

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

N558661101

FACILITY: ANR Pipeline Company Lincoln Compressor Station		SRN / ID: N5586
LOCATION: 3991 S. Hickory, LAKE GEORGE		DISTRICT: Bay City
CITY: LAKE GEORGE		COUNTY: CLARE
CONTACT: Ben Samuelkutty , Field Environmental Analyst		ACTIVITY DATE: 12/01/2021
STAFF: Nathanael Gentle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled On-site Inspection. FY2022		
RESOLVED COMPLAINTS:		

On December 1, 2021, AQD staff conducted a scheduled onsite inspection at ANR Lincoln Compressor Station, SRN N5586. Staff arrived onsite at 10:20 AM and departed at 12:20 PM. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Renewable Operating Permit (ROP), MI-ROP-N5586-2019. EGLE staff were assisted onsite by Mr. Brian A. Day, Area Manager, Mr. Ben Samuelkutty, Field Environmental Analyst, and Mr. Jacob Hutchinson. Records were provided by Mr. Chris McFarlane, Air Specialist. At the time of inspection, the facility was found to be in compliance.

Facility Description and History

The Lincoln Compressor Station is a manned compressor station located at 3991 South Hickory, Lake George, Clare County, Michigan 48633. The facility sits on approximately 13 acres and is surrounded by forested land and gas storage fields. The facility is primarily used to compress natural gas into storage reservoirs during injection, typically during warmer months, and to pull gas out of storage reservoirs during withdrawal, typically during the colder months. It should be noted, the Great Lakes Gas – Farwell Compressor Station 12 (N5581) is located one half mile north of the Lincoln Compressor Station on the opposite side of Hickory Avenue.

The Lincoln Compressor Station is a major source for nitrogen oxides (NO_x), carbon monoxide (CO) and hazardous air pollutants (HAPs) emissions. Located at the facility are three, 2-stroke, lean-burn, natural gas fired reciprocating internal combustion engines and their associated compressors. The units are used to compress and withdraw natural gas from storage reservoirs. A new emergency generator was installed at the facility in 2019, replacing the previous emergency generator located at the facility. In addition, two new boilers were installed at the facility and came online October 28, 2021. Both boilers are CFC-C 5000 boilers with a capacity of 5.0 MMBtu/hr each. The new boilers replaced the previous boiler onsite, EU-LI006, a Kewanee Boiler with a rated capacity of 4.185 MMBtu/hr. Proper notification and documentation was provided by the facility prior to commencing construction and installation of the new boilers. The facility also consists of a regeneration gas heater with a rated capacity of 6.63 MMBtu/hr.

The Lincoln Compressor Station has number of units onsite operating as exempt from needing a Permit to Install (PTI) pursuant to Rule 201, 278, and 278a. Equipment operating as exempt includes:

- Rule 282(2)(b)(i)- 30 heaters rated between 0.004 MMBtu/hr and 0.204 MMBtu/hr.

- Rule 284(2)(e)- A condensate storage tank with a volume of 12,000 gal.
- R 284(2)(i)- 9 storage tanks, all less than 40,000 gallons and contents with a vapor pressure of less than or equal to 1.5 psia.

During the inspection, time was not taken to look at all exempt units onsite. Previous inspection reports described a remediation project onsite which utilized air stripping technology, controlled by a catalytic oxidation system, and used exclusively for cleanup of gasoline, natural gas condensate, and crude oil spills. Previous reports described the project as operating as exempt from permitting based on Rule 285(2)(w). The remediation project appears to no longer be in place onsite. Facility personnel said they would look into when the remediation project was finished.

No recent complaints are on file for the facility. The facility was last inspected on January 21, 2020, in conjunction with observation of emission testing of the then new generator, EU-LI010. At the time of the 2020 inspection, the facility was found to be in compliance. Emission reporting to MAERS by the facility has historically been submitted on time and complete. As a major source with a ROP, the facility is required to submit annual and semi-annual compliance reports. The facility has historically submitted these reports on time and complete to the AQD.

