

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

B280870954

FACILITY: DTE Electric Company - Northeast Peaking Facility		SRN / ID: B2808
LOCATION: 6401 EAST EIGHT MILE ROAD, WARREN		DISTRICT: Warren
CITY: WARREN		COUNTY: MACOMB
CONTACT: Zachary Josefiak , Environmental Engineer		ACTIVITY DATE: 02/23/2024
STAFF: Marie Reid	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY24 Inspection		
RESOLVED COMPLAINTS:		

On February 23rd, 2024, I (Marie Reid), Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division (EGLE-AQD), conducted an on-site inspection of DTE Electric Company – Northeast Peaking Facility (Northeast Peakers) (SRN: B2808) located at 6401 East Eight Mile Road, Warren, Michigan. I was joined by Owen Pierce (EGLE-AQD). The purpose of the inspection was to determine the company’s compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and the conditions of Renewable Operating Permit (ROP) No. MI-ROP-B2808-2023.

Safety Equipment

Flame resistant clothing, hard hat, safety glasses, hearing protection, and steel toed boots.

Facility Description

Northeast Peakers is located in an area zoned industrial. The nearest commercial building is approximately 1,500 feet away, and the nearest residential building is approximately 2,000 feet away. Northeast Peakers is an unmanned site and is maintained by the Peakers Group within DTE. Northeast Peakers is designed to provide electrical power during peak periods of consumer demand occurring mainly in the summer months.

The facility is composed of three (3) natural gas-fired combustion turbine generators (CTGs) (EUCTG11-2, EUCTG11-3, & EUCTG11-4), one (1) No.2 oil or natural gas-fired CTG (EUCTG12-1), two (2) No. 2 oil fired jet turbine generators (EUCTG13-1 & EUCTG13-2), and a black start diesel engine (EUBSE CTG12-1). One natural gas fired turbine; EUCTG11-1 was retired as of June 1, 2023, and is not included in this ROP.

A 100,000-gallon above-ground tank is used for diesel fuel storage. DTE staff explained that the tank’s secondary containment has the capacity to hold 110% of the contents in the oil tank. This tank is exempt from permitting per Rule 284(2)(d) and is not required to be in the ROP.

Regulatory Analysis

Northeast Peakers is located in Macomb County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/maintenance for all criteria pollutants. This facility is a major source for nitrogen oxides (NOx) and carbon monoxide (CO) and a minor source for hazardous air pollutants (HAPs).

All of the emission units at Northeast Peakers are considered “grandfathered” and are not subject to New Source Review (NSR) permitting requirements.

EUBSE CTG12-1 is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR Part 63, Subparts A and ZZZZ. EUBSE CTG12-1 is an existing black start RICE located at an area source of HAPs.

Michigan Air Emissions Reporting System (MAERS)

The following table lists Northeast Peakers emission information as reported to MAERS for the year 2022.

Pollutant Name	Total Emissions (tons)
CO	5.00
NOx	26.01
Particulate Matter 10 (PM)	0.49
Particulate Matter 2.5 (PM)	0.48
Sulfur Dioxide (SO2)	0.03
Volatile Organic Compounds (VOC)	0.13

Inspection and Compliance Evaluation

All requested records were provided from January 2022 – January 2024 in a timely manner.

Owen and I arrived at the front gate of the facility at 10:00 AM. A DTE Combustion Turbine Specialist, opened the gate and led us to the front office. Here we met with Zack Josefiak, Environmental Engineer, Felix Fesili, Substation Operator, and Nicholas Germany, Substation Operator. We entered the building, signed in, introduced ourselves, showed ID, and explained the purpose of the inspection. DTE staff gave a pre-job safety brief, I asked questions about the facility, and DTE staff escorted us on a tour of the facility. At the time of the inspection, the turbines were not operating.

During a previous inspection in 2022, CTG13-2 was out of service because of generator damage. DTE staff informed me that the generator has since been repaired and is now in service. They also informed me that CTG12-1 is currently out of service and black start is not available because the starting engine needs repairs.

DTE staff informed me that CTG12-1, CTG13-1, and CTG13-2 are all capable of black start and can be remotely started while CTG11-2, CTG11-3, and CTG11-4 are not capable of black start and must be started by an operator on site.

I visually inspected the control panels for each turbine. I noted the following readings from each turbine's control panel:

Emission Unit	Run Hours as of 2/23/2024
CTG 11-2	21,643
CTG 11-3	20,459
CTG 11-4	21,452
CTG 12-1	15,023
CTG 13-1	403.2
CTG 13-2	437.7

I was shown on-site records that indicate CTG 11-1 was retired at 20,602 run hours. This reading was taken in October 2023.

DTE staff informed me that BSE CTG12-1's run hours are recorded monthly and cannot be viewed on CTG12-1's control panel. I was provided these records and noted that this emission unit ran for a total of 5.60 hours in 2022, 1.46 hours in 2023, and 0.0 hours in January 2024.

I visually observed the 100,000-gallon above ground fuel tank. A control panel shows the amount of oil in the tank. I noted there was 95,350 gallons of oil in the tank during the inspection. I observed some rainwater in the secondary containment.

Malfunction Abatement Plan (MAP)

Northeast Peakers is required to implement and maintain a MAP. This facility's MAP specifies a complete preventative maintenance program fulfilling the requirements listed in R 336.1911.

