

AIR EMISSION PERMIT NO. 12900046-005

IS ISSUED TO

Alliance Pipeline LP

Alliance Pipeline - Olivia 23-A

38884 870th Avenue

Bird Island, Renville County, MN 55310

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

Permit Type	Application Date	Issue Date	Action Number
Total Facility Operating Permit Reissuance	12/05/2003	01/26/2006	004
Major Amendment	08/21/2006	See below	005

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; Part 70/Limits to Avoid New Source Review

Issue Date: April 17, 2007

Expiration: 01/26/2011
Title I Conditions do not expire.

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

for Brad Moore
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

This facility is a compressor station on a natural gas pipeline. A stationary gas turbine (also referred to as a combustion turbine (EU 001)) is used to power the pipeline compressor. A pair of alternately-operated small heating boilers and an emergency power generator are also located at the site. The combustion turbine is the only activity that is not insignificant.

ACTION 005:

This major amendment revises terminology describing the main components of the stationary gas turbine EU 001 in part to avoid confusion between the axial compressor in the stationary gas turbine and the pipeline compressor that compresses the pipeline contents. Also, permit requirements were added to the gas turbine component replacement provisions to clarify that if component replacement constitutes reconstruction as defined at 40 CFR § 60.15, the stationary gas turbine would be subject to Part 60, Subpart KKKK for reconstructed turbines.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Alliance Pipeline - Olivia 23-A
 Permit Number: 12900046 - 005

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
Ambient Air Quality Standards: The Permittee shall comply with and upon written request demonstrate compliance with National Primary and Secondary Ambient Air Quality Standards in Title 40 CFR part 50, and the Minnesota Ambient Air Quality Standards at Minn. R. 7009.0010 to 7009.0080.	40 CFR part 50; Minn. Stat. Sec. 116.07, subs. 4a and 9; Minn. R. 7007.0100, subs. 7A, 7L and 7M; Minn. R. 7007.0800, subs. 1, 2, and 4; Minn. R. 7009.0010-7009.0080
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
<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>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</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2030, subp. 1-4, Minn. R. 7017.2035, subp. 1-2, and Minn. R. 7017.2018
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 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
<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
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

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Alliance Pipeline - Olivia 23-A
 Permit Number: 12900046 - 005

<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"> 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. 	<p>Minn. R. 7019.1000, subp. 1</p>
<p>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.</p>	<p>Minn. R. 7019.1000, subp. 4</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>
<p>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.</p>	<p>Minn. R. 7011.0150</p>
<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>	<p>Minn. R. 7007.1150 through Minn. R. 7007.1500</p>
<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>	<p>Minn. R. 7007.1400, subp. 1(H)</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>
<p>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).</p>	<p>Minn. R. 7007.0800, subp. 5(C)</p>
<p>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.</p>	<p>Minn. R. 7030.0010 - 7030.0080</p>
<p>The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.</p>	<p>Minn. R. 7007.0800, subp. 16</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 9(A)</p>
<p>Emission Inventory Report: due 91 days after end of each calendar year (April 1). Submit the report on a form approved by the Commissioner.</p>	<p>Minn. R. 7019.3000 through Minn. R. 7019.3010</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 through Minn. R. 7002.0095</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046 - 005

