

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N381827480

FACILITY: Great Lakes Gas Transmission Station #13		SRN / ID: N3818
LOCATION: 7500 E Dodge Rd, OTISVILLE		DISTRICT: Lansing
CITY: OTISVILLE		COUNTY: GENESEE
CONTACT: Bruce Bendes , Enviromental Specialist, CS&E		ACTIVITY DATE: 10/03/2014
STAFF: Brian Culham	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: This was an announced Scheduled Inspection. The purpose of this inspection was to enter the source for the first time, determine regulatory compliance, and to meet with TransCanda staff involved with submitting the Renewable Operating Permit (ROP) application. The pre- inspection meeting also served as the ROP pre-application meeting. An ROP application is due on April 15, 2015. An ROP timeline was shared with TransCanda staff, as well as the inspection brochure. An FCE will be complete as a result of this inspection.		
RESOLVED COMPLAINTS:		

Bruce Bendes, Environmental Specialist, TransCanada bruce_bendes@transcanada.com
Tiffany Grady, Air Quality Specialist, TransCanada tiffany_grady@transcanada.com

Great Lakes Gas Transmission Station #13 is located 2 miles southwest of Otisville. The area is predominantly agricultural with scattered residences surrounding the site.

The station does not store natural gas; its purpose is to compress gas to assist in line transmission only.

Station #13 is considered a major source for nitrogen oxides (NOx) and carbon monoxide (CO). The facility has been issued ROP No. MI-ROP-N3818-2010, which expires on October 27, 2015.

Compressor and engine EU-UNIT1303 are subject to the NSPS for Stationary Gas Turbines, 40 CFR Part 60, Subpart GG. The remaining two compressors were installed prior to the subpart and are not subject.

The facility is not subject to 40 CFR Part 60, NSPS Subpart KKKK, Standards of Performance for Stationary Gas Turbines, because the units were installed prior to February 18, 2005 and there have since been no modifications to the units. The facility is also not subject to 40 CFR Part 63, NESHAP subpart HHH Natural Gas Transmission and Storage, because the source is not presently considered a "Major Source" of Hazardous Air Pollutants (HAPs). Recently a "Potential to Emit" demonstration for formaldehyde was submitted indicating that formaldehyde would not exceed 2 tpy. At present the source is considered an "Area Source" of HAP.

This facility is classified as a Category I fee-subject source. MAERs reports are submitted annual.

Emission unit	Emission unit description	ROP and/or PTI exemption	Compliance status
EU-UNIT1301	Rolls Royce Model Avon 76G stationary natural gas-fired turbine used to power a natural gas pipeline compressor. Turbine rated at 16,000 horsepower. Installed possibly December 1970, or possibly as early as late 1960s.	MI-ROP-N3818-2010 Grandfathered from New Source Review.	Compliance/not operating
EU-UNIT1302	Rolls Royce Model Avon 76G stationary natural gas-fired turbine used to power a natural gas pipeline compressor. Turbine rated at 16,000 horsepower. Installed October 1970.	MI-ROP-N3818-2010 Grandfathered from New Source Review.	Compliance/not operating
EU-UNIT1303	GE Model LM1600 stationary natural gas-fired turbine used to power a natural gas pipeline compressor. Turbine is rated at 23,000 horsepower. Installed July 1994.	MI-ROP-N3818-2010 PTI No. 748-92	Compliance/not operating
EU-COLDCLEANER	Parts cleaner which uses a water-based cleaning	Rule 281(e)	Compliance

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	solution.		
EUOVAPU	Caterpillar 7.89 MMBtu/hr, natural gas-fired emergency electrical generator/Auxiliary Power Unit.	Rules 212(4)(d), 285(g)	Compliance
EUOVBOILER	York Shipley boiler, 5.03 MMBtu/hr, natural gas-fired.	Rules 212(4)(b), 282(b)(i)	Compliance/not operating
EUOVSPACEHEATER	N(20) Trane space heaters, 172,000 Btu/hr, natural gas-fired	Rules 212(4)(b) 282(b)(i)	Compliance
EUOVCONDNTANK	10,000 gallon condensate tank	Rules 212(4)(c), 284(e)	Compliance
EUOVDIESELTANK	200 gallon diesel fuel tank	Rules 212(4)(c), 284(i)	Compliance

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No new equipment has been installed at this source since the previous AQD inspection.

AQD has not received a complaint on this facility in over twenty years.

