217/782-2113

CONSTRUCTION PERMIT -– NESHAP SOURCE

PERMITTEE

Natural Gas Pipeline Co. of America – Station 310
c/o Kinder Morgan, Inc.
Attn: Lisa Carty, Air Quality Engineer
370 Van Gordon Street
Lakewood, Colorado 80228

Application No.: 06120005 I.D. No.: 027807AAC
Applicant's Designation: Date Received: December 4, 2006
Subject: Engines 11, 12 and 13
Date Issued: May 2, 2007
Location: NGPL - Station 310, Route 4, Centralia, Clinton County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of three new natural gas fired reciprocating internal combustion engines (Engine 11, 12, and 13), as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Internal Combustion Engines

1.1 Description

The Permittee operates natural gas-fired internal combustion engines, which provide power to compressor units at the source that move natural gas through associated interstate transmission pipelines. This permit authorizes construction of three new gas fired engines, two with nominal capacity of 7,818 HP and one with 5,860 HP, which will replace existing engines (Engine 1 through 7). The existing engines shall be permanently removed from the source or otherwise permanently disabled when all three new engines begin operation.

Note: Because the affected engines have lower emission rates than the existing engines that they replace, the Permittee expects that overall emissions from the source will decrease with the new engines.

1.2 List of Emission Units and Pollution Control Equipment

Units	Description	Emission Control Equipment
Engine 11	Natural Gas Fired, Caterpillar Model G12CM34, Nominal Capacity 5,860 HP	Catalytic Oxidation
Engine 12	Natural Gas Fired, Caterpillar Model G16CM34, Nominal Capacity 7,818 HP	Catalytic Oxidation
Engine 13	Natural Gas Fired, Caterpillar Model G16CM34, Nominal Capacity 7,818 HP	Catalytic Oxidation

1.3 Applicability Provisions and Applicable Regulations

a. An “affected engine” for the purpose of these unit specific conditions is a new engine described in Conditions 1.1 and 1.2.

b. i. This permit is issued based on the source being a major source of emissions of hazardous air pollutants (HAPs), so that affected engines are subject to the applicable requirements of National Emission Standards for Hazardous Air pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63 Subpart ZZZZ.

ii. Pursuant to 40 CFR 63.6600(b), the affected engines shall comply with the applicable CO or formaldehyde emission limitation specified for 4SLB new stationary RICE, in Table 2a of 40 CFR 63 Subpart ZZZZ, at all times, except during startup, shutdown, and malfunction in accordance with 40 CFR 63.6605(a).

c. The affected engines are subject to 212.123(a), which provides that the emissions of smoke or other particulate matter from each engine shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 201.149, 212.123(b), or 212.124.b.

1.4 Non-Applicability of Regulations of Concern

a. i. This permit is issued based on this project not being a major modification subject to the PSD rules for emissions of PM and SO_2 because the new engines will not have significant emissions, as defined under the PSD rules, for PM or SO_2. (See Attachment 1)

ii. This permit is issued based on contemporaneous and credible decrease in nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic matter (VOM) emissions so that net increase in NO_x, CO, and VOM emissions accompanying this project is not significant. Therefore, this project is not a major modification pursuant to PSD, 40 CFR 52.21(b)(2)(iii)(h) and (b)(32). (See Attachment 1)

Note: The decreases in emissions were due to removal of existing engines (Engine 1 through 7) and retrofitting of Engine 10 with high pressure fuel injection (HPFI) technology.

iii. The Permittee shall also fulfill the applicable recordkeeping and reporting requirements of the PSD rules, 40 CFR 52.21(r)(6), for this project.

b. The affected engines are not subject to the NSPS, 40 CFR 60 Subpart IIII, because the engines are not compression ignition type stationary internal combustion engines.

c. The affected engines are not subject to the requirements of 35 IAC 212.322 because they do not have a process weight rate as defined in 35 IAC 211.5250.

d. The affected engines are not subject to the requirements of 35 IAC 215.143 because the blowdown emissions associated with engines are not considered to be vapor blowdown pursuant to 35 IAC 215.143.

