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

SCAN

B857343729

FACILITY: Great Lakes Gas Trans Station #11 (TransCanada #11		**SRN / ID:** B8573
LOCATION: 10339 GREAT LAKES RD, BOYNE FALLS		**DISTRICT:** Gaylord
CITY: BOYNE FALLS		**COUNTY:** CHARLEVOIX
CONTACT: Kurt Keller , Operator		**ACTIVITY DATE:** 03/16/2018
STAFF: Bill Rogers	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FCE and records review		
RESOLVED COMPLAINTS:		

On March 16, 2018, I inspected Great Lakes Gas Transmission Compressor Station #11 near Boyne Falls. Operators Kurt Keller and Jim Adair showed me around. Later, Mr. Chris Waltman provided me records required by this facility's permit.

I did not find any violations during my inspection or during review of the records. The facility appears unchanged from previous inspections. The only change from several years ago is that the exhaust stacks on the two Rolls-Royce Avon turbine engines, which power the pipeline compressors, have been replaced. The replacement was a few years ago now and is also noted in previous inspection reports for this facility. It was a like-for-like replacement, performed because the old stacks were badly rusted.

This was an unannounced inspection. The facility was not operating at the time of my inspection. Mr. Keller told me the pipeline was shut down because a section in Minnesota is being replaced at this time.

Permit Conditions

Table EUAPU- Emergency Generator

The emergency generator is in the control building. It is an "emergency use, 408 hp natural gas fired electrical generator, 3.26 MMBtu/hr." The equipment table in the current ROP requires the usual certifications, deviation reports, and compliance with "applicable requirements of 40 CFR, Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Area Sources; Stationary Reciprocating Internal Combustion Engines."

There were no permit conditions for me to check on site for this engine. However, I was curious as to whether it had a nonresettable hour meter, as is commonly required for emergency generators. It does. It is equipped with a Hobbs Hour Meter. The hour meter indicated 1582 hours of total operation.

Mr. Keller told me the company likes to run the generator for an hour a month to make sure it is working properly.

Table EUBOILER - Heat and water heating boiler

This boiler is in the control building. It is a natural gas fired boiler rated at 4.2 MMBtu/hr. The equipment table in the current ROP requires the usual certifications, deviation reports, and compliance with "applicable requirements of 40 CFR, Part 63, Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, Institutional Boilers and Process Heaters."

In the renewal application for MI-ROP-B8573-2013, recently received at our office, the permittee asks us to remove this boiler from the ROP as it is small enough to be exempt from permitting under State rules. However, it is subject to Subpart JJJJJJ, and under Federal regulations must therefore remain in the ROP.

The builder's plate on the boiler states it is 4190 thousand BTU per hour. This is consistent with the 4.2 MMBTU reported by the permittee. The builder's plate also says the boiler can burn 5550 cubic feet (of natural gas, presumably) per hour and gives construction year as 1970.

FGAVONS- Two Rolls-Royce Avon 76G natural gas-fired stationary turbines rated at 16,000 horsepower (158.8 MMBtu/hr) each. Designated as EUUNIT1101 and EUUNIT1102.

The two Rolls-Royce Avon turbines appear unchanged from previous years.

Table FGAVONS, Condition I.1, sets an emission limit of 82 parts per million of nitrogen oxides (NOx) by volume. During the stack test conducted on Wednesday, December 7, 2016, EUUNIT1101 emitted 56.72 PPM and EUUNIT1102 emitted 63.40 PPM of NOx. This complies with the permit condition.

Condition I.2 sets an emission limit of 61.2 pounds NOx per unit per hour. During the stack test EUUNIT1101 emitted 31.31 pounds per hour and EUUNIT1102 emitted 37.75 pounds per hour of NOx. This complies with the permit condition.

Condition I.3 sets an emission limit of 268 tons of NOx per unit per year. Emission data provided by Great Lakes Gas Transmission, attached, shows that in the first two months of 2018 the two units combined emitted 0.9 tons of NOx. If continued at or near this rate for the rest of the year, this will comply with the permit condition.

Condition I.4 sets an emission limit of 200 parts per million of carbon monoxide (CO) by volume. During the stack test, EUUNIT1101 emitted 120.58 parts per million and EUUNIT1102 emitted 147.69 parts per million of CO. This complies with the permit limit.

Condition I.5 sets an emission limit of 140 pounds of CO per unit per hour. During the stack test, EUUNIT1101 emitted 80.24 pounds per hour and EUUNIT1102 emitted 87.86 pounds per hour of CO. This complies with the permit limit.

Conditions V.1 and V.2 require stack testing for NOx and CO, respectively, each 5 years. The most recent series of stack tests were completed Wednesday, December 7, 2017, less than 5 years before this inspection. This complies with the permit condition.

Condition VI.1 requires recording hours of operation, fuel consumption, NOx emissions in tons per month and NOx emissions in tons per year. The attached example records provided by Great Lakes Gas Transmission show all the information required by this permit condition.

Conditions VIII.1 and VIII.2 require stacks with a minimum height above the ground of 45 feet and "maximum exhaust dimensions" of 135.6 inches. The "maximum exhaust dimensions" requirement is confusing as it is was written as the diameter of a circular stack which would have had the same cross sectional area as the rectangular stacks actually installed when the facility was built. In my opinion we should phrase this differently in the permit renewal. In any case, the old stacks complied with these permit conditions and, since the new stacks are the same dimensions as the ones they replaced, they also comply with these permit conditions.

COMMENTS:

Great Lakes Gas Transmission has not changed the facility much over the years. As noted above, the stacks for the Avon turbines were replaced a few years ago. There was once a third, smaller turbine compressor, but it was removed many years ago.

During a prior inspection, plant personnel told me the pipeline routing gas through the facility was reoriented to correct a poor initial design, resulting in the station needing less compressor power to perform its function. This did not change the Avon turbines, but it did mean they require less power than they once did. That may explain why emissions have been well below permit limits in recent years.

In the case of this inspection, though, emissions are low over the past month or two because the pipeline is shut down in order to allow maintenance on a section of it in Minnesota.

Maintenance of the facility appears very good.

NAME William J Rogers L. DATE 3/21/2018 SUPERVISOR