

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N815166227

FACILITY: VECTOR PIPELINE L.P., Athens Compressor Station		SRN / ID: N8151
LOCATION: 4981 2 Mile Rd, ATHENS		DISTRICT: Kalamazoo
CITY: ATHENS		COUNTY: CALHOUN
CONTACT: Michael Betzold , Mechanical Technician		ACTIVITY DATE: 01/24/2023
STAFF: Amanda Cross	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On January 24, 2023 Air Quality Divisions (AQD) Amanda Cross, conducted an unannounced inspection of Vector Pipeline, located at 4981 2 Mile Road, Athens, Calhoun County, Michigan. The facility's source registration number (SRN) is N8151. The purpose of the inspection was to determine compliance with the Federal Clean Air Act, Article II, Part 55, Air Pollution Control Rules, of the Natural Resources and Environmental Protection Act, 1995 PA 451, as amended (Act 451); AQD administrative rules; and Renewable Operating Permit No. MI-ROP-N8151-2021.

I arrived at the facility at 1:35 pm. Onsite during the inspection was Matt DiPaola, Operations Coordinator, Michael Betzold, Mechanical Technician, and Jamie Van Valkenburg, Electrical Technician. We first did a safety briefing on the site, the discussed the facility and records as well as compile a list of more detailed records to be emailed following the inspection. Vector Pipeline is a joint venture between DTE and Enbridge Pipeline. The entire pipeline is approximately 350 miles in length, with five compressor stations, spanning from Illinois to Sarnia, Canada.

The facility collects all raw data each month for the turbine and the supplemental power unit, reviews it for errors, then compiles it into a database. This database can be queried for reports by month that summarize the raw data. While on site, staff identified copies of records that would be emailed following the inspection.

During this time, Vector staff and AQD staff discussed a repair that was made to the turbine. The turbine manufacturer identified a known faulty part in the turbine and recommended replacement of the part before the part failed at the Athens site. The turbine was pulled from site on June 7, 2022 and transported to Texas where the combustor liner was replaced. The turbine was transported back to the facility and replaced July 1, 2022. AQD staff verified that the hours of operation on the turbine before the turbine left the facility and the hours of operation on the turbine when the turbine was replaced at the facility were consistent.

This compressor station only operates as needed, typically during cold weather. Gas enters the pipeline at the Fowlerville compressor station. Most times, the gas is sent east down the pipeline toward the Detroit area. However, during extremely cold weather, the gas is sent toward Chicago. Most recently the turbine ran about 427.13 hours in December and used 48,370.15 thousand cubic feet (MCF) of gas. This was also the most hours run in a month in 2022. There is no gas storage on site.

Staff also discussed the Vector tariff agreement which is available on the Vector Pipeline webpage (<http://www.vector-pipeline.com/Informational-Postings/Tariff/Table-of-Contents.aspx>). The sulfur content limits can be found on original sheet no. 110. The tariff states that the natural gas transported by the pipeline shall contain no more than one-quarter (1/4)

grain of hydrogen sulfide per 100 cubic feet of gas, nor more than 20 grains of total sulfur per 100 cubic feet of gas. This was last updated on 2014 and has not changed since. This shows compliance with condition II.2, VI.2.a, and VI.3 in EUTURBINE1.

Finally, we discussed the stack testing that occurred on June 29, 2021, as required by 40 CFR Part 60 Subpart KKKK, which the turbine is subject to. Results showed 9ppm NOx at 15% O2 (limit 25 ppm). This is 36% of the limit. These results were also fully reviewed by TPU staff, which showed concurrence with the submitted results (SC V.1). According to 40 CFR Part 60 Subpart KKKK, testing needs to be completed within 26 months of the previous test, by August 29, 2023. Testing is currently scheduled for June 27, 2023.

Following our initial records review, we took a walk through of the facility. First, we observed the turbine which is housed in a separate building from the main office. The turbine is a Solar Turbine Incorporated (Solar) Mars 100s natural gas fired turbine with a nominal (ISO) rating at 15,000 hp and a maximum heat input of 120 MMBTU/hr. The turbine is equipped with dry low NOx emission controls (SoLONOx) (SC IV.1). The turbine was not in operation during the inspection. The turbine is capable of only burning natural gas (SC II.1). The turbine is not equipped with a continuous emissions monitoring (CEM) system. These conditions are required as part of 40 CFR Part 60, Subpart KKKK.

Next, we walked across the yard, back to the main building, and observed the supplemental power unit (SPU). The SPU is an emergency generator, used to provide power in the case of power outages. It is a natural gas fired spark ignition internal combustion generator. This is an emergency standby power unit with a 6.0 MMBTU/hr rating. This emission unit is subject to 40 CFR Part 60 Subpart JJJJ for Stationary Spark Ignition Internal Combustion Engines and 40 CFR Part 63 Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines (RICE). It is only capable of burning natural gas (SC III.2). It was not operating at the time of the inspection.

EUSPU is equipped with a non-resettable hours meter, as required by 40 CFR Part 63 Subpart ZZZZ aka the RICE MACT. Vector staff said they were in the process of installing an analogue hours meter to compliment the digital hours meter. The digital hours meter only tracks full hours. The analogue meter has a decimal point to indicate minutes run, which allow for more accurate tracking. The analogue meter was installed but had not been wired for operation yet. The digital hours meter read 700 hours.

