

COMMONWEALTH OF PENNSYLVANIA
 Department of Environmental Protection
 Southwest Regional Office

MEMO

TO: Air Quality Case File OP-03-00076

FROM: Nicholas J. Waryanka, P.E. *NJW*
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THROUGH: Barbara Hatch, P.E. *BHA* Environmental Engineer Manager
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DATE: November 12, 2013

RE: Title V Operating Permit Renewal Application OP-03-00076
 The Peoples Natural Gas Company LLC (Peoples)
 Girty Compressor Station
 South Bend Township, Armstrong County
 APS 616573 AUTH 683073 PF 244378

BACKGROUND

Peoples is a wholly-owned subsidiary of PNG Companies LLC and operates facilities in Pennsylvania for the production, storage, and transmission of natural gas. The Girty Compressor Station (Girty) is a field and relay station that pulls natural gas from local gas fields and boosts pressure to the main supply line. Operation of the equipment at Girty results in the emission of various air contaminants. As a result of the levels of NOx emitted, Girty is a major stationary source as defined in Title I, Part D of the Clean Air Act Amendments. As such, the facility is subject to the Title V permitting requirements adopted at 25 Pa. Code, Chapter 127, Subchapter G.

The main sources of emissions at the facility include two 6-cylinder, 440 bhp, Ingersoll-Rand Model #KVG-6 engines which were installed in 1956, a 4-cylinder Cooper-Bessemer model #GMV4 engine installed in 1954, and a 10-cylinder, 4-cycle, 1,000 bhp Ingersoll-Rand model #KVG-103 engine installed in 1954. These are sources #101 - 104 in the permit. The station also operates a small standby electric generator (Source #109), miscellaneous process equipment (Source #106), and two dehy generator/chillers (Sources #107 and #108). There also have been some small changes and/or additions at the facility which will be covered later in this review memo.

Girty's first renewal Title V permit expired on ^{14 PSW} January 4, 2008. The Department received People's renewal application on June 7, 2007. The application was considered timely pursuant to Section B, Condition #004 of the Title V permit which requires a renewal application be submitted at least six

months prior to permit expiration. Receipt of the renewal application was published in the PA Bulletin on June 23, 2007. The application was deemed administratively complete on June 4, 2008.

REGULATORY ANALYSIS

There are three recently promulgated NESHAP (Part 63) regulations which potentially apply to this facility, including: 1) Subpart HHH, Natural Gas Transmission and Storage Facilities, 2) Subpart HH, Oil & Natural Gas Production Facilities and 3) Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). Girty is not a major source of HAP emissions as defined in part 63 and thus is considered an area source. Subpart HHH only applies to major sources of HAP and therefore is not applicable to this facility. In accordance with 40 CFR 63.1(b)(3), an owner or operator of a stationary source who is in the relevant source category (40 CFR 63 – Subpart HHH) and who determines that the source is not subject to a relevant standard or other requirement established under this part must keep a record as specified in §63.10(b)(3).

Subpart HH does apply to area as well as major sources. The affected source is each triethylene glycol (TEG) dehydration unit. However, 40 CFR 63.764(e)(1)(ii) exempts units from most of the requirements of this subpart if the actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram (approximately 1.0 ton) per year as determined by the procedures specified in 40 CFR 63.772(b)(2). Use of the model GRI-GLYCalc, Version 3.0 or higher, and the procedures associated in the GRI-GLYCalc Technical Reference Manual are an approved method to determine benzene emissions under 63.772(b)(2). Peoples reported only 0.02 tons of benzene emissions in its 2012 emissions inventory which was from the engines. Peoples will be required to maintain appropriate records of any benzene emissions in accordance with 40 CFR 63.774(d)(1). In the 2012 AIMS emissions inventory, total HAP emissions are 2.73 tons per year of which 1.21 tons per year are non 112b HAPs from Source #201, Fugitive Emissions from vents and storage tank losses. Other HAP emissions include small amounts of acetaldehyde, acrolein, formaldehyde, hexane, toluene, and xylenes from the engines.

Also, 40 CFR 63.10(b)(3) states that “if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f), and that stationary source is in the source category regulated by the relevant standard, (40 CFR 63 – Subpart HH) but that source is not subject to the relevant standard (or other requirement established under this part) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first.

Likewise, Subpart ZZZZ applies to both area and major sources. On August 10, 2010 the US EPA revised Subpart ZZZZ to establish requirements for existing stationary RICE. It was amended again on January 30, 2013. The applicable requirements depend on numerous factors including engine type (rich burn or lean burn), stroke (2 or 4), rated horsepower, fuel type, age (new, existing, or

reconstructed), and purpose (emergency or non-emergency). The specific applicable language from Subpart ZZZZ has been incorporated into the operating permit whenever possible. However, in certain instances some sections of Subpart ZZZZ were either included by reference or copied in their entirety.

