

217/782-2113

CONSTRUCTION PERMIT

PERMITEE

Trunkline Gas Company
Attn: Eric Estopinal, Manager, Environmental Services
5444 Westheimer
Houston, Texas 77053-5306

Application No.: 01030039

I.D. No.: 197800ABU

Applicant's Designation:

Date Received: May 14, 2001

Subject: Internal Combustion Engines

Date Issued: October 18, 2001

Location: Joliet Station Amoco Road, Joliet

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a new compressor station that will include five new natural gas internal combustion engines each controlled by an oxidation catalyst, storage tanks and other ancillary equipment as described in the above-referenced application. This Permit is subject to standard condition attached hereto and the following special condition(s):

1.0 UNIT SPECIFIC CONDITIONS

1.1 Unit Internal Combustion Engines
Control Oxidation Catalyst

1.1.1 Description

The Compressor Station will pump natural gas through interstate transmission pipe lines. This compressor station would use five natural gas internal combustion engines to power the compressors. Combustion gases from the engines would be controlled by oxidation catalyst systems.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Process Description	Emission Control Equipment
---	Five Caterpillar natural gas internal combustion engines; each with 4445 Hp	Oxidation Catalyst Systems

1.1.3 Applicability Provisions and Applicable Regulations

- a. The "affected engines" for the purpose of these unit-specific conditions, are the engines described in Conditions 1.1.1 and 1.1.2.

- b. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2,000 ppm [35 IAC 214.301].

1.1.4 Non-Applicability of Regulations of Concern

Each affected engine is not subject to the requirements of 35 IAC 212.321 because it does not have a process weight rate as defined in 35 IAC 211.5250. [35 IAC 212.323]

1.1.5 Operational and Production Limits and Work Practices

- a. Natural gas shall be the only fuel fired in the affected engines.
- b. At all times, the Permittee shall to the extent practicable, maintain and operate the affected engines controlled by an oxidation catalyst per exhaust duct, in a manner consistent with good air pollution control practice for minimizing emissions.
- c. Startup Provisions

The Permittee is authorized to operate the engines during startup pursuant to 35 IAC 201.262, as the Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual starts, and frequency of startups. This authorization is subject to the following and may be further evaluated and revised in subsequent permits:

- i. This authorization only extends for a period of up two-hours following initial firing of natural gas during each event for each engine.
- ii. The Permittee shall take the following measures to minimize startup emissions, the duration of startups and minimize the frequency of startups:

Implementation of established startup procedures, including preheating an engine prior to startup when sufficient time is available.

1.1.6 Emission Limitations

- a. Emissions of smoke or other particulate matter from the affected engines shall not have an opacity greater than 30 percent, pursuant to 35 IAC

212.123(a), except as allowed by 35 IAC 201.149, 212.123(b), or 212.124.

- b. The affected engines shall be controlled by oxidation catalyst systems.
- c. i. Emissions from each affected engine shall not exceed the followings:

<u>Pollutant</u>	<u>Lb/Hr</u>
NO _x	6.85
CO	2.45
VOM	0.98
Formaldehyde	0.40

- ii. Total annual emissions from the affected engines shall not exceed the followings limits. Compliance with these annual limits shall be determined from a running total of 12 months of data.

<u>Pollutant</u>	<u>Tons/Year</u>
NO _x	150.09
CO	53.65
VOM	23
Formaldehyde	8.76

These limits are based on manufactures data and maximum continuous operating rate, 8,760 hr/yr for the affected engines. Emissions of formaldehyde are based on AP-42 factor.

The VOM limit also addressed fugitive and blowdowns, which are not addressed by the emission limits in Condition 1.1.6(b)(i).

1.1.7 Testing Requirements

- a. Within 60 days after operating the affected engines at the greatest load at which it will normally be operated but not later than 180 days after its initial startup, the Permittee shall have emissions test of the engines performed at its expense by an approved testing service as follows. These shall be used as the initial compliance test to demonstrate compliance with the limits and conditions set in this permit.
- b. Emissions shall be measured by an approved testing service at maximum load for NO_x, CO and VOM. During

the initial performance tests, emissions shall also be measured at a minimum load, and one intermediate load levels for NO_x, CO and VOM.

- c. The following USEPA methods and procedures shall be used for testing of emissions.