Attached to the SPU was a monthly maintenance sheet. Staff check things like the oil, fuel, air filter, voltage, battery, coolant, and oil pressure. The oil filter was last changed on 12-13-18, which was written on the outside of the oil filter. Vector staff stated that the oil is sent out for testing to ensure that it's the same quality as when it was put in the generator. There is also scheduled monthly readiness testing. The facility is tracking hours of operation for maintenance and readiness checks. Either a third party or internal staff complete the required annual maintenance. Things that are checked include the belts, oil filter, and spark plugs. This is normally completed in the fall. A copy of the most recent workorder and maintenance checklist was requested as part of the records.

The facility also has eleven catalytic natural gas-fired heaters in the turbine building, each having a capacity of less than 60,000 Btu/hr. Seven of the heaters are around the inside of the turbine building to maintain a specific ambient temperature for the turbine. The other four are located in

a box for the in-line heater to preheat the gas that is routed to the turbine. These heaters are exempt from air permitting under Rule 282(2)(b)(i). There are no boilers or cold cleaners at the facility.

As requested, the records were emailed on January 26, 2023. Records submitted for review were; turbine hourly emission data for 2021 and 2022, turbine monthly operating hours and fuel consumption for 2021 and 2022, emergency generator monthly and 12-month rolling emission data for 2021 and 2022, emergency generator annual maintenance log, emergency generator august 2022 run log, and the Vector gas tariff.

EUTURBINE1 Records:

Emission limit for the turbine is 25 ppm at 15% oxygen, which is determined by testing and required by 40 CFR Part 60, Subpart KKKK. The facility showed compliance with this limit during the previous testing event.

The SoLoNOx mode is a low emission setting that produces reduced NOx emissions during turbine operation. According to the provided records, the turbines operated in SoLoNOx mode for the entire time that the turbine was operating, including startup and shutdown of the turbine.

The facility is tracking how often the turbine runs, hourly. This includes the natural gas percentage, horsepower, NOx emissions in pounds per hour, and if the SoLoNOx system is running. The turbine ran 409.8 hours in February 2021 using 44,065 MCF of natural gas and 427.13 hours in January 2022 using 48,370.15 MCF of natural gas.

According to the records, the turbine has operated a total of 1,423 hours since installation.

EUSPU Records:

The SPU does not have any emission limits associated with it.

The facility is required to maintain records of the hours of operation for maintenance checks and readiness testing on a 12-month rolling basis. They are also required to monitor and record the usage of natural gas fired in EUSPU during each calendar day that the engine is operated. The engine is limited to operating not more than 100 hours during a 12-month rolling time period for maintenance and readiness testing, as required by 40 CFR Part 60, Subpart JJJJ.

The facility provided 12-month rolling records for 2021 and 2022. In 2021, the engine ran for 11 hours in August and had a total 12-month rolling hours of 65.2 hours, which was the highest 12-month rolling hours for 2021. In 2022, the engine ran for 8.75 hours. The highest 12-month rolling hours was in June with 50.06 hours (SC VI.1). Fuel usage monthly and on a 12-month rolling basis is also being kept on this sheet. Highest monthly fuel usage in 2021 and 2022 was in August. EUSPU used 9.3 MCF natural gas in 2021 and 7.2 MCF natural gas in 2022.

On January 31, 2023, the facility provided an example of the daily run time and fuel used in EUSPU for August 2022. According to the records, the engine ran for 384 minutes on August 5, 2022 and used 0.005418 MCF natural gas. The facility appears to be monitoring and recording

natural gas fired in EUSPU each calendar day of operation (SC VI.2). The records are kept on "gas operation day" which is typically 9 am – 9 am, which is different than a typical 12am-12am day. All gas usage, emissions, and operating hours are collected and accounted for.

Included with the records was the August 2022 generator run log. The run log, kept monthly, includes the date, hours meter reading, if the run was for readiness testing, maintenance, or a power outage. It also documents the emergency and non-emergency run time (SC III.1).

The facility also supplied the Emergency Generator Maintenance Log completed on November 8, 2022 to demonstrate the annual maintenance performed on the engine. The work was performed by a third-party contractor. A copy is included with this inspection report. During the annual maintenance the following is completed; an oil analysis and if necessary, change the oil and oil filter, inspect air cleaner and spark plugs, hoses, belts, and document any maintenance completed according to the manufacturer/owner maintenance plans.

Natural Gas Venting:

Per the requirements of Rule 336.1285(2)(mm), Vector Pipeline is required to notify the AQD of any venting of natural gas that is over 1,000,000 standard cubic feet of gas. Most recently, on September 28, 2021, AQD was notified of a planned mainline blowdown to allow for scheduled work on Athens' pipeline traps. It was estimated that the natural gas to be vented would be approximately 2 MMSCF. On September 29, 2021, AQD was notified that the event resulted in 2.55 MMSCF of natural gas being vented.

Reporting Requirements:

The ROP requires Vector Pipeline to submit semi-annual reports of monitoring and deviations, as well as annual reports certifying compliance. The facility has been submitting all semi-annual and annual reports in a timely manner. The most recent semi-annual and annual reports indicate compliance with all permit conditions.

Conclusion:

Based on the walk through of the facility, review of the required recordkeeping and submitted reports, Vector Pipeline appears to be in operating in compliance with all conditions in MI-ROP-N8151-2021 and all other applicable air quality rules and regulations.

NAME

Annelle Cross

DATE

1/31/23

SUPERVISOR

RAL 2/1/23