

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

P037544608

FACILITY: LOWELL LIGHT & POWER (LL&P)		SRN / ID: P0375
LOCATION: 625 CHATHAM STREET, LOWELL		DISTRICT: Grand Rapids
CITY: LOWELL		COUNTY: KENT
CONTACT: Doug Barnes , Generation Supervisor		ACTIVITY DATE: 06/05/2018
STAFF: David Morgan	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT:		
RESOLVED COMPLAINTS:		

At 1:30 P.M. on June 5, 2018, AQD staff, Dave Morgan, conducted an unannounced scheduled inspection of Lowell Light and Power (LLP) located at 625 Chatham Street in Lowell. The purpose of the inspection was to determine the facility's compliance with state and federal air pollution regulations as well as Permit to Install No. 112-12A. Accompanying AQD staff was Doug Barnes, General Operations Supervisor.

FACILITY DESCRIPTION

LLP consists of two stationary natural-gas fired turbines used to produce peak electricity in the Lowell area. The facility is a synthetic minor source of emissions and is covered under PTI No. 112-12A.

The turbines are subject to 40 CFR Part 60, Subpart GG for Stationary Gas Turbines.

COMPLIANCE EVALUATION

EUTURBINE1 is a natural gas fired Solar Centaru 50 Model 5501 turbine installed in 2013. This unit was originally permitted to burn natural gas for normal operation and distillate oil for emergency operation. According to Mr. Barnes, the capability to burn distillate oil has been removed from the unit. EUTURBINE2 is a natural gas-fired Siemens (formerly Rolls Royce) Model 501-KB5 turbine installed in 2013, but not operational until 2017. Both turbines burn only pipeline quality natural gas supplied by Consumers Energy. According to Mr. Barnes, the turbines are operated based on energy prices.

Monitoring and Recordkeeping:

The company is maintaining all records in accordance with the permit including monthly natural gas usage, monthly and 12-month rolling emissions calculations, turbine operating hours, natural gas sulfur content, and the water to fuel ratio for EUTURBINE2. Below is a summary recordkeeping results and parameters limits in Permit to Install No. 112-12A. The 12-month rolling period is from June 2017 through May 2018.

Parameter	EUTURBINE1	EUTURBINE2
Nameplate capacity	3,766 kiloWatts (3,766 kilowatt permit limit)	3,600 kiloWatts (3,814 kilowatt permit limit)
Hours of Operation (12-month rolling)	12 hours 55 min	49 hrs 19 min
Natural gas (Mcf) used (12-month rolling)	893 Mcf (102,674 Mcf permit limit)	1206.7 Mcf (98,640 Mcf permit limit)
CO emissions (12-month rolling)	44.40 lbs	191.18 lbs
CO emissions (lb/hr)	2.22 lb/hr* (14.3 lb/hr permit limit)	1.20 lb/hr** (5.92 lb/hr permit limit)
NOx emission 12-month rolling	28.93 lbs	36.55 lbs
NOx emissions (lb/hr)	16.69 lb/hr*	9.1 lb/hr **

	(27.0 lb/hr permit limit)	(28.7 lb/hr permit limit)
Sulfur content of gas	50 ppm (limit is 20 grains/100 scf or approximately 314 ppm)	50 ppm (limit is 20 grains/100 scf or approximately 314 ppm)

* Lb/hr emission rates were determined through stack testing of EUTURBINE1 on May 30, 2014 as required by PTI No. 112-12. Testing was conducted at loads of 100% and 75%. Emission rates shown above represent worst case emissions for each pollutant parameter.

** Lb/hr emission rates were determined through stack testing of EUTURBINE2 on September 27, 2017 as required by PTI No. 112-12A. Testing was conducted at loads of 100% and 75%. Emission rates shown above represent worst case emissions for each pollutant parameter. It is noted that AQD approved a test plan for EUTURBINE2 in April 2017 with testing in May 2017. Testing was postponed in order to revise the NOx limits in PTI No. 112-12. After PTI No. 112-12A was issued, the company was required to conduct testing. The AQD was not provided advanced notice of the test nor was a test report submitted within 60 days following the test date. Mr. Barnes gave AQD staff a copy of the test report during the site visit. Test results indicate limits for CO and NOx are within permitted limits, however, the test still needs to be validated by the AQD Technical Programs Unit.

The stacks appeared to meet the minimum stack height of 57 feet above ground level for both turbines and the maximum diameter of 4.5 feet for EUTURBINE1 and 3.3 feet for EUTURBINE2 as required by the permit.

The company has a startup, shutdown, malfunction plan/malfunction abatement plan (SSM/MAP) which is attached. The SSM/MAP appears to satisfy the plan requirements contained in the permit.

EMERGENCY GENERATOR

In 2018, LLP installed a used Detroit Diesel Model 16V92T, 750 kilowatt diesel-fired internal combustion engine, emergency generator manufactured in the early 1990s. The purpose of this unit is to supply emergency electrical power to start the turbines in the event of a power outage. The unit is expected to operate less 50 hours per year. Based on the kilowatt rating, the engine has a calculated heat input rating of approximately 2.6 MMBtu/hour which is below the 10 MMBtu/hour threshold in which a permit to install would be required. Therefore, this unit can be considered exempt under Rule 285(2)(g).

In addition, the emergency generator is subject to 40 CFR Part 63, Subpart ZZZZ for internal combustion engines at area sources of hazardous air pollutants (HAPs). The AQD does not have delegated authority to implement this rule.

SUMMARY

LLP is in noncompliance for not submitting the stack test results within permitted timelines, however, according to AQD procedure, a Violation Notice will not be sent at this time. Monitoring records and other supporting documentation are attached to this report.

NAME  DATE 6/14/18 SUPERVISOR 