DML:yma

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**NOTICE TO THE PERMITTEE:**

Your stationary source may be subject to the requirements of the 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	(612)296-6300
Outside Metro Area	1-800-657-3864
TTY	(612)282-5332

The rule 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. Any requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to: Minn. R. ch. 7030 (Noise Pollution Control).

**FACILITY DESCRIPTION:**

The facility is a natural gas compressor station located in Milaca, Minnesota. The station consists of four reciprocating engines, one water jacket heater, one generator and one turbine engine all of which burn natural gas. Three of the reciprocating engines and the turbine engine drive compressors which compress natural gas in the pipeline, causing the gas to flow to the next compressor station. The fourth reciprocating engine serves an emergency generator. The engines and jacket water heater are only capable of burning natural gas.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.**

**Subject Item: Total Facility**

<b>What to do</b>	<b>Why to do it</b>
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Operating and/or production limits will be placed on emission units based on operating conditions during compliance testing. Limits set as a result of a compliance test (conducted before or after permit issuance) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025.	Minn. R. 7017.2025
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
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)
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
Shutdowns: Notify the Commissioner at least 24 hours in advance of shutdown of any process or control equipment if the shutdown would cause an increase in the emission of air contaminants. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 1
Breakdowns: Notify the Commissioner immediately of a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emission of air contaminants. At the time of notification or as soon thereafter as possible, the permittee shall also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Oral Notification of Deviations Endangering Human Health or the Environment: Within 24 hours of discovery, orally notify the Commissioner of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7007.0800, subp. 6(A)
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
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
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)
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

Record keeping: Retain all records at the stationary source, or a designated site, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at the stationary source, or a designated site, include all calibration and maintenance records, all original strip-chart 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)
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 federally enforceable.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
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**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Subject Item:** SV 006**Associated Items:** EU 006 Turbine Engine #1

What to do	Why to do it
Performance Test: due before 02/28/98 , but no earlier than 12/01/97, to measure nitrogen oxides (NOx) emissions. This test must be conducted at a time when the ambient temperature is below 0 deg. F. The results will be used to verify that total emissions remain below 40 tons per year when this emission unit operates at temperatures below that which the manufacturer guarantees the emission rate of NOx.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Subject Item:** EU 001 Reciprocating Engine #1A**Associated Items:** SV 001

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity . Opacity shall not exceed 20 percent for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Subject Item:** EU 002 Reciprocating Engine #2A**Associated Items:** SV 002

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity . Opacity shall not exceed 20 percent for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Subject Item:** EU 003 Reciprocating Engine #3A**Associated Items:** SV 003

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity . Opacity shall not exceed 20 percent for more than 10 consecutive seconds once operating temperatures have been obtained..	Minn. R. 7011.2300, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Subject Item:** EU 004 Water Jacket Heater**Associated Items:** SV 004

What to do	Why to do it
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 that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent shall be permissible for four additional minutes in any 60-minute period.	Minn. R. 7011.0510 subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

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

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity . Opacity shall not exceed 20 percent for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

**Subject Item:** EU 006 Turbine Engine #1**Associated Items:** CE 001 Other

SV 006

What to do	Why to do it
Sulfur Content of Fuel: less than or equal to 0.8 percent by weight	40 CFR Section 60.333(b); Minn. R. 7011.2300
Reporting: If there is a change in fuel supply, the Permittee must notify the MPCA of such change for re-examination of the custom fuel-monitoring schedule. A substantial change in fuel quality shall be considered as a change in the fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.	40 CFR Section 60.334(b); Minn. R. 7011.2350
Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are: ASTM D1072-80; ASTM D3246-81; and ASTM D4084-82 as referenced in 40 CFR Section 60.335(b)(2).	40 CFR Section 60.334(b); Minn. R. 7011.2350
Sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR Section 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters, or compliance may be demonstrated using an alternative schedule that has been approved by EPA.	40 CFR Section 60.334(b); Minn. R. 7011.2350
Sulfur Monitoring: If after the first 2 years of sulfur monitoring, the sulfur content of fuel shows little variability, and represents consistent compliance with 40 CFR Section 60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year.	40 CFR Section 60.334(b); Minn. R. 7011.2350
Notification of noncompliance: Should any sulfur analysis indicate noncompliance with 40 CFR Section 60.333, the Permittee shall notify the MPCA of such excess emissions and the custom fuel monitoring schedule shall be re-examined by the Administrator. Sulfur monitoring shall be conducted weekly during the interim period when this custom fuel-monitoring schedule is being re-examined.	40 CFR Section 60.334(b); Minn. R. 7011.2350
Recordkeeping: Records of sample analysis and fuel supply pertinent to the custom fuel-monitoring schedule shall be retained for a period of five (5) years, and be available for inspection by personnel of federal, state, and local air pollution control agencies.	40 CFR Section 60.334(b); Minn. R. 7011.2350
Opacity: less than or equal to 20 percent opacity . Opacity shall not exceed 20 percent for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1

## TABLE B: SUBMITTALS

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus  
Permit Number: 11900029 - 001

Table B lists the submittals you must send to the Commissioner. Table B is divided into two sections, for source-specific submittal requirements and for submittals required of all permittees. Source-specific submittals are further organized as either one-time only or recurrent requirements. You may also be subject to additional reporting requirements contained in the compliance schedule located in Table C of this permit. All submittals must be postmarked or received by the date specified in the table, and certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Submittals which must be provided on standardized forms approved by the Commissioner are noted in Tables B and C.