Subject Item: EU 001 Gas Turbine - GE LM2500 DLE/Nuovo Pignone

Associated Items: SV 001

What to do	Why to do it
<p>Gas Turbine Replacement and Reconstruction: The gas turbine is composed of four main components: an axial compressor, combustor, high pressure turbine (provides mechanical power to drive the axial compressor), and the power turbine (converts thermal to mechanical energy to drive the pipeline compressor). The axial compressor, combustor and high pressure turbine are also known as a gas generator. The gas generator is a GE LM2500 and the power turbine is manufactured by Nuovo Pignone.</p> <p>The Permittee is authorized to replace any or all of the four components for maintenance purposes at manufacturer's specified time intervals. Replacement of components meeting the definition of 'reconstruction' as defined at 40 CFR Section 60.15, triggers requirements of 40 CFR part 60, subpart KKKK for reconstructed facilities. This permit includes the subp. KKKK requirements for reconstructed affected facilities.</p> <p>(continued below)</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Gas Turbine Replacement and Reconstruction (continued from above): If subpart KKKK requirements are triggered due to reconstruction, the Permittee is no longer subject to subpart GG, and shall meet the subpart KKKK requirements in this subject item.</p> <p>Requirements specific to subpart GG are listed under headings containing the phrase 'NO RECONSTRUCTION'. Requirements specific to subpart KKKK are listed under headings containing the phrase "RECONSTRUCTION".</p> <p>Requirements listed under headers that are silent regarding reconstruction, apply regardless if there is reconstruction.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>EMISSION LIMITS</p>	<p>hdr</p>
<p>Nitrogen Oxides: less than or equal to 30 lbs/hour</p>	<p>Title I Condition: To limit potential emissions to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000</p>
<p>Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.</p>	<p>Minn. R. 7011.2300, subp. 1</p>
<p>Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input</p>	<p>Minn. R. 7011.2300, subp. 2</p>
<p>OPERATING CONDITIONS</p>	<p>hdr</p>
<p>Fuel Use: Limited to pipeline natural gas</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>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.</p>	<p>40 CFR Section 60.7</p>
<p>Maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required, recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.</p>	<p>40 CFR Section 60.7</p>
<p>EMISSION LIMITS - NO RECONSTRUCTION</p>	<p>hdr</p>
<p>Nitrogen Oxides: less than 121 parts per million dry by volume at 15% oxygen.</p>	<p>40 CFR Section 60.332(a); Minn. R. 7011.2350</p>
<p>Sulfur Dioxide: Less than or equal to 0.015 percent by volume at 15 percent oxygen and on a dry basis, or, Sulfur content of fuel: less than or equal to 0.8 percent by weight.</p>	<p>40 CFR Section 60.333; Minn. R. 7011.2350</p>
<p>MONITORING - NO RECONSTRUCTION</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046 - 005

<p>Fuel Monitoring: The Permittee shall follow the applicable fuel sulfur and nitrogen content monitoring requirements in Section 60.334(h) and shall monitor at the frequency specified in 60.334(i).</p> <p>Section 60.334(h)(3) allows the owner or operator to not monitor total sulfur content of gaseous fuel if the fuel is shown to meet the definition of natural gas as defined in Section 60.331(u), regardless if there is an existing custom fuel monitoring schedule approved by the administrator. Section 60.334(h)(2) allows the owner or operator to not monitor fuel nitrogen content if a NOx emission allowance ('F') for fuel-bound nitrogen of zero is claimed in the applicable equation in Section 60.332.</p>	<p>40 CFR Sections 60.334(h) and (i); Minn. R. 7011.2350</p>
<p>PERFORMANCE TESTING - NO RECONSTRUCTION</p>	<p>hdr</p>
<p>Performance Test: due before end of each calendar 36 months starting 06/17/2004 and no later than 180 days after replacement of any or all of the EU 001 four gas turbine components. This performance test is for nitrogen oxides. Testing shall be performed in accordance with 40 CFR Section 60.8 and following the procedures specified in 40 CFR Section 60.335.</p>	<p>40 CFR Section 60.8(a); Minn. R. 7017.2020, subp. 1</p>
<p>EMISSION LIMITS - RECONSTRUCTION</p>	<p>hdr</p>
<p>Nitrogen Oxides: less than or equal to 42 parts per million dry by volume at 15% oxygen or 2.0 lb/MWh.</p>	<p>40 CFR Section 60.4320(a) and part 60, subpart KKKK Table 1</p>
<p>Sulfur Dioxide: less than or equal to 0.06 lbs/million Btu heat input or 0.90 lb/megawatt-hour gross output. The Permittee shall not burn any fuel in EU 001 which contains total potential sulfur emissions in excess of 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input.</p>	<p>40 CFR Section 60.4330(a)</p>
<p>MONITORING - RECONSTRUCTION</p>	<p>hdr</p>
<p>Perform annual performance tests in accordance with Section 60.4400 to demonstrate continuous compliance. If the NOx emission result from the performance test is less than or equal to 75 percent of the applicable NOx emission limit in 60.4320(a) for the turbine, you may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NOx emission limit for the turbine, you must resume annual performance tests.</p>	<p>40 CFR Section 60.4340(a)</p>
<p>As an alternative to Section 60.4340(a) performance testing requirements, you may install, calibrate, maintain and operate one of the following continuous monitoring systems: (1) Continuous emission monitoring as described in Sections 60.4335(b) and 60.4345, or (2) Continuous parameter monitoring as follows: (ii) For any lean pre-mix stationary combustion turbine, you must continuously monitor the appropriate parameters to determine whether the unit is operating in low-NOx mode.</p>	<p>40 CFR Section 60.4340(b)</p>
<p>Fuel Sulfur Content: Maintain a current valid purchase contract, specifying the maximum total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet.</p>	<p>40 CFR Section 60.4365(a)</p>
<p>PERFORMANCE TESTING - RECONSTRUCTION</p>	<p>hdr</p>
<p>Performance Test: no later than 180 days after reconstruction of EU 001 and annually thereafter as required by 40 CFR Section 60.4400.</p>	<p>40 CFR Sections 60.8(a) and 60.4400; Minn. R. 7017.2020, subp. 1</p>
<p>REPORTING - RECONSTRUCTION</p>	<p>hdr</p>
<p>Submittal of Annual NOx Performance Test Results: submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test.</p>	<p>40 CFR Section 60.4375(b)</p>
<p>TURBINE COMPONENT REPLACEMENT PROVISIONS</p>	<p>hdr</p>
<p>EU 001 Turbine Component Replacement Authorization: The Permittee is allowed to replace any of the four main gas turbine components as needed. The four main components are the turbine axial compressor, combustor, high pressure turbine, and power turbine. The Permittee may also replace the entire gas generator (axial compressor, combustor, and high pressure turbine) with a gas generator of the same model and ISO-rated horsepower. If replacement of components qualifies EU 001 as a reconstructed facility for purposes of part 60, subpart KKKK, the Permittee shall follow the applicable subp. KKKK requirements in this subject item instead of the subp. GG requirements.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>(continued below)</p>	