FG-LIREC

The Lincoln Compressor Station is comprised of three reciprocating internal combustion compressor engines, FG-LIREC. Two of the three compressor engines, EU-LI001 and EU-LI002, are Clark TLAD8 2-stroke, lean-burn, natural gas fired engines with a rated capacity of 3200 hp. EU-LI001 and EU-LI002 were both installed on January 1, 1971. EU-LI003 is a Cooper-Bessemer 16W330, 2-stroke, lean-burn natural gas fired engine with a rated capacity of 8000 hp. EU-LI003 was installed on January 1, 1974. The internal combustion engines are used to compress natural gas for injection into or for withdrawal from a natural gas storage field. The facility determines which engines are operated based on the demand and pressure required. Of the three engines, EU-LI001 and EU-LI002 are operated most frequently. EU-LI003 is operated during periods of higher demand and pressure, typically during a heavy withdrawal. At the time of inspection none of the units in FG-LIREC were operating and the facility was in the process of completing a compressor rebuild on EU-LI003.

Natural gas consumption for each emission unit in FG-LIREC is monitored and recorded by the facility, S.C. VI.1. Records of natural gas consumption for the last 12 months for each emission unit in FG-LIREC were requested and reviewed. Records were provided for the period 11/1/2020 to 11/19/2021. Daily records are maintained for each of the three emission units including date, start time, duration and total fuel used in MCF. Records indicate whether a false start or a runtime occurred.

During the 12-month period of records reviewed, EU-LI001 was operated during 6 of the 12 months. These months include November 2020, January 2021, February 2021, March 2021, April 2021, and October 2021. The max duration the engine ran for a single date was 24 hours. There were 18 dates during the 12-month period in which the engine was operated for 24 hours. The maximum amount of fuel used in a 24-hour period during the 12 months reviewed was 569.6 MCF.

During the 12-month period of records reviewed, EU-LI002 was operated during 8 of the 12 months. These months include November 2020, January 2021, February 2021, March 2021, April 2021, August 2021, September 2021, and October 2021. The max duration the engine ran for a single date was 24 hours. There were 28 dates during the 12-month period in which the engine was operated for 24 hours. The maximum amount of fuel used in a 24-hour period during the 12 months reviewed was 510.5 MCF.

EU-LI003 was operated 1 month of the 12-month period reviewed. The unit was operated in February 2021. During February 2021, the max duration the engine ran for single date was 24 hours. This occurred on four different dates in February 2021 including 2/10/2021, 2/11/2021, 2/14/2021 and 2/17/2021. The max amount of fuel used per 24 hours of operation was 1142.0 MCF.

Maintenance is performed on all three units on a regular basis. Depending on the maintenance activity conducted, maintenance activities are conducted based on the hours on the unit or time since the maintenance activity was last completed. The facility has a work management system in place that tracks when maintenance activities are due. When activities are completed, they are captured in a work order.

FG-RICEMACT

FG-RICEMACT consists of a single emission unit, EU-LI010. Installed in 2019, EU-LI010 is a General Electric 500 kw generator driven by a Caterpillar G3412C 4-stroke, lean burn engine rated at 755 hp with a heat input of approximately 5.45 MMBtu/hr. The unit is an emergency generator for the facility, also referred to as an auxiliary power unit (APU).

EU-LI010 is equipped with an hour meter. At the time of inspection, the hour meter read 136.4 hours. Facility personnel report the generator is used only for emergency purposes. The unit is operated once a month for approximately 30 minutes for maintenance and readiness testing. Records of hours and purpose of operation of EU-LI010 were provided and reviewed. Records were provided for each calendar year, beginning when the generator became operational on 10/30/2019 until 11/2/2021.

During the calendar year 2019, the generator operated for a total of 36.8 hours. Of the 36.8 hours, 35.3 hours were for commissioning of the new APU and 1.5 were for M01 test and final load bank test.

During the calendar year 2020, the generator operated for a total of 28.9 hours. Of the 28.9 hours, 21.3 hours were for emergency purposes. 7.6 hours were for M01 tests.

For calendar year 2021 up until 11/2/2021, the generator has been operated for 70.6 hours. Of the 70.6 hours, 66.2 hours were for emergency purposes and 4.4. hours were for M01 testing.

As an emergency stationary RICE, EU-LI010 is limited in the number of hours the unit may be operated outside of emergency operation. To be considered an emergency stationary RICE, EU-LI010 may be operated 100 hours per calendar year for maintenance and testing, and emergency demand response. In addition, the unit may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand

response, 40 CFR 63.6640(f). The facility maintains and provided proper documentation to demonstrate EU-LI010 meets the hourly operating restrictions per calendar year.

