

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

P066840885

FACILITY: Marquette Board of Light and Power		SRN / ID: P0668
LOCATION: 2200 Wright Street, MARQUETTE		DISTRICT: Upper Peninsula
CITY: MARQUETTE		COUNTY: MARQUETTE
CONTACT: Tom Carpenter , Director		ACTIVITY DATE: 07/31/2017
STAFF: Sydney Bruestle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Onsite Inspection to verify compliance with PTI 204-15 and all other applicable state and federal air quality regulations.		
RESOLVED COMPLAINTS:		

On July 31, 2017 I (Sydney Bruestle) performed an onsite inspection of Marquette Board of Light and Power located at 2200 Wright Street, Marquette MI. While onsite I met with Mr. Thomas Skewis (Environmental Technician), Mr. John Schultz (Manager of Mechanical Engineering Services), and Mr. Joshua Hendrickson. They gave me a tour of the facility and provided me records required by PTI 204-15.

Marquette Board of Light and Power recently (Spring 2017) completed the installation of 3 dual fired (natural gas and fuel oil) Wartsila 18V50DF, 4 stroke, lean burn, nominal 17 MW Reciprocating Internal Combustion Engines used for electricity generation. The heat input rating of each engine is 173 MMBTU/hr when primarily using natural gas and 154 MMBTU/hr when using emergency backup fuel oil.

In November 2016 the facility installed a new 400 KW diesel fired emergency generator. The engine is used to supply power to the Wartsila engine auxiliary equipment during an interruption of the electrical power supply. Permit to Install 204-15 covers all of the equipment described above.

PTI 204-15:EU-EDG

Description: 400 KW emergency diesel-fired generator

Make: Caterpillar

Model: SB25-175Serial: 31056-01116

Material Limits: The permittee shall only burn ultra-low diesel fuel in EU-EDG with a maximum sulfur content of 15 ppm (0.0015 percent) by weight and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume:

- The facility is burning only ultra low diesel fuel with a sulfur content around 0.002 ppm
- The facility has only operated the emergency generator for testing purposes. The engine has only operated 15.1 hours from the first start up March 2017.

Process/Operational Restrictions: The permittee shall not operate EU-EDG for more than 500 hours per year on a 12 month rolling time period basis as determined at the end of each calendar month:

- The facility has operated EU-EDG 15.1 hours since the initial start up.
- EU-EDG operates less than 100 hours per calendar year and.
- EU-EDG is currently in compliance with all requirements to operate as an emergency generator.

Design/Equipment Parameters:

The permittee shall equip and maintain EU-EDG with a non-resettable hours meter to track the operating hours:

- A non-resettable hour meter is installed on EU-EDG

Monitoring/Record Keeping:

The permittee shall keep fuel supplier certification records or fuel sample test data for each delivery of diesel fuel oil used in EU-EDG, demonstrating that the fuel sulfur content meets the requirement of 40 CFR 80.510(b). The certification or test data shall include the name of the oil supplier or laboratory, and the sulfur content of the fuel oil: The permittee shall monitor and record the total hours of operation and the hours of operation during non-emergencies for EU-EDG, on a monthly and 12 month rolling time period basis.

- There are two separate fuel oil tanks onsite, a large tank for the Wartsila Engines and a smaller tank (containing a different fuel oil) for the emergency generator. The facility was unable to provide an oil analysis certification form specific to the fuel oil used for the emergency generator. On Tuesday August 8, 2017 I requested John Schultz to submit samples of the fuel oil for analysis of sulfur content and cetane value.

Reporting: Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit to install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity.

- Reporting was completed.

FG-NORMALOP

Description: This flexible group consists of the Wartsila 18V50DF Engines while firing natural gas as primary fuel.

Emission units: EU-ENGINE01, EU-ENGINE02, EUENGINE03

The facility has not had success operating engines 1-3 on natural gas. They are working of resolving the problems and anticipate a test date of August 16, 2017. This will still be within 180 days of trial operation.

FG-EMERGENOP

Description: This flexible group consists of the Wartsila 18V50DF Engines while firing emergency back up fuel oil.

Emission units: EU-ENGINE01, EU-ENGINE02, EUENGINE03

Emission testing on fuel oil was completed the July 26-July 30th, 2017. AQD has not yet received the test report.

Fuel oil certification forms are attached to the hard file of this inspection report. Sulfur content is reported to be 0.002 % by weight. This is well below the permit limit of 0.05 % by weight.

The table below shows operating hours and the amount of fuel oil/natural gas used in each engine since initial start up:

Engine #	LFO (kg)	GAS (kg)	LFO (lbs)	GAS (lbs)	Running hours GAS	Running hours LFO
#1	129597,6	159453,3	285713,8	351534,4	64	67
#2	104888,5	148672,1	231239,6	327765,9	57	52
#3	135822,8	114252,5	299438,0	251883,6	51	65

The engines are meeting the operating hour limit of 4,000 hours each calendar year on fuel oil.

At the time of my inspection it appeared Marquette Board of Light and Power was in compliance with PTI 204-15 and all other applicable state and federal air quality regulations. Once I receive an oil analysis for the emergency generator fuel oil, it will be added to the hard file with this report.

NAME Sydney B... DATE 8/14/17 SUPERVISOR Ed J...