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046 - 005

<p>EU 001 Turbine Component Replacement Authorization (continued): If the turbine axial compressor, the combustor, the high pressure turbine, or entire gas generator is replaced, the Permittee shall furnish notifications and reports and conduct a NOx test in the required timeframe according to part 60 subpart A, subparts GG or KKKK (whichever is applicable), and Minn. R. chapter 7017.</p> <p>This authorization is not for installation of an additional gas turbine, does not permit operation of more than one turbine at the facility, does not allow an increase in the emission rate (lb/hr, tpy, lb/hp-hr, lb/mmBtu, etc.) of any pollutant, and does not permit a complete replacement of the entire stationary gas turbine as defined at 40 CFR Section 60.4420.</p> <p>(continued below)</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>EU 001 Turbine Component Replacement Authorization (continued): The gas turbine will continue to be designated as EU 001 regardless if these components have been replaced, and the gas turbine shall continue to be subject to all applicable requirements listed under subject item EU 001.</p> <p>This replacement shall not trigger any new applicable requirements not contained in this permit. The Permittee shall comply with all existing applicable permit conditions.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Turbine Component Replacement Recordkeeping: The Permittee shall record the date and nature of each component replacement no later than 15 days after completion of each replacement.</p> <p>The Permittee shall also record the total cost of the component replacement compared to the cost of an entirely new stationary gas turbine (as defined at 40 CFR Section 60.4420). This record shall be made at least 30 days before a NOx test is conducted on the gas turbine (as a result of the component replacement), but no later than 180 days after each component replacement.</p>	<p>Minn. R. 7007.0800, subp. 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-6

04/17/07

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046 - 005

Subject Item: EU 003 Auxiliary Power Unit (APU) 400 kW**Associated Items: SV 003**

What to do	Why to do it
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.	Minn. R. 7007.0800, subp. 4 and 5

TABLE B: SUBMITTALS

B-1 04/17/07

Facility Name: Alliance Pipeline - Olivia 23-A
Permit Number: 12900046 - 005

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

B-2 04/17/07

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046 - 005

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 04/17/07

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046 - 005

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 06/08/1999. 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 31 days after end of each calendar year starting 06/08/1999 (for the previous calendar year). Submit the certification on a form approved by the Commissioner, both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Alliance Pipeline - Olivia 23-A

Permit Number: 12900046-005

Insignificant Activities Required to be Listed

Activity	Minn. R. 7007.1300, subpart	Applicable Performance Standard
natural gas-fired boiler ¹	subp. 4	Minn. R. 7011.0515 PM and opacity
natural gas-fired boiler ¹	subp. 4	Minn. R. 7011.0515 PM and opacity
natural gas-fired auxiliary power unit/ emergency generator (EU 003)	subp. 4	Minn. R. 7011.2300 Opacity and SO ₂

¹Note: the two boilers are redundant and operate alternately and not simultaneously

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 12900046-005

This Technical Support Document(TSD) is for all parties interested in the permit and meets the requirements in 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 determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