1.5 Operational and Production Limits and Work Practices

a. Pursuant to 40 CFR 63.6600(b), the Permittee shall, at all times, operate affected engines in compliance with the applicable operating limitations specified in Table 2b of 40 CFR 63 Subpart ZZZZ for new four stroke lean burn stationary RICE controlled with oxidation catalyst.

b. Pursuant to 40 CFR 63.6605(b) the Permittee shall, maintain and operate each affected engine, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practice for minimizing emissions at all times, including periods of startup, shutdown, and malfunction.

c. The Permittee shall carry out detailed operational evaluations and inspections of the affected engines on a routine basis. These actions shall be taken on at least an annual basis for an engine that is in routine service and on at least an equivalent interval frequency in terms of actual engine operating hours for an affected engine that is not in routine service.

d. The affected engines shall only be fired with natural gas.

1.6 Emission Limitations

a. The emissions of each affected engine shall not exceed the following limits. Compliance with annual limits shall be determined from a running total of 12 months of data.

Pollutant	Engine 11		Engine 12 and 13	
	Lbs/hour	Tons/year	Lbs/hour	Tons/year
NO_x	10.14	44.5	13.53	59.3
CO	1.62	7.2	2.16	9.5
VOM	4.6	20.7	6.31	27.7
SO_2	0.02	0.1	0.03	0.12
PM	0.003	0.1	0.004	0.1
Total HAPs**	2.2	9.6	2.95	12.9

** Sum of individual HAP, i.e., acetaldehyde, formaldehyde, acrolein, benzene, and toluene.

1.7-1 Testing Requirements

The Permittee shall have emissions tests for the affected engines conducted as follows.

a. i. Pursuant to 40 CFR 63.6610(a), Within 180 days of initial startup of an affected engine, the Permittee shall conduct initial performance test, for affected engine, in accordance with the provisions specified in 40 CFR 63.7(e) and Table 4 of 40 CFR 63 Subpart ZZZZ.

ii. The Permittee shall conduct subsequent performance test for each affected engine, in accordance with the applicable testing requirements of 40 CFR 63 Subpart ZZZZ.

b. Within 180 days after operating an affected engine at the greatest load at which it will normally be operated but not later than 300 days after its initial startup, the Permittee shall have emissions tests performed by an approved testing service as follows.

i. Emissions of NO_x shall be measured during three levels of load on an engine, i.e., at high load, intermediate load and low load, as readily achievable during the period of testing.

ii. Emissions of VOM and selected organic HAPs shall be measured at two levels of load on an engine, i.e., at high load and at either intermediate or low load during the period of testing, unless testing at a single load is approved by the Illinois EPA as part of the review of the test plan.

iii. Observations of opacity shall be made for at least 12 minutes (two 6-minute averages) during each of the test runs for the above emission measurements.

c. Emissions shall be measured by an approved testing service at maximum load for NO_x, VOM, and HAPs. During the initial performance tests, emissions shall also be measured at the minimum load and an intermediate load level for NO_x. The low load and intermediate load testing may be achieved through 20 minute test runs.

d. USEPA methods and procedures shall be used for testing, including the following methods, unless other USEPA

supported methods are approved by the Illinois EPA as part of the its review of the test plan:

Location of Sample Points	USEPA Method 1 or 19
Gas Flow and Velocity	USEPA Method 2 or 19
Flue Gas Weight	USEPA Method 3 or 3A or 19
Moisture	USEPA Method 4 or 19
Nitrogen Oxides	USEPA Method 7E
Carbon Monoxide	USEPA Method 10
Volatile Organic Material	USEPA Methods 18 and 25A
Opacity	USEPA Method 9

e. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:

i. The baseline levels of NO_x and VOM emissions against which the performance of the new engines will be compared.

ii. The person(s) who will be performing sampling and analysis and their experience with similar tests.

iii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for each engine will be tracked and recorded.

iv. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations.

v. The test method(s), which will be used, with the specific analysis method, if the method can be used with different analysis methods.

f. The Illinois EPA shall be notified prior to these tests to enable it to observe these tests. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA’s ability to observe testing.