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

- d. 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 person(s) who will be performing sampling and analysis and their experience with similar tests.
- ii. 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 the engine will be tracked and recorded.
- iii. The specific determinations of emissions those are intended to be made, including sampling and monitoring locations. As part of this plan, the Permittee may set forth a strategy for performing emission testing of selected engines provided that all engines are fitted for testing; and the identity of the engine to be tested is determined immediately before testing, by the Illinois EPA or otherwise randomly.
- iv. The test method(s), which will be used, with the specific analysis method, if the method can be used with different analysis methods.

- e. 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 tests. 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.

- f. Three copies of the Final Reports for these tests shall be forwarded to the Illinois EPA within 30 days after the test result 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 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 ft³);
 - B. Firing rate (million Btu/hr);
 - C. Engine output rate (Hp); and
 - D. Engine operating parameters, e.g., engine speed, air manifold temperatures, air manifold pressures and ignition timing.
 - iv. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

1.1.8 Monitoring Requirements

None

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for all engines to demonstrate compliance with Condition 1.1.6:

- a. Hours of operation for each engine per year; and

- b. Number of startups and blowdowns totaled per month and per year for each engine.
- c. Inspection, maintenance, and repair logs for each affected engine with dates and nature of activities performed.
- d. Annual aggregate NO_x, CO, VOM and formaldehyde emissions from the engines, based on hours of operation and the applicable emission factors, with supporting calculations;

1.1.10 Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA, of non-compliance with the operating requirements and emissions as follows, the total emissions of NO_x, CO, VOM or formaldehyde from the affected engines in excess of the limits specified in Condition 1.1.6 within 30 days of such an occurrence.
- b. Reporting for Startups of Engines

With the Annual Emission Report required by 35 IAC Part 254 the Permittee shall provide for each engine, the total number of startups.
- c. Submittals and notifications required by this permit shall be made to the following:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

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

Telephone: 217/782-5811 Fax: 217/782-6348

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.1.12 Compliance Procedures

- a. Compliance with Condition 1.1.3(b) is assumed to be achieved by the work-practice inherent in the

operation of natural gas-fired engines, so that no compliance procedures are set in this permit addressing this regulation.

- b. Compliance with the emission limits in Condition 1.1.6 shall be based on the recordkeeping requirements in Condition 1.1.9 and appropriate emission rates. Until emission testing is performed, the following rates shall be used if the engines are operating normally:

<u>Pollutants</u>	<u>Lb/hr</u>
NO _x	6.85
CO	2.45
NMVOM	0.98
Formaldehyde	0.40

This emission rates are based on the manufacture's data.

$$\text{Emissions (lb/Mo)} = \text{Rate} \times \text{Hours/Month}$$

$$\text{Emission of formaldehyde (lb/Mo)} = 0.4 \times \text{Emission of VOM}$$

- c. Blowdown Emissions

Emission of VOM from blowdown of the engine, as performed prior to startup of an engine, shall be based on the following factors unless alternative data is more appropriate:

$$10,000 \text{ scf/blowdown} \times 2.01 \text{ lb VOM/1000 scf gas} = 20.1 \text{ lb VOM/blowdown.}$$

$$\text{VOM emissions (lb/yr)} = 20.1 \text{ lb VOM/blowdown} \times \text{number of blowdowns per year.}$$

- 2.0 The new station is not a modification subject to 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM) because the emissions of VOM from the new station are less than 25 tons per year.
- 3.0 This permit is issued based on the new compressor station not being subject to a case-by-case determination of Maximum Achievable Control Technology (MACT) for hazardous air pollutants, pursuant to Section 112(g) of the Clean Air Act, because the facility is minor for Hazardous Air Pollutants (HAPs).
- 4.0 a. The storage tanks at this station are not subject to the federal New Source Performance Standard (NSPS) for Volatile Organic Liquid Storage Vessels, 40 CFR 60 Subpart Kb, because they have a capacity less than 40 m³ (approx. 10,566 gallons).

- b. This permit is issued based on negligible emission of pollutants from the storage tanks. For this purpose, emissions from the tanks shall not exceed nominal emission rate of 0.44 tons/year.

5.0 This station may be operated for a period of two year under this construction permit.

Please note that permit is issued based on this source becoming a major source for emissions of nitrogen oxides as a result of the construction and operation of the new compressor station. Accordingly, the Permittee must now obtain a CAAPP permit for the operation of this source. In this regard, the Permittee must submit a complete CAAPP application with 12 months after commencing operation of the compressor station, pursuant to Section 39.5(5)(x) of the Act.

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

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:RNG:psj

cc: Region 1