

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

P037558212

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 Superintendent		ACTIVITY DATE: 05/12/2021
STAFF: Kaitlyn DeVries	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: The purpose of this inspection was to determine compliance with permit to install (PTI) No. 112-12A, and any other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

On Wednesday May 12, 2021 Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) Staff Kaitlyn DeVries (KD) conducted an announced, scheduled, on-site inspection of Lowell Light and Power (LLP) located at 625 Chatham Street, Lowell, Michigan. The purpose of this inspection was to determine compliance with permit to install (PTI) No. 112-12A, and any other applicable air quality rules and regulations. The inspection was announced in order to ensure that appropriate staff was on-site and proper safety precautions could be taken to prevent the spread of COVID-19. Proper Personal Protective Equipment (PPE), including facial coverings were worn as well as practicing social distancing, where practical.

Prior to arriving on site, KD surveyed the surrounding area for any odors or excess opacity. None were noted. KD arrived on site, shortly after 9:00 am and met with Mr. Casey Mier, Generation Superintendent, filled out the appropriate COVID-19 screening questionnaire, and continued into the facility to discuss the purpose for the inspection. Mr. Mier as accompanied by Mr. Charlie West, General Manager, and Tom Russo, LLP staff.

Facility Description

LLP is an electrical peaking station consisting of two (2) stationary natural gas fired turbines. The turbines are placed into service on an as needed basis based upon the electricity demands of the grid and based upon energy prices. Neither of the turbines were operating at the time of the inspection.

Regulatory Analysis

LLP is a synthetic minor source of Nitrogen Oxides (NOx) and Carbon Monoxide (CO) and is currently operating under Opt-out PTI No. 112-12A. The stationary combustion turbines are also subject to the New Source Performance Standards (NSPS) 40 CFR Part 60 Subpart GG for Stationary Gas Turbines. Many of the requirements for this Federal Regulation have been written into the permit. This will be evaluated in the Compliance Evaluation portion of this report.

Compliance Evaluation

EUTURBINE1

EUTURBINE1 is a natural gas/diesel fuel fired simple cycle turbine generator, installed in 2013. The turbine generator is a Solar Centaur 50 Model 5501 with a net output power rating of 3,766 kilowatts (kW). The unit is permitted for pipeline quality natural gas, which they receive from

Consumers Energy, and distillate oil as a backup fuel. Per Mr. Mier, the capability to burn oil has been removed from this unit, and there is no distillate oil housed on site.

Emissions from the turbine are limited to 144 ppmv on a dry basis at 15% O₂ and 27.0 pounds per hour (pph) for NO_x and 125 ppmv on a dry basis at 15% O₂ and 14.3 pph for CO. Testing was most recently conducted on the EUTURBINE1 on May 30, 2014 at 70% and 100% loads indicating emissions of 2.22 pph for CO and 16.69 pph for NO_x. LLP is also required to track the NO_x and CO emissions from the turbine based on a 12-month rolling time period. As of May 2021, the 12-month rolling NO_x emissions were 19.83 pounds and the 12-month rolling emissions for CO were 149.10 pounds.

As previously mentioned, EUTURBINE1 burns pipeline quality natural gas that has a sulfur content less than less than the permit limit if 20 grains/1000 SCF. LLP obtains the sulfur content from Consumers Energy, who supplies the natural gas. Natural gas usage for EUTURBINE1 is limited to 102,674,000 scf (102,674 MCF) per 12-month rolling time period. As of May 2021, the total gas usage for EUTURBINE1 was 378.6 MCF, and properly tracks the natural gas usage in the turbine and the hours of operation. The turbine most recently ran on May 5, 2021 for a total of 1 hour 26 minutes.

LLP has implemented and maintains a startup, shutdown, and malfunction abatement plan.

While the stack was not directly measured, they appeared to be of correct dimensions.

EUTURBINE2

EUTURBINE2 is a natural gas fired simple cycle turbine generator. The turbine generator is a Siemens (formerly Rolls Royce) Model 501-KB5 with a net output power rating of 3,814 kilowatts (kW). The unit is permitted for pipeline quality natural gas, which they receive from Consumers Energy. This unit utilizes water injection for NO_x control.

Emissions from the turbine are limited to 158 ppmv on a dry basis at 15% O₂ and 28.7 pounds per hour (pph) for NO_x and 5.92 pph for CO. EUTURBINE2 was most recently tested on September 27, 2017 at 70% and 100% loads and indicated results of 1.20 pph for CO and 9.1 pph for NO_x. LLP is also required to track the NO_x and CO emissions from the turbine based on a 12-month rolling time period. As of May 2021, the 12-month rolling NO_x emissions were 0.0745 tons and the 12-month rolling emissions for CO were 0.0099 tons.

As previously mentioned, LLP utilizes pipeline quality natural gas that has a sulfur content less than the permit limit if 20 grains/1000 SCF. Natural gas usage for EUTURBINE1 is limited to 98,640,000 scf (98,640 MCF) per 12-month rolling time period. As of May 2021, the total gas usage for EUTURBINE1 was 611.8 MCF, and properly tracks the natural gas usage in the turbines and the hours of operation. The turbine most recently ran on April 13, 2021 for a total of 1 hour 34 minutes injecting a total of 134.0 gallons of water during the run time.

LLP has implemented and maintains a startup, shutdown, and malfunction abatement plan.

While the stack was not directly measured, they appeared to be of correct dimensions.

Both turbines are subject to the provisions of 40 CFR Part 60 Subpart GG for Stationary Combustion Turbines. For EUTURBINE2, LLP is required to report any excess emissions and downtime associated with the unit. KD spoke to Mr. Mier, as the AQD had not received these for any of 2020. Mr. Mier indicated he was aware of the reports and was able to supply them with the records included as part of the records request for this inspection. No excess emissions or monitor downtime events were reported for the reporting periods.

Exempt Emission Units

Also located on site is a Detroit Diesel Mode 16V92T 750 kW diesel -fired internal combustion emergency engine manufactured in the early 1990's. The engine was installed with the intention to supply emergency electric power to start the turbines in the event of a power outage; Mr. Mier pointed out that the unit was not actually wired to supply power to the turbines and sits unused. This unit is exempt from Rule 201 permitting under Rule 285(2)(g), as the calculated heat input rating is approximately 2.6 MMBTU/hr., which is less than the 10 MMBTU/hr. limit in the Rule 201 permitting exemption. This unit is, however, subject to the National Emissions Standard for Hazardous Air Pollutants (NESHAP) area source standard of 40 CFR Part 63 Subpart ZZZZ for internal combustion engines.

Also located on site is an odor control unit which utilizes carbon filtration to remove hydrogen sulfide and other odorous compounds. This odor control equipment was installed when the had an anaerobic digester. The source no longer has the anaerobic digester, so KD asked Mr. Mier about this equipment as it is permitted under PTI No. 172-16 and if they are still using the odor control equipment or if they wished for the permit to be voided. Mr. Meier confirmed that they wish to keep the permit; the AQD has not received any odor complaints since the decommissioning of the anaerobic digester.

Compliance Determination

Based on the observations made during the on-site inspection and a subsequent review of the records, it appears that Lowell Light and Power is in compliance with PTI No. 112-12A, PTI No. 172-16 and other applicable air quality rules and regulations.

NAME 

DATE 05/26/2021

SUPERVISOR 