g. Three copies of the Final Reports for these tests shall be forwarded to the Illinois EPA, Compliance Section in Springfield within 60 days after the test results are compiled and finalized, in advance of the operating permit application if necessary. The Final Report from testing shall contain a minimum:

i. A summary of test results;

ii. General information;

iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule;

iv. Detailed description of test conditions, including:

A. Fuel consumption (standard ft^3);

B. Firing rate (million Btu/hour); and

C. Engine output rate (hp);

v. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

h. Submittals and notification with respect to emissions testing shall be made to the following:

Illinois Environmental Protection Agency
Division of Air Pollution Control – Regional Office
2009 Mall Street
Collinsville, Illinois 62234

And

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

1.7-2 Opacity Observation Requirements

a. The Permittee shall have the opacity of the emissions from the affected engines during representative weather and operating conditions determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below.

i. Following the initial emission measurements, periodic observations of opacity shall be conducted at least every year for the affected engines, if any visible emissions, as determined by USEPA Method 22, are normally present when the engine is operating.

ii. Upon written request by the Illinois EPA, observations of the opacity of the affected engines shall be conducted within 60 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later.

b. The duration of opacity observations shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 10.0 percent.

c. i. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name(s) and employer(s) of the qualified observer(s).

ii. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.

d. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

e. The Permittee shall submit a written report for this testing within 15 days of the date of testing. This report shall include:

i. Date and time of testing.

ii. Name and employer of qualified observer.

iii. Copy of current certification.

iv. Description of observation condition, including recent weather.

v. Description of the operating conditions of the affected engine.

vi. Raw data.

vii. Opacity determinations.

viii. Conclusions.

1.8 Monitoring and Instrumentation Requirements

a. The Permittee shall comply with the applicable monitoring requirements of 40 CFR 63 Subpart ZZZZ.

b. In addition to retaining the records of monitored operating parameter(s) in accordance with the monitoring requirements of 40 CFR 63 subpart ZZZZ for each affected engine, the Permittee shall maintain the following records for required instrumentation:

i. A file for each instrument that contains: 1) The manufacturer's specifications for the unit; and 2) The written instructions provided by manufacturer for operation, calibration, maintenance and repair of the unit.

ii. A log of other records for the instruments, which at a minimum identifies any outage of the instrument, with explanation, and calibration, maintenance and repair activities performed on the system, with date and description.

1.9 Recordkeeping Requirements

a. The Permittee shall comply with the applicable recordkeeping requirements of 40 CFR 63 Subpart ZZZZ for each affected engine.

b. The Permittee shall maintain records for each affected engine for fuel usage or operating hours, on a monthly and annual basis.

c. The Permittee shall maintain an operating log or other records for each affected engine, that at a minimum, identifies when each affected engine operated and operating data for the engine, as measured pursuant to Condition 1.8, recorded on a regular schedule.

d. The Permittee shall maintain records of the following for each incident when an affected engine operated without the control measures:

i. The date of the incident and identification of the affected engine that was involved.

ii. A description of the incident, including the control measures that were not present or implemented; the control measures that were present, if any; and the magnitude of the NO_x, CO, VOM and HAP emissions during the incident.

iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.

iv. The length of time after the incident was identified that the affected engine continued to operate before control measures were in place or the engine was shutdown (to resume operation only after control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.

v. The estimated total duration of the incident, i.e., the total length of time that the affected engine ran without control measures.

vi. A discussion of the probable cause of the incident and any preventative measures taken.

vii. A discussion whether an applicable limitation in Conditions 1.4 or 1.6 may have been violated during the incident, with an estimate of the amount of any additional or excess emissions (pounds) from the incident, with supporting explanation.

e. i. The Permittee shall keep a file, which shall be kept current, that contains the emission factors used to calculate emissions from the different affected engines with supporting documentation.

ii. The Permittee shall maintain records of the emissions of NO_x, CO, VOM, PM and SO_2 of each affected engine (tons/month and tons/year), with supporting calculations.

f. The Permittee shall maintain an inspection and maintenance log or other records for each affected engine and associated emission control measures that, at a minimum, document performance of the inspections required by Condition 1.6(c) and other activities performed to maintain proper operation as related to control of emissions.

g. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for the affected engines that it conducts or that are conducted at its behest by individuals who are qualified to make such observations. For each occasion on which such measurements are made, these records shall include the formal report for the measurements if conducted pursuant to Condition 1.7-2, or otherwise the identity of the observer, a description of the measurements that were made, the operating condition of

the affected engine, the observed opacity, and copies of the raw data sheets for the measurements.