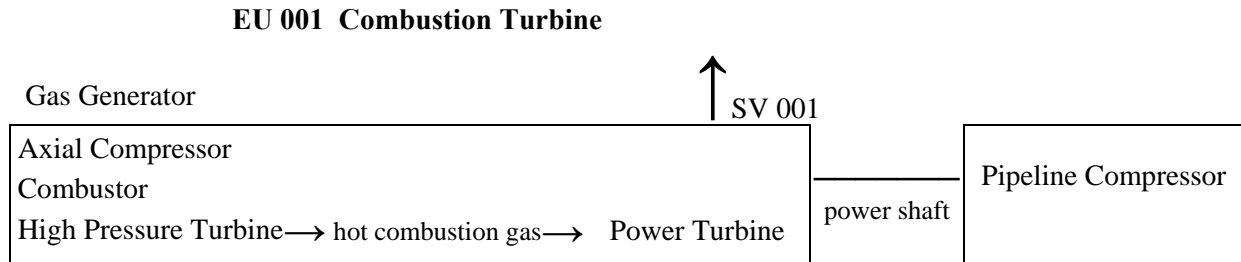
Applicant/Address	Stationary Source/Address (SIC Code: 4922)
Alliance Pipeline 6385 Old Shady Oak Road Suite 150 Eden Prairie, MN 55344	38884 870th Ave Bird Island Renville County
Contact: Troy T. Meinke Phone: (952) 983-1009 Fax: (952) 944-9166	

1.2. Facility Description

This facility is a compressor station on a natural gas pipeline. A combustion turbine (CT; also referred to as a gas turbine) is used to power the pipeline compressor. A pair of alternately-operated small heating boilers and an emergency power generator are also located at the site. The CT (EU 001) is the only activity that is not insignificant. All sources combust only natural gas.

The CT is composed of four main components. These components are the turbine axial compressor, the combustor, the high pressure turbine, and the power turbine. The axial compressor, combustor, and high pressure turbine, collectively known as a gas generator, is a GE model LM2500. The power turbine is manufactured by Nuovo Pignone. The combustor is a triple annular design that combusts the fuel mixture in lean pre-mix mode using Dry Low Emissions technology at all operating loads. Refer to Figure 1.

Figure 1. Combustion Turbine and Pipeline Compressor



The axial compressor compresses ambient air used for fuel combustion in the combustor. Hot combustion gases from the combustor rotate the high pressure turbine which provides shaft power to drive the axial compressor. The hot combustion gases are ducted from the high pressure turbine to the

power turbine (physically bolted on to the gas generator) that converts heat energy into mechanical shaft energy to turn the pipeline compressor. The combustion gases exhaust through the stack on the power turbine.

A stationary gas turbine is defined by part 60 subpart GG as any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. Subpart GG defines a simple cycle gas turbine as any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam. EU 001 is a simple cycle combustion turbine.

A stationary gas turbine is defined by part 60 subp. KKKK as all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function.

The part 60 subpart KKKK definition confirms that the power turbine is part of the stationary gas turbine in part because the exhaust gases are emitted to the atmosphere from the power turbine.

1.3 Description of the Activities Allowed by this Permit Action

This is a major amendment to the existing part 70 operating permit. This amendment revises EU 001 requirement language for gas generator component and power turbine replacement. The language revision clarifies that the 'compressor' is the gas generator axial compressor and not the pipeline compressor.

The Permittee requested this revision to avoid confusion between the gas generator axial compressor and the pipeline compressor. The gas generator axial compressor compresses air for fuel combustion in the combustor, whereas the pipeline compressor (that is driven by mechanical shaft power from the power turbine that is driven by hot exhaust gas from the gas generator) compresses pipeline contents causing flow of the contents in the pipeline.

The revised language also clarifies that the entire General Electric LM 2500 gas generator can be replaced in whole, as well as any of its the three main components (turbine axial compressor, combustor, and high pressure turbine). Revised language also allows replacement of the power turbine. No emissions changes are associated with or allowed by this permit action.

Part 60 Subpart KKKK was promulgated recently and applies to stationary gas turbines constructed, modified, or reconstructed after February 18, 2005. Subpart KKKK contains numerous emission limits that are specific to new gas turbines and also to modified/reconstructed gas turbines for various fuels and turbine sizes.

