

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

P000864165

FACILITY: Newberry Water & Light Board	SRN / ID: P0008
LOCATION: 307 E. McMillan Avenue, NEWBERRY	DISTRICT: Marquette
CITY: NEWBERRY	COUNTY: LUCE
CONTACT: Ken Uhlbeck , Generator Operator/Mechanic	ACTIVITY DATE: 08/18/2022
STAFF: Lauren Luce	COMPLIANCE STATUS: Compliance
SUBJECT: Targeted Inspection FY22	SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:	

Facility: Newberry Water & Light (SRN: P0008)

Location: 307 E. McMillan Avenue, Newberry, MI

Contact: Alison Watkins, Village Manager

Kenny Uhlbeck, Operator

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 a generating station, which was 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 consists of 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 (NO_x), 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). However, the engines have not run since 2020 so no emissions were reported for 2021.

Compliance History

The facility has not received any violation notices in the past five years. The facility was last inspected in December 2019 and was found to be in compliance with all applicable air quality rules and regulations at that time.

Regulatory Analysis

Newberry Water & Light is currently subject to General PTI No. 272-09 for three RICE generator units. Each engine at the facility is also subject to the National Emissions Standards for Reciprocating Internal Combustion Engines (RICE NESHAP) at 40 CFR Part 63, Subpart ZZZZ. The RICE units are not subject to the federal New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60 Subpart IIII, because the engines were manufactured prior to 2006.

In July 2010, the AQD issued a briefing paper stating that the General Permit to Install for Diesel Fuel-Fired Engine Generators should be withdrawn, or at least suspended from use, until the applicability criteria and special conditions can be revised to ensure compliance with the new 1-hour nitrogen dioxide (NO₂) standard.

Inspection

On August 18, 2022, AQD Staff (Lauren Luce) conducted a targeted inspection on the Newberry Water & Light plant. I arrived at the Village Office and met with Alison Watkins, Village Manager. It was explained that the purpose of the inspection was to ensure compliance with General PTI No. 272-09 and all other applicable air pollution control rules and federal regulations. Alison Watkins provided additional records that were requested in a follow-up email.

The inspection began by discussing the current state of the equipment and future plans with Alison Watkins and Kenny Uhlbeck, Operator. Unit #1 is a 1974 Fairbanks-Morse 12 cylinder, 2-stroke, opposing piston diesel engine, with a maximum rated power output of 4,364 HP. This

engine last operated for one day in July 2020 but had a major mechanical failure and has not operated since. The unit is dismantled and not operational. Unit #3 is a 1946, 5-cylinder Worthington engine with rated power output of 1,030 HP. The engine hasn't been operated in at least 10 years. Unit #4 is a 1950 era 12-cylinder Worthington with a rated power output of 3,182 HP. Unit #4 is designated as emergency use only. This engine is capable of running but hasn't been operated since 2019. The Village is in the process of finding a company to dismantle all three of the engines. Two small standby emergency generators have been purchased by the Village to ensure water service is not disrupted. It is expected to be a few months before they are delivered and installed. Both generators are less than 150kW and exempt per Rule 336.1285(2)(g). A tour of the facility was provided to confirm the state of the equipment

The Village is currently in discussion with a utility provider to install two new larger generators on Village property. The discussion are still preliminary. Permit requirements were discussed and Alison Watkins stated she is aware that a PTI would be required prior to installation.

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. and all other applicable air pollution control rules and federal regulations. It was conveyed to the facility that no violations were noted during the inspection.



Image 1: Unit # 1 with parts removed

NAME *Sam Sam*

DATE 08-24-2022

SUPERVISOR *Michael Kaplan*