

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

B610667262

<b>FACILITY:</b> CLOVERLAND ELECTRIC COOPERATIVE - DETOUR		<b>SRN / ID:</b> B6106
<b>LOCATION:</b> 836 HIGHWAY M-134, DETOUR		<b>DISTRICT:</b> Marquette
<b>CITY:</b> DETOUR		<b>COUNTY:</b> CHIPPEWA
<b>CONTACT:</b> ROGER LINE , DIRECTOR OF GENERATION		<b>ACTIVITY DATE:</b> 05/23/2023
<b>STAFF:</b> Lauren Luce	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> Targeted Inspection FY23		
<b>RESOLVED COMPLAINTS:</b>		

**Facility:** Cloverland Electric Cooperative – DeTour (SRN: B6106)

**Location:** 836 M-134, Detour, Chippewa County, MI

**Contacts:** Roger Line, Director of Generation

Cory Wilson, Regulatory Affairs and Compliance Specialist

### Regulatory Authority

*Under the Authority of Section 5526 of Part 55 of NREPA, The Department of Environment, Great Lakes, and Energy (EGLE) 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

Cloverland Electric Cooperative (CEC) is a utility company that serves five counties in the eastern Upper Peninsula (Chippewa, Mackinac, Schoolcraft, Delta and Luce). The DeTour generating facility is considered a “peaking” station, meaning the station 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 fluctuation in loads, and provide long durability.

The DeTour station is located in a rural area about a half mile south of DeTour Village. This facility was constructed in 1975 and operates two Fairbanks Morse 38TD8-1/8, compression ignited (CI) reciprocating internal combustion engines (RICE) that are shaft coupled to electric generators. Each genset unit is a 12 liter, 2-stroke, opposing piston engine, with a maximum rated power output of 4,364 HP and fires fuel oil no. 2. The generator has a nominal power output of 3,000 KWe. Each engine is housed inside a warehouse building with exhaust emissions routed outside through two vertical stacks (one for each engine). The engines are equipped with oxidation catalysts to control CO and VOC emissions.

### Emissions

Pollutants emitted from the combustion process of fuel oil-fired RICE units include nitrogen oxides (NO<sub>x</sub>), 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

The table below shows the facility's Michigan Air Emissions Reporting System (MAERS) 2022 submittal.

Pollutant	Pounds per Year (PPY)	Tons per Year (TPY)
CO	1240	<1
NOx	17872.72	8.94
PM10	320.32	<1
PM2.5	308.08	<1
SO2	8.45	<1
VOC	127.71	<1

### Regulatory Analysis

CEC – DeTour is currently subject to PTI No. 193-09 for two 3,000 KWe RICE generator units. Each engine is also subject to the federal NESHAP 40 CFR Part 63, Subpart ZZZZ. The RICE units are not subject to the federal NSPS for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII) because the engines were manufactured prior to 2006. The 30,000 gallon fuel oil storage tank is considered exempt per Rule 336.1284(d).

### Compliance History

The facility received a violation notice in March 2019 for failing to comply with testing and reporting as required by 40 CFR Part 63, Subpart ZZZZ. The violation was resolved in 2019. The facility was last inspected in October 2019 and was found to be in compliance with all applicable air quality rules and regulations at that time.

### Inspection

On May 23, 2023, AQD Staff (Lauren Luce) conducted a targeted inspection at Cloverland Electric Cooperative in DeTour MI. AQD Staff arrived at the facility and met with Kent Nicholls, Operator and James Stolt, Operator. It was explained that the purpose of the inspection was to ensure compliance with the PTI No. 193-09 and all other applicable air pollution control rules and federal regulations. The inspection began by discussing permitted equipment, the facility, and records. A tour of the facility was then provided.

#### ***FGENGINES***

This flexible group consists of two Fairbanks Morse diesel-fired CI RICE engines. Each genset unit is a 12 liter, 2-stroke, opposing piston engine, with a maximum rated power output of 4,364 HP and fires fuel oil no. 2. The generator has a nominal power output of 3,000 KWe. Both engines were installed in 1975.

Fuel oil invoices provided stated that the product was Dyed Ultra Low Sulfur #2 Diesel. This fuel is certified to contain 0-15 ppm of sulfur. This shows compliance with SC II.1 that states the sulfur content of the diesel fuel shall not be greater than 0.005%.

Records were provided on total kW hours of electricity per 12 month rolling time period for January 2021-March 2023 (SC VI.4). In March 2023, total 12-month rolling total was 892,905. There were no exceedances of the 5,080,000 kW-hours hours per year based on a 12-month rolling time period as specified in SC III.1.

#### ***FGFACILITY***

Records were provided on NOx emission for FGFACILITY from January 2021-March 2023 (SC VI.2). 12-month rolling NOx emission in March 2023 were 2.4 tons per year. There were no exceedances of the 90 ton per year limit specified in SC I.1. NOx emissions are calculated using an AP-42 emissions factor with 70% control applied as required by MACTZZZZ.

#### **Compliance**

Based on this inspection and records reviewed, Cloverland Electric Cooperative - Detour appears to be in compliance with PTI No. 193-09 and all other applicable air pollution control rules and federal regulations.



*Image 1: Engine 7*



**Image 2: Engine 6 Stack**

NAME *Sam Sam*

DATE 6-12-23

SUPERVISOR *Michael Kaplan*