This permit prohibits any increase of (NO_x and SO₂) emissions due to the replacement of any gas turbine component, and therefore the permit does not allow a modification as defined in §60.14. NO_x stack testing after component replacement is required to verify emissions have not increased. However, as previously stated, the permit authorizes the Permittee to periodically replace gas turbine components (part of routine maintenance) and therefore, the Permittee may potentially reconstruct the gas turbine as defined at §60.15. As a result the permit includes new requirements to accommodate the potential

applicability of subp. KKKK due to reconstruction. The permit does not contain requirements for a new combustion turbine subject to subp. KKKK because the Permittee indicates it has no plans to completely replace the gas turbine with a new gas turbine, and the permit prohibits this.

Table 1. Facility Classification

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

2. Regulatory and/or Statutory Basis

New Source Review

The combustion turbine is subject to a NO_x limit to restrict total facility emissions to less than the major source level under New Source Review. The limit is necessary for avoiding NSR because the part 60 subp. GG NO_x limit allows a NO_x emissions concentration of 121 ppmvd, which results in about 0.44 lb/mmBtu which equals 91 lb/hr or 399 tpy.

Part 70 Permit Program

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

New Source Performance Standards (NSPS)

The combustion turbine is subject to part 60, subp. GG, Standards of Performance for Stationary Gas Turbines. The combustion turbine will be subject to subp. KKKK if it is reconstructed.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is a natural minor source of HAPs so no NESHAPs apply.

Minnesota State Rules

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

- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

Table 2. Regulatory Overview of Facility

EU, GP, or SV	Applicable Regulations	Comments:

EU 001	40 CFR part 60 Subpart GG (or KKKK if reconstructed) Title I Condition: NO _x limit to avoid PSD	NO _x and SO ₂ limits, monitoring, recordkeeping, reporting, and testing
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3. Technical Information

- Combustion Turbine Replacement Authorization: The Permittee periodically changes the turbine axial compressor, the combustor, the high pressure turbine, and the power turbine at specified time intervals as part of normal routine maintenance, or upon component failure. The Permittee states that this is standard industry practice.

The part 70 reissuance operating permit (No. 12900046-004) authorized periodic replacement of the combustor, axial compressor, power turbine, or the entire combustion turbine with the identical combustion turbine. The terminology used for the various components of the stationary gas turbine in permit 004 was not correct, and is being corrected by this current permit action. The stationary gas turbine is actually composed of four main components described as: axial compressor, combustor, high pressure turbine, and power turbine. The gas generator portion is composed of the axial compressor, combustor, and high pressure turbine.

This replacement authorization is not an NSR modification because the current 30 lb/hr NO_x limit applies to EU 001 regardless of EU 001 component replacements. In addition, the permit specifically states that an emissions increase of any pollutant is not authorized as part of the replacement authorization. Also, the Permittee is required to conduct NO_x testing according to part 60 subpart A and GG or KKKK, and Minn. R. chapter 7017, if the axial compressor, combustor, high pressure turbine, or the entire gas generator are replaced. This testing is required because a change of any of these components could potentially affect gas turbine performance and NO_x emissions.

- Insignificant Activities: All sources at this facility, except the gas turbine, are insignificant. There are two small alternately operated natural gas-fired boilers, and a natural gas-fired auxiliary power unit. For the auxiliary power unit, actual NO_x emissions are below 1.0 tpy which allows the unit to remain insignificant.

3.1 Periodic Monitoring

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

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

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;

- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate. Note that if EU 001 is reconstructed and is subject to part 60 subp. KKKK, periodic monitoring requirements for subpart GG requirement no longer apply and no periodic monitoring for subpart KKKK requirements is necessary because this standard is post-1990.

Table 3. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
EU 001	30 lb/hr NO _x Title I Condition: To limit potential emissions to less than major source levels as defined by 40 CFR Section 52.21	None	Use of pipeline natural gas and lean pre-mix (Dry Low Emissions) combustion to restrict NO _x emissions is inherent to the turbine combustor; performance tests at various loads measure emissions at 20-60% of this limit
	SO ₂ 0.0015% by vol or 0.8% fuel sulfur content 40 CFR Section 60.333	None	Use of pipeline natural gas ensures compliance with these limits
	Minn. R. 7017.2020, subp. 1	Periodic NO _x testing	Testing required when gas turbine components are replaced or at 36-month intervals, whichever comes first. The 36-month interval was determined by the stack test frequency plan based on results from the most current NO _x test

3.2 Comments Received

Public Notice Period: February 22 - March 26, 2007

EPA 45-day Review Period: February 22 - April 10, 2007

No comments were received.

4. Conclusion

Based on the information provided by Alliance Pipeline, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 04700059-005

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)
Sarah Kilgriff (enforcement)
Steve Gorg (stack testing)
Jenny Reinertsen (peer reviewer)