

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

P000851936

FACILITY: Newberry Water & Light Board		SRN / ID: P0008
LOCATION: 307 E. McMillan Avenue, NEWBERRY		DISTRICT: Upper Peninsula
CITY: NEWBERRY		COUNTY: LUCE
CONTACT: Ken Uhlbeck , Generator Operator/Mechanic		ACTIVITY DATE: 12/23/2019
STAFF: Michael Conklin	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Targeted Inspection for FY 20.		
RESOLVED COMPLAINTS:		

Facility: Newberry Water & Light (SRN: P0008)
Location: 307 E. McMillan Avenue, Newberry, MI
Contact: Dan Kucinkas, Acting Supervisor, 906-291-0608
Kenny Uhlbeck, Operator, 906-291-0136

Regulatory Authority

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

Facility Description

The Village of Newberry owns and operates a “peaking” station, which is used during a high demand for electricity and power outages. Diesel generators are commonly used as peak shaving units due to their ability to come online quickly, respond to fluctuations in load, and provide long durability. The facility is located on the northeast corner of Parmalee Street and East Mcmillan Avenue in Newberry.

The generating station operates three diesel generators. Each of these units are fuel oil-fired, compression ignited (CI) reciprocating internal combustion engines (RICE) that are shaft coupled to electric generators. Unit #1 is a Fairbanks-Morse model 38TD81/8 engine with a rated power output of 4,364 HP and provides up to 3,000 KWe of electrical output, Unit #3 is a Worthington engine with a rated power output of 1,030 HP and provides up to 720 KWe of electrical output, and Unit #4 is a Worthington engine with a rated power output of 3,182 HP and provides up to 2,140 KWe of electrical output. Units #3 and #4 are housed inside the main building with exhaust emissions routed outside through separate stacks off the roof. Unit #1 is housed in an adjacent building with its own vertical stack.

Emissions

Pollutants emitted from the combustion process of fuel oil-fired RICE units include nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOCs), and particulate matter (PM). Sulfur oxides emissions are directly related to the sulfur content of the fuel. The formation of nitrogen oxides is related to the combustion temperature in the engine cylinder, and CO and VOC emissions are primarily a result of incomplete combustion. PM emissions can include trace amounts of metals and condensable, semi-volatile organics which result from incomplete combustion, volatilized lubricating oil, and engine wear. PM in the form of blue smoke is caused by lubricating oil that leaks into the combustion chamber past worn piston rings and is partially burned. Black smoke is a result of carbon particles combining to form soot. Liquid particles that form during an engine cold start, or low operation, appear as white smoke. Emissions vary according to the air-to-fuel ratio, ignition timing, torque, speed, ambient temperature, humidity, and other factors.

Emissions Reporting

Newberry Water & Light is considered a synthetic minor source and has obtained an Opt-Out Permit to Install (PTI) for NOx and CO. This facility is required to report its annual emissions to Michigan Air Emissions Reporting System (MAERS). For 2018, the facility reported burning 4,291 gallons of fuel oil in EU#1. EU#3 and EU#4 were reported as not operating. The table below shows the facility’s 2018 MAERS submittal.

Pollutant	Pounds per year (PPY)
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Unit #4 is a 1950 era 12-cylinder Worthington with a rated power output of 3,182 HP. The exact year and model number of the engine is unknown. The manufacturer of this engine is no longer in business and obtaining parts has been difficult, according to the facility. Unit #4 was also included in the April 2013 letter from the EPA regarding the compliance deadline for meeting emission limitations established in the RICE NESHAP. The engine was to have installed a catalytic oxidizer and be tested. However, the initial performance testing for compliance with 40 CFR Part 63, Subpart ZZZZ has not occurred. In a follow-up email requesting the operation status for Unit #4, Mr. Uhlbeck stated that the engine is capable of running and is for emergency use only. For compliance purposes with the RICE NESHAP, it should be noted that emergency use does not cover back-up use for a peak shaving unit.

Unit #4 was previously the back-up generator for Unit #1 but is now designated for emergency use only. This engine only runs upon loss of power on the grid. In a follow-up email on clarification for the operations on the unit, Mr. Uhlbeck stated Unit #4 last peak shaved on April 3, 2014 when it lost oil pressure. The engine was out-of-commission for a couple of years and then reinstated as an emergency unit in 2016. According to MAERS, the unit was reported not operating from 2016 through 2018. Mr. Kucinkas stated that the engine does operate periodically for readiness testing though. Mr. Uhlbeck stated that the engine has burned approximately 661 gallons of fuel oil since 2016. For an emergency engine with a municipal utility, the EPA has stated that "financial arrangements limited solely to the provision of emergency power from one entity to other entities does not exclude engines from being emergency engines". If the engine operates only for emergency use and for testing and maintenance as allowed, then the engine can be classified as an emergency engine and not subject to requirements that apply to non-emergency engines in the RICE NESHAP.

Unit #3 is a 1946, 5-cylinder Worthington engine with rated power output of 1,030 HP. In a follow up email from Mr. Keates, the engine is stated to be no longer in operation but remains at the facility. During the inspection, Mr. Kucinkas confirmed this and mentioned he has never seen it operate. Since this engine is not capable of operation, it is not subject to the RICE NESHAP.

The facility also contains six natural gas-fired space heaters. These emission units are considered exempt per Rule 336.1282(2)(b)(i).

Compliance

Based on this inspection, it appears that Newberry Water & Light is in compliance with PTI No. 272-09.



Image 1(Unit #1) : Fairbanks-Morse 12-cylinder opposing piston diesel engine.

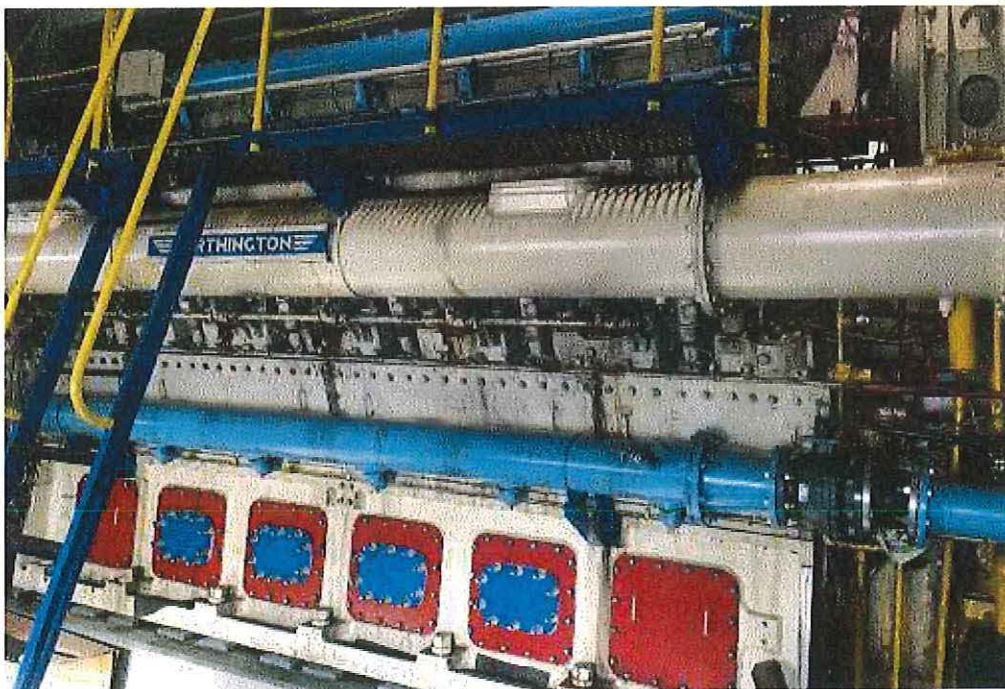


Image 2(Unit #4) : 12-cylinder Worthington engine



Image 3(Units #3 and #4) : Worthington generators

NAME Michael Martin

DATE 1/13/2020

SUPERVISOR ELH