1.10 Reporting Requirements

a. The Permittee shall comply with the applicable notification and reporting requirements of 40 CFR 63 Subpart ZZZZ for the affected engines.

b. i. The Permittee shall promptly notify the Illinois EPA of a deviation from a requirement of this permit in accordance with the general requirements for such notifications in the CAAPP permit for the source.

ii. Until the CAAPP permit for the source is revised to address the replacement of existing engines with the new affected engines, the following timing shall apply to deviation notifications.

A. Deviations from applicable emission standards or short-term emission limitations that last more than two-hours shall be immediately reported to the Illinois EPA.

B. Deviations from limitations and other requirements related to annual emissions shall be reported within 30 days.

C. Deviations from other requirements shall be reported in a quarterly report.

c. Two copies of submittals and notification required by this permit shall be made to the Illinois EPA in accordance with the general provisions in the CAAPP permit for the source that address submittal of such material to the Illinois EPA.

1.11 Authorization for Operation of the Affected Engines

a. Under this permit, each affected engine may be operated for a period of up to one year (365 days) from initial startup to allow for equipment shakedown and emission testing as required. This period may be extended by the Illinois EPA upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing.

b. i. Upon successful completion of emission testing demonstrating compliance with applicable short-term limitations, the Permittee may continue to operate the affected engines, provided, however, that as provided by Section 39.5(5) of the Environmental Protection Act a complete application for revision of

the CAAPP permit for the source is submitted to the Illinois EPA within 12 months of initial startup of affected engines.

ii. As part of this application, the Permittee shall include detailed information on the potential emissions of CO from each affected engine in the absence of the catalytic oxidation system to determine whether these systems must be operated under a Compliance Assurance Monitoring Plan.

c. Upon complete submission of a CAAPP application within 12 months of initial startup, the Permittee may operate the engines under this construction permit until the CAAPP permit is issued.

1.12 Effect Of This Permit

This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.

If you have any questions on this, please call Kunj Patel at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

ECB:KMP:psj

cc: Region 3

Attachment 1

Table I – Future Emissions from the Proposed New Engines (Engine #11, 12, and 13) and Post-Retrofit Engine 10 with improved combustion Technology.

Emission Unit	Annual Emissions (tons)				
	NO_x	CO	VOM	PM/PM_{10}	SO_2
Engine 10	192.70	232.6	53.40	10.64	0.13
Engine 11	44.43	7.2	20.73	7.22	0.10
Engine 12 and 13 (Combined)	118.48	19.0	55.29	19.17	0.23
Total	355.61	258.8	129.42	37.04	0.45

Table II – Actual Baseline Emissions from the Existing Engines (Engine 1 through 7) and Pre-Retrofit Engine 10 with improved combustion Technology

Emission Unit	Annual Emissions (tons)				
	NO_x	CO	VOM	PM/PM_{10}	SO_2
Engine 10	920.10	158.00	35.60	10.64	0.13
Engine 1 through 7 (Combined)	1,864.86	521.42	98.56	21.25	0.26
Total	2,784.96	679.42	134.16	31.89	0.39

Table III – Net Emissions Changes

Time Period	Annual Emissions (tons)				
	NO_x	CO	VOM	PM/PM_{10}	SO_2
Future (Table I)	355.61	258.80	129.42	37.04	0.45
Past (Table II)	2,784.96	679.42	134.16	31.89	0.39
Change	-2,429.35	-420.62	-4.74	5.15	0.06
PSD Significant Limit	40.00	100.00	15.00	40.0/15.0	40.00

KMP:psj