I arrived at the site at 10:30 AM. Dan McGeen was in attendance with me. I could not detect any odors, nor see any visible emissions, from the facility. The weather was cloudy and it rained periodically during the inspection. We met with Bruce Bendes, Environmental Specialist from Troy, Michigan; Melinda Holdsworth, Senior Air Quality Specialist from Houston, Texas; and John Deitering, the local facility Technician.

I learned during the meeting that Tiffany Grady of Houston, Texas will be the person responsible for submitting the ROP application. On October 10, 2014, I was contacted by her on the telephone. I requested, as part of the ROP application, an update for PTE of formaldehyde. The present PTE does not include the Generator-set or the Boiler.

B. Bendes explained to me that Great Lakes Gas and ANR are pipeline systems purchased by TransCanada. TransCanada corporate offices are in Houston, Texas. Currently, natural gas from western Canada is being routed through this pipeline to the eastern coasts of the United States and Canada. All gas coming into the facility is pipeline quality.

Station #13 has three natural gas-fired turbines operating three compressors. Each turbine/compressor unit is housed separately from the others. At the time of the inspection, no turbines were running. The units have not, and are not expected to, run very much this year. Operational records submitted to me indicated that zero operational hours were logged during January and June.

EU-UNIT1301 and EU-UNIT1302 (FG AVONS)

The two Rolls Royce Avon 76G stationary natural gas-fired turbines are similar in their installations. The turbines are each powered by a jet aircraft engine. Each jet engine creates thrust, which drives a turbine fan. The turbine drives a natural gas compressor. Neither unit was operating.

Because of the age of these two units there are very few applicable requirements.

Only pipeline quality natural gas is combusted in the turbines per condition III.1. of the ROP. 40 CFR 72.2 defines "pipeline quality" natural gas. Pipeline natural gas means *a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by a supplier through a pipeline. Pipeline natural gas contains 0.5 grains or less of total sulfur per 100 standard cubic feet. Additionally, pipeline natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot.*

An e-mail from Mr. Bendes to AQD's Michael McClellan, dated 7/27/2011 provides a demonstration of how they comply with the requirement to use only pipeline quality natural gas.

Although not required by the ROP these units are periodically stack tested by TransCanada for CO and NOx.

EU-UNIT1303

The General Electric Model LM 1600 natural gas-fired turbine was not running. It is the northernmost of the turbines onsite.

Only pipeline quality natural gas is combusted in this turbine, per condition III 1. of the ROP. The requirement to burn only "Pipeline Quality" gas is stricter than the 0.8% sulfur in fuel limit per condition III 2. of the ROP.

Once during the ROP renewal cycle, stack testing for NOx and CO is required by the ROP for this EU. The last stack test for EU-UNIT1303 was March 10, 2011. NOx concentration at high load was 117.75 ppm, which is less than the 175.2 ppm in the ROP. At high load, the NOx lbs/hr was 67.23, less than the ROP limit of 89.0 lbs/hr. The CO concentration was 25.40 ppm, which is less than the 31.9 ppm allowed by the ROP. The CO lbs/hr was 8.83, less than the ROP limit of 22.0 lbs/hr. Limits for these pollutants in the ROP are set by PSD, which is stricter than the NSPS Subpart GG.

Monthly records of hours of operation and fuel combustion amounts are being kept.

EU-COLDCLEANER

Because this unit does not use an organic solvent; by definition it is not a cold cleaner. The lid on the unit was down, at the time of the inspection. It is a Safety Kleen managed unit.

EUOVAPU

The generator set was not running. It is used for emergency power. The hour meter indicated 18041 hours. I was told that the hours date back to 1994 when it was originally installed. At one time EUOVAPU was used for auxiliary power and was required to operate at certain times to obtain electrical rate reductions. Most of the metered hours were credited during that two year period.

According to John Deitering, operational records are being maintained as well as maintenance records. He supplied records indicating that during September they reported only 1.5 hours of operation for maintenance tests.

Although not presently included in the ROP, EUOVAPU appears to be subject to 40 CFR 63 subpart ZZZZ. It is my understanding that it is an existing stationary natural gas fired compression ignition RICE that is probably rated at between a 300 to 500 horsepower. The RICE is used to run a generator set for emergency power. I expect that it will also be classified for "Area Source" of HAP. Existing operational and maintenance records should be adequate for compliance.

EUOVBOILER

A York Shipley, 5.0 mmBTU gas boiler was identified. The EU may be subject to 40 CFR 63, subpart JJJJJ, the Area Source Boiler MACT. This EU is not presently included in the ROP.

I did not identify any violations of air quality regulations as a result of the inspection. We left the site at 12:30 PM.

NAME Brian W. [Signature] DATE 10/14/2014 SUPERVISOR [Signature]