

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

P037571044

FACILITY: LOWELL LIGHT & POWER (LL&P)		SRN / ID: P0375
LOCATION: 625 CHATHAM STREET, LOWELL		DISTRICT: Grand Rapids
CITY: LOWELL		COUNTY: KENT
CONTACT: Casey Mier , Generation Superintendant		ACTIVITY DATE: 01/30/2024
STAFF: Dillon King	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled unannounced inspection		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff Dillon King (DK) and Clayton DeRonne (CD) arrived at the Lowell Light and Power (LLP) facility, SRN: P0375 at 1:20 pm on January 30, 2024 to complete an unannounced, scheduled inspection

Prior to entering the facility visible emission and odor observations were completed. No odor or visible emissions were observed. Weather conditions were light rain, 34° F with a S wind at 6 mph.

Upon entering the facility, DK and CD met with Mr. Casey Mier, Generation Superintendent, and Mr. Doug Barnes, Generation Supervisor who escorted AQD staff through the facility, and provided records and information regarding site operations.

Facility Description

LLP is an electrical peaking station consisting of two natural gas-fired turbines. The turbines are placed into service as -needed based upon electricity demands of the grid. The facility operates under opt-out Permit-to-Install (PTI) No. 112-12A. EUTURBINE1 historically was able to utilize distillate oil and diesel as back up fuels, however this capability has since been removed from the unit. Both turbines are also subject to New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart GG for Stationary Gas Turbines. The turbines were not operating during the time of the inspection.

Compliance Evaluation

PTI No. 112-12A

EUTURBINE1

This emission unit is a Solar Centaur 50 Model 5501 simple cycle natural gas-fired turbine generator installed in 2013. The turbine has a net output rating of 3,766 kilowatts (kW). The turbine has emission limits for oxides of nitrogen (NOx) of 144 parts per million by volume, dry basis (ppmvd) at 15% O2 and 27 pounds per hour (lb/hr) and carbon monoxide (CO) limits of 125 ppmvd at 15% O2 and 14.3 lb/hr. The most recent testing was conducted in 2014 and indicated emissions of 75.9 ppmvd at 15% O2 and 16.7 lb/hr of NOx and 15.8 ppmvd at 15% O2 and 2.2 lb/hr of CO. The facility is also required to track the NOx and CO emissions from the turbine on a 12-month rolling time period. As of January 2024, the 12-month rolling emissions were 133.8 lbs for NOx and 17.8 lbs for CO with EUTURBINE1 operating eight hours and one minute during that time span. Though the stack was not directly measured, it appeared to fit the dimensions in the permit.

PTI No. 112-12A also contains material limits for EUTURBINE1. The facility is limited to burn only pipeline quality natural gas in the turbine and is limited to a fuel usage of 102,674,000 standard cubic feet (scf) per 12-month rolling time period. As of January 2024, the fuel usage was 369,185 scf for the 12-month rolling time period as determined at the end of each calendar month. The facility provided documentation of the sulfur content and natural gas quality from their supplier, Consumers Energy, which demonstrated compliance with the permit requirements.

Conditions in the permit require a malfunction abatement plan (MAP) as well as a plan to minimize emissions during start-up and shut-down in order to operate EUTURBINE1. The MAP and startup/shutdown plan was reviewed onsite.

EUTURBINE2

This emission unit is a Rolls Royce model 501-KB5 simple cycle natural gas-fired turbine generator that was installed in 2013, but not operational until 2017. The turbine has a net output rating of 3,814 kW. The turbine has emission limits for NOx of 158 ppmvd at 15% O2 and 28.7 lb/hr and a CO limit of 5.92 lb/hr. The most recent testing was conducted in 2017 and indicated emissions of 9.1 lb/hr of NOx and 1.2 lb/hr of CO. The facility is also required to track the NOx and CO emissions from the turbine on a 12-month rolling time period. As of January 2024, the 12-month rolling emissions were 75.23 lbs for NOx and 9.92 lbs for CO with EUTURBINE2 operating eight hours and 16 minutes during that time span. Though the stack was not directly measured, it appeared to fit the dimensions in the permit.

PTI No. 112-12A also contains material limits for EUTURBINE2. The facility is limited to burn only pipeline quality natural gas in the turbine and is limited to a fuel usage of 98,640,000 standard cubic feet (scf) per 12-month rolling time period as determined at the end of each calendar month. As of January 2024, the fuel usage was 351,815 scf for the 12-month rolling time period as determined at the end of each calendar month.

Conditions in the permit require a malfunction abatement plan (MAP) as well as a plan to minimize emissions during start-up and shut-down in order to operate EUTURBINE2. The MAP and startup/shutdown plan was reviewed onsite.

LLP is required to report any excess emissions and downtime associated with the EUTURBINE2. LLP submitted the reports on-time and no excess emissions or downtime events were reported in 2023.

Rule 201 Permitting Exemptions

Since the last inspection, the facility has removed the Detroit Diesel Mode 16V92T 750 kW diesel-fired internal combustion emergency engine and installed a Kohler 30CCL 30 kW natural gas-fired emergency engine to supply power to start the turbines in the event of a power outage. The unit is exempt from Rule 201 permitting under Rule 285(2)(g), as the calculated heat input rating is approximately 0.4 MMBTU/hr, which is less than the 10 MMBTU/hr limit in the Rule 201 permitting exemption.

There also is an odor control unit onsite. This equipment was installed when the facility had an anaerobic digester. LLP has since decommissioned the anaerobic digester. DK asked Mr. Mier about if they wished for the permit to be voided. Mr. Meier confirmed that they wish to keep the permit; however, there are no plans to operate it.

Conclusion

Based on the review of the records provided and the observations made at the time of the inspection, LLP appears to be in compliance with PTI No. 112-12A and any other applicable air quality rules and regulations.

NAME Dick A. King

DATE 3/12/24

SUPERVISOR 