Send any application for a permit or permit amendment to: Permit Information Coordinator, Permit Section, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4914. Also send the Permit Information Coordinator notices of: accumulated insignificant activities, installation of control equipment, replacement of an emissions unit, and changes that contravene a permit term.

Send all other submittals to: Compliance Tracking Coordinator, Compliance Determination Unit, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 180 days after Permit Issuance for NOx. This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51 Appendix W.	Total Facility
Computer Dispersion Modeling Results	due 60 days after Computer Dispersion Modeling Protocol approval received from MPCA. Within 60 days of receipt of MPCA notification that modeling results demonstrate emissions will cause or contribute to modeled noncompliance of the ambient air standard of NOx, the Permittee shall submit a Schedule of Compliance to the Agency. The Schedule of Compliance shall specify corrective actions to be taken, and a timeframe for each action, to comply with the ambient air standard.	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	EU006
Notification of the Anticipated Date of Initial Startup	due 30 days before Anticipated Date of Initial Startup but no earlier than 60 days before anticipated initial startup.	EU006
Performance Test Notification (written)	due 30 days before Performance Test	SV006
Performance Test Plan	due 30 days before Performance Test	SV006
Performance Test Report - Microfiche Copy	due 105 days after Performance Test	SV006
Performance Test Report	due 45 days after Performance Test	SV006
Report	due 2 days after Discovery of Deviation (Discovery of Deviations Endangering Human Health or the Environment Report (written)). Submit a written description of any deviations endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Total Facility

**TABLE B: RECURRENT SUBMITTALS**

10/08/97

Facility Name: Viking Gas Transmission - NSP - Angus

Permit Number: 11900029 - 001

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
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.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year.	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 11900029-001**

This Technical Support Document (TSD) is for all the interested parties of the permit. The purpose of this document is to set forth the legal and factual basis for the permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner/Operator Address and Phone Number	Facility Address (SIC Code: 4922)
Northern States Power 414 Nicollet Mall Minneapolis, Minnesota 55402	Viking Gas Transmission Company County Road 20, RR3, Box 18 Angus, Minnesota

1.2. Description Of The Facility:

The facility is a natural gas compressor station located in Angus, Minnesota. The station consists of four reciprocating engines, one water jacket heater, one generator and one turbine engine. The natural gas fired engines drive compressors which pressurize the natural gas in the pipeline causing it to flow to the next compressor station. All engines are only capable of burning natural gas.

1.3 Description of all amendments issued since the issuance of the Total Facility permit and to be included in the Part 70 Permit.

The facility currently has a General Permit, therefore, there are no amendments considered in this Total Facility Permit.



#### 1.4. Facility Emissions:

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

EU No.	SV No.	Emission Unit Description	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
001	001	Reciprocating Engine-1	0.61	0.61	0.04	208.49	26.37	5.08		19.93	20.05
002	002	Reciprocating Engine-2	0.61	0.61	0.04	208.49	26.37	5.08		19.93	20.05
003	003	Reciprocating Engine-3	1.23	1.23	0.07	416.98	52.74	10.17		39.86	40.10
004	004	Water Jacket Heater	0.16	0.16	0.01	1.31	0.28	0.05			
005	005	Generator	0.09	0.09	0.01	29.78	3.77	0.73			
006	006	Turbine Engine-1	6.92	6.92	0.02	33.15	57.67	6.82			
Total Facility Limited Potential Emissions*			9.62	9.62	0.19	865.05	167.2	27.93		79.72	80.20
			2.01	2.01	0.12	675.19	85.40	16.46		64.34	64.66

\*These are the limited potential emissions from column 3 in GI-07 except that they have been verified and corrected as need be by MPCA staff. These are the potential emissions that would appear in a public notice.

Table 2. Facility (TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)	NO <sub>x</sub>		
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	NO <sub>x</sub> , CO, HAPs		

\* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51, Appendix S, and 40 CFR pt. 70.

#### 2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

## Regulatory Overview of Facility

**Table 3. Regulatory Overview**

EU,#	Applicable Regulations	Comments
EU006	40 CFR pt. 60, subp. GG	Limits for sulfur dioxide set to comply with 40 CFR § 60.333 - Unit is exempt from Nitrogen Oxides (NO <sub>x</sub> ) standard by 40 CFR § 60.332(j).

### 3. Technical Information:

This Total Facility Permit is for an existing major source under New Source Review (NSR), and authorizes the installation and operation of one new natural gas-fired combustion turbine engine (EU 006). The unit is subject to 40 CFR pt. 60, subp. GG, however, it is exempt from the NO<sub>x</sub> requirement in 40 CFR § 60.332, because it is a refurbished unit that does not fit the definition of reconstruction or modification (see applicability determination from U.S. Environmental Protection Agency Region V). However, the Permittee has indicated that installation of EU 006 is a non-major modification for NO<sub>x</sub> emissions under NSR, and therefore, EU 006 NO<sub>x</sub> testing is required to confirm this. The results will be used to verify that the total emissions remain below 40 tons per year when this emission unit operates at temperatures below that which the manufacturer guarantees the emission rate of NO<sub>x</sub>. The unit is subject to the fuel sulfur limit in 40 CFR § 60.333(b). Sulfur content of fuel will be determined with a custom sulfur monitoring plan.

### 4. Conclusion

Based on the information provided by the Viking Natural Gas Compressor Station, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 11900029-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

#### Staff Members on Permit Team:

Denise Leezer  
Marshall Cole  
Stuart Arkley

#### Attachments:

U.S. EPA Applicability Determination