Standards of Performance (NSPS) for Stationary Spark Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart JJJJ is only applicable to engines installed, modified or reconstructed after June 12, 2006. As a result, the compressor engines at Girty are not subject to Subpart JJJJ. However, Peoples replaced the standby electric generator (formerly source #105) with a new unit which operated for the first time on November 22, 2011. As such, this new standby unit is subject to the applicable requirements of Subpart JJJJ which have been incorporated into the renewal Title V Operating Permit by reference. Notification of Subpart JJJJ applicability was made by Peoples on December 7, 2011 in accordance with 40 CFR 60.4245(c) and 60.7(a)(1).

ORIGINAL PERMIT REVISIONS

There have been several changes at the facility since the expiration of the original Title V Operating Permit in 2003. None of the changes appear to be large issues and in some cases the change actually resulted in a decrease of emissions. Peoples also proposed changes some permit condition language. These changes are presented and discussed below:

- Peoples submitted a minor operating permit modification application to clarify the definition of “volatile organic compounds” (VOCs) as that term is referred to in RACT OP #03-000-076 on July 18, 2008. Specifically, Peoples suggested that a permit condition be added to Section C of the permit to define VOCs as “non-methane, non-ethane hydrocarbons as determined by EPA Method 18/25A (or equivalent), not including formaldehyde.” This change has been made as requested.
- As mentioned above, the original standby electric generator, Source #105, was replaced in accordance with an approved August 2009 Request for Determination with a new 337 BHP Caterpillar G3406 unit, Source #109, equipped with an exhaust catalyst for emissions control. This unit is subject to the New Source Performance Requirements for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ.
- Inclusion of a 55 gallon parts washer, Source #112
- Inclusion of a 2,000 gallon ethylene glycol storage tank (Tank B-1), Source #110
- Clarification of Source #037 to record miscellaneous small heaters
- Addition of Source #111 to record miscellaneous small storage tanks
- Clarification of Source #201 as “Facility Fugitive Emissions”

- On November 18, 2011, the Department received a deactivation plan for Source #107, North Dehydration Generator/Chiller System. The source had last operated on November 24, 2010 because of ongoing reliability issues with the natural gas-fired generator set engine. The notice was received within one year of deactivation in accordance with 25 Pa Code Section 127.11(a) and included both a deactivation/maintenance plan and a reactivation plan. The reactivation plan states that the engine/generator set will be replaced by an updated connection to the Girty Station electrical service provided by West Penn Power (pole power) but to date, no notice of source reactivation has been received by this office to my knowledge.

EMISSION INFORMATION

The compressor engines at Girty operate almost continually other than for maintenance downtime so that actual emissions at the facility approach its potential to emit. There will be thirteen emission sources in the renewal operating permit. In addition to the four compressor engines (Source #101-104), emergency generator engine (Source #109), and two dehydrator engines/chillers (Source #107 & 108) there is an ethylene glycol tank (Source #110), miscellaneous storage tanks (Source #111 which includes a 5,000 gallon new engine oil tank, 1,000 gallon engine oil tank, 5,000 gallon produced fluids tank, 2,000 gallon wastewater tank, and a 1,500 gallon waste oil tank), miscellaneous process equipment (Source #106), a parts washer (Source #112), miscellaneous space and water heaters (Source #037), and facility fugitive emissions (Source #201).

The following tables illustrate Girty Station's actual emissions for the 2012 calendar year as reported by Peoples in their annual emissions inventory.

Table 1 – Girty Station 2012 Actual Emissions, Criteria Pollutants

Criteria Pollutant	Emissions in Tons Per Year
Carbon Monoxide	20.93
Nitrogen Oxides	92.68
Particulate Matter < 10 Microns	1.29
Particulate Matter < 2.5 Microns	0.50
Sulfur Oxides	0.04
Volatile Organic Compounds	21.22

Table 2 – Girty Station 2012 Actual Emissions, Hazardous Air Pollutants (112b HAPs)

Criteria Pollutant	Emissions in Tons Per Year
Acetaldehyde	0.39
Acrolein	0.26
Benzene	0.02
Formaldehyde	0.78
Hexane	0.05
Toluene	0.01
Xylenes (Isomers and Mixture)	0.01
Total 112b HAPs	1.52

There are no additional sources at the site that are considered trivial or insignificant activities that are not included under one of the emission sources in the operating permit.

CONCLUSIONS AND RECOMMENDATIONS

I have completed my review of Peoples’s Title V permit renewal application for their Girty Station. Peoples has met the regulatory requirements associated with this application submittal. The attached draft permit reflects terms and conditions as described in Peoples’s permit application. It is my recommendation to issue a Title V permit for this facility.