Routine maintenance is conducted on the APU. The work management system in place at the facility tracks when routine maintenance is to be conducted on the unit. Examples of maintenance activities include oil changes and spark plug changes. Maintenance activities completed are documented within the facilities system.

FG-NSPS4J

As a new emergency spark ignition engine that commenced construction after June 12, 2006, EU-LI010 is subject to the New Source Performance Standards (40 CFR 60, Subpart JJJJ). There is no time limit on the use of the emergency generator in emergency situations. The unit may be operated up to 100 hours per calendar year for maintenance, testing and emergency demand response. The unit may be operated up to 50 hours per calendar year in non-emergency situations. However, these 50 hours count towards the 100 hours per calendar for maintenance, testing and emergency demand response. Records of hours and purpose of operation for EU-LI010 were provided and reviewed. Details of the records reviewed are discussed above as part of the compliance determination for 40 CFR, Subpart ZZZZ. The records provided appear to demonstrate the facility is in compliance with the operating requirements of 40 CFR 63.6640(f)

Emission limits of 160 ppmvd at 15% O₂ for NO_x, 540 ppmvd at 15% O₂ for CO, and 86 ppmvd at 15% O₂ for VOC are in place for EU-LI010. Compliance with emission limits is demonstrated through performance testing. Owner and operators must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, there after to demonstrate compliance, 40 CFR 60.4243(b)(2)(ii). Initial performance testing was completed on 1/21/2020. Results from the initial performance test show the unit is operating in compliance with the emission limits.

FGBOILERMACTNEW, equal to or less than 5 MMBtu/hr

Two new glycol boilers, EU-LI011 and EU-LI012, were installed at the facility and came online October 28, 2021. Both boilers are CFC-C 5000 boilers with a capacity of 5.0 MMBtu/hr each. The new boilers replaced the previous boiler onsite, EU-LI006, a Kewanee Boiler with a rated capacity of 4.185 MMBtu/hr. Proper notification and documentation was provided by the facility prior to commencing construction and installation of the new boilers. In addition, the facility provided a marked-up copy of the facilities ROP to include the unit changes and applicable regulations. The boilers are subject to 40 CFR Part 63, Subpart DDDDD (Boiler MACT).

A tune-up of each of the boilers is required to be completed every 5 years. The facility reports tune-ups will be completed when required. The facility tracks when the units are due for tune-ups using the facilities work management system. The system provides notifications to facility personnel when tune-ups or maintenance are due for the units. When maintenance activities completed, they are documented within the facilities system.

FGBOILERMACTNEW, 5 to 10 MMBtu/hr

FGBOILERMACTNEW, 5 to 10 MMBtu/hr consists of one emission unit, EU-LI009. EU-LI009 is a regeneration gas heater rated at 6.63 MMBtu/hr. Lincoln Compressor Station is equipped with a dry bed gas dehydration system. The system consists of material that collects water as gas is ran through the system. Once moisture collects, EU-LI009 is used to heat the sorbent material and evaporate moisture off. The moisture is then condensed and collected into tanks onsite where it is later removed and properly disposed of. EU-LI009 is fueled with natural gas, S.C. II. 1.

Tune-ups of EU-LI009 are required to be completed biennially. Records of the most recent tune-up were provided and reviewed. The most recent tune-up of EU-LI009 was completed on 2/18/2020 by an outside contractor. As part of the tune-up, a checklist is utilized to ensure and document the requirements as specified in 63.7540(a)(10)(i) through (vi) are met. Notes from the individual that completes the tune-up are included in the tune up checklist. Routine maintenance is conducted and tracked using the facilities work management system.

Summary

The Lincoln Compressor Station is a manned compressor station located in Lake George, MI. The facility is used to compress natural gas into storage reservoirs during injection, and to pull gas out of storage reservoirs during withdrawal. The facility is a major source for nitrogen oxides (NOx), carbon monoxide (CO) and hazardous air pollutants (HAPs) emissions. Based on the records reviewed and the observed activities onsite, the facility appears to be operating in accordance with the requirements of MI-ROP-N5586-2019. At this time, the facility appears to be in compliance.

Nathanael Dentel

NAME

DATE 12/13/2021

SUPERVISOR Chris Hare