According to DTE staff, Northeast Peakers has not had a malfunction since the implementation of this MAP. I reviewed the MAP with DTE staff, and the procedures taken if a malfunction were to occur. They explained that there is an emergency stop button in every unit that immediately closes the valves and stops natural gas or diesel fuel oil (depending on which unit is operating) from entering the unit.

Per item 3.2 in the MAP, operations personnel conduct annual preventative maintenance inspections on all the emission units. The facility provided these records which indicate the annual preventative maintenance inspections were completed in September 2022 and April 2023.

EUCTG12-1

This emission unit is a No. 2 or natural gas fired CTG with a 24 MW capacity at a temperature of 20°F.

This emission unit is subject to a No.2 Fuel Oil material limit of 1.0% sulfur by weight with a heat value of 18,000 BTU/lb. Per SC VI.1, DTE provided their Fuel Oil Supply Agreement with Marathon Petroleum Company in effect from January 1, 2024, through December 31, 2026. The agreement includes providing No. 2 fuel oil that has a maximum sulfur content of 15 ppm. This fuel agreement demonstrates that the fuel meets the requirement of SC II.1.

The facility provided monthly fuel usage records from January 2022 through January 2024 as required by SC VI.2. According to the records, EUCTG12-1 only burned natural gas. EUCTG12-1 consumed 57,647 MCF of natural gas in 2022 and 7,881 MCF of natural gas in 2023. The monthly natural gas usage was highest in January 2024, consuming 19,538 MCF of natural gas.

The facility provided maintenance records from January 2022 through January 2024, as required by SC VI.3. Maintenance was conducted during the turbine's annual inspection in 2022 and 2023.

FGBSE CTG12-1

This flexible group consists of an existing 300-horsepower black start diesel engine, located at an area source of HAP emissions, used to black start EUCTG12-1.

The facility provided maintenance records from January 2022 through January 2024, as required by SC VI.1. Per SC III.1 the facility changed the oil and filter, inspected air cleaners, and all hoses and belts on 10/21/2022 and 10/17/2023.

The facility provided an operation and preventative maintenance manual called "Detroit Diesel Operators Manual". Based on my review of this plan, maintenance records, and the on-site inspection, the facility operates this engine in a manner consistent with good air pollution control practices for minimizing emissions, as required by SC III.2 & SC III.4.

Per SC III.5, the permittee shall minimize the engine's time spend at idle during startup, not to exceed 30 minutes. DTE staff informed me that the engine takes 5-10 minutes to startup, if the unit has not started after 10 minutes, it automatically shuts down.

According to the facility, Northeast Peakers did not utilize an oil analysis program and has opted to change the oil on an annual basis, therefore SC III.3 and SC V.1 are not applicable.

Based on my inspection, EUBSE CTG12-1 complies with all applicable provisions of the NESHAP, as specified in 40 CFR Part 63, Subparts A and ZZZZ for RICE. (SC IX.1).

FGNATGASPKRS

This flexible group contains three natural gas-fired CTGs, each with a 20MW capacity at a temperature of 20°F (EUCTG11-2, EUCTG11-3, & EUCTG11-4).

The facility provided monthly fuel usage records from January 2022 through January 2024, as required by SC VI.1. These turbines consumed 61,301 MCF of natural gas in 2022, and 21,044 MCF of natural gas in 2023. The monthly natural gas usage in was highest in January 2024, consuming 42,188 MCF.

The facility provided maintenance records from January 2022 through January 2024, as required by SC VI.2. Maintenance was conducted during the turbine's annual inspection in 2022 and 2023.

FGOILFIREDPKRS

This flexible group consists of two No. 2 fuel oil-fired jet turbine generators, each with a 23 MW capacity at a temperature of 20°F (EUCTG13-1 & EUCTG13-2).

This flexible group is subject to a No.2 Fuel Oil material limit of 1.0% sulfur by weight with a heat value of 18,000 BTU/lb. Per SC VI.1, DTE provided their Fuel Oil Supply Agreement with Marathon Petroleum Company in effect from January 1, 2024, through December 31, 2026. The agreement includes providing No. 2 fuel oil that has a maximum sulfur content of 15 ppm. This fuel agreement demonstrates that the fuel meets the requirement of SC II.1.

The facility provided monthly fuel usage records from January 2022 through January 2024, as required by SC VI.2. These turbines consumed 100,491 gallons of fuel oil in 2022, 36,634 gallons of fuel oil in 2023, and 27 gallons of fuel oil in January 2024. The monthly fuel oil usage in was highest in June 2022 consuming 22,319 gallons of oil.

The facility provided maintenance records from January 2022 through January 2024, as required by SC VI.3. Maintenance was conducted during the turbine's annual inspection in 2022 and 2023.

Reporting

Semiannual and annual certifications of compliance have been submitted to the AQD District Office on time since the last inspection. Additionally, the facility reported that they did not have any deviations, which I verified during this inspection and record review.

Conclusion

Based on my on-site inspection and review of the records, DTE Electric Company – Northeast Peaking Facility (SRN: B2808) is in compliance with the conditions of ROP No. MI -ROP-B2808-2023, as well as all applicable air quality rules and regulations.

NAME *Mark Reid*

DATE 03/05/2024

SUPERVISOR *K. Kelly*