

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

B280371980

FACILITY: DTE Electric Company - Placid Peaking Facility		SRN / ID: B2803
LOCATION: 4912 EDGAR ROAD, CLARKSTON		DISTRICT: Warren
CITY: CLARKSTON		COUNTY: OAKLAND
CONTACT: Zachary Josefiak , Environmental Engineer		ACTIVITY DATE: 05/07/2024
STAFF: Marie Reid	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY24 scheduled inspection.		
RESOLVED COMPLAINTS:		

On May 7, 2024, I (Marie Reid), Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division (EGLE-AQD), conducted a scheduled inspection of DTE Electric Company – Placid Peaking Facility (DTE) (SRN: B2803) located at 4912 Edgar Road, Clarkston, Michigan. Jillian Cellini, EGLE – AQD, Environmental Quality Analyst, accompanied me on the inspection. The purpose of this inspection was to determine the facility's compliance with the requirements of the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Administrative Rules; 40 CFR Part 63 Subparts A and ZZZZ – National Emissions Standards for Stationary Reciprocating Internal Combustion Engines; and the conditions of Renewable Operating Permit (ROP) No. MI-ROP-B2803-2023.

Safety Equipment: Flame resistant clothing, hard hat, safety glasses, hearing protection, steel toed boots.

Source Description

DTE Placid Peaking Facility is located in Oakland County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/maintenance for all criteria pollutants. The facility is bordered on the north side by Foster Lake and undeveloped land to the east. The nearest residents are located ~400 feet to the west and south.

DTE Placid Peaking Facility is a peaking station power plant that consists of (5) identical diesel-fired engines used during peak power demand times to provide additional power to the grid at predetermined locations. Each engine is equipped with a catalytic oxidizer.

Regulatory Analysis

DTE Placid Peaking Facility is a major source of nitrogen oxides (NOx) and carbon monoxide (CO) and is a true minor source for HAPs. Additionally, the facility is subject to 40 CFR Part 63 Subparts A and ZZZZ – National Emissions Standards for Stationary Reciprocating Internal Combustion Engines.

Annual Air Emissions Report (AER)

The 2023 AER was submitted on time and was reviewed before this inspection. Upon review, the control efficiencies used for CO are adjusted based on the date of the last stack test and the test results. This is acceptable. The following table lists stationary source information as reported in the Annual Air Emissions Report for the year 2023:

Pollutant Name	Total Emissions (tons)
CO	0.06
NOx	1.93
PM10 – Primary	0.03

PM2.5 – Primary	0.03
SO2	0.0009
VOC	0.06

Inspection & Compliance Evaluation

We arrived at the front gate of the facility around 10:30 AM. DTE staff unlocked the gate and escorted us to the main office where we met with Zack Josefiak, Environmental Engineer and Joseph Hodnett, Substation Operator. I identified myself, signed in, and stated the purpose of the inspection. I held a pre-inspection meeting with DTE staff where they answered specific site questions. We then toured the facility. The five engines were observed during this inspection and DTE staff informed me that none of the engines were operating.

The engines are organized in a row of individual enclosure sheds numbered 12-1 through 12-5 from north to south. The engines are vented through the roof of each shed to a catalyst control. The catalyst control is used to reduce CO emissions from the engines. A short elbow in the horizontal ductwork exhaust gases upwards to the ambient air between 10 and 15 feet above ground level. I did not observe the engine nameplates during this inspection.

I observed the hours meter for each engine and recorded the operating hours for each unit.

Emission Unit	Engine Operating Hours as of 5/7/2024 (hours)
EU00001 – (12-1)	7,755.2
EU00002 – (12-2)	7,592.3
EU00003 – (12-3)	7,213.7
EU00004 – (12-4)	7,570.9
EU00005 – (12-5)	7,377.1

I observed a 30,000-gallon No. 2 diesel fuel tank located on the west side of the facility, outside of the perimeter fence. At the time of the inspection, the tank contained 25,650 gallons of fuel. Upon review of the ROP Tech Review Notes, the diesel tank is not subject to the Standards of Performance for Storage Vessels for Petroleum Liquids (40 CFR 63 Subpart K, Subpart Ka, and Subpart Kb) because the tanks were installed in 1970, before the applicability dates listed in the subparts.

FGPEAKERS

Emission Limits

This flexible group is subject to a CO emission limit of 23 ppmv dry at 15% oxygen or at least a 70% reduction during all periods of operation except during periods of start-up (SC I.1). The permittee must conduct subsequent performance tests every 8,760 hours of operation or 3 years, whichever comes first, to verify compliance with the emission limit in SC I.1 (SC V.1). The most recent performance testing for all five engines was completed on November 6-8, 2023, less than three years since the previous performance testing that was completed on June 1-4, 2021. This satisfies the requirement in SC V.1.

Per SC V.3 and SC VII.4, the permittee shall submit a Notification of Intent to the Administrator to conduct a performance test at least 60 days before the performance test is initially scheduled to begin. The Notification of Intent and test plan for this performance test were submitted on October 3, 2023, 34 days before the first day of the test, which is less

than the 60-day notification deadline. Due to AQD discretion, a violation notice was not issued for this non-compliance.

The Notification of Compliance Status was submitted as required by VIII.5. Test results indicated a CO destruction efficiency of 70% or more while being operated at 100% load conditions. The results of the emissions testing are in the table below:

Unit	Test Date	Average CO DE (%)
12-1	11-6-2023	79.8%
12-2	11-7-2023	75.6%
12-3	11-7-2023	72.8%
12-4	11-8-2023	78.3%
12-5	11-8-2023	75.1%

Material Limits

This flexible group is subject to a No.2 Fuel Oil material limit with a maximum sulfur content of 15 ppm (0.0015 percent) by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent (SC II.1). Per SC VI.6, DTE provided their fuel oil supply agreement with Marathon Petroleum Company LP that was most recently renewed from January 1, 2024 through December 31, 2026. The agreement includes providing No.2 fuel oil that has a max sulfur content of 15ppmv and a min Cetane index of 40. This fuel agreement demonstrates that the fuel meets the requirement of SC II.1.

Process / Operational Restrictions

Per SC III.1, the permittee must operate and maintain any engine in FGPEAKERS including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. I observed all five units during this inspection. I also reviewed the facility's performance evaluations, operation and maintenance procedures, and maintenance records and determined the facility is in compliance with this condition.

Per SC III.2, the permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. I reviewed the company's Startup, Shutdown, Malfunction (SSM) plan which states normal startup takes 180 seconds from the time of startup initiation, which satisfies the requirement of this condition.

Per SC III.3, the permittee shall prepare a site-specific monitoring plan that addresses the Continuous Parameter Monitoring System (CPMS) design, data collection, and the quality assurance and quality control elements outlined in this condition. I reviewed the facility's CPMS plan, dated February 2024. Upon review, the plan contains all required information.

Design / Equipment Parameters

Per SC IV.1.a, the permittee must maintain the catalyst, so the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop that was measured during the initial performance test. Based on the provided CPMS records, DTE is meeting the requirements of this condition when the units are in operation, other than the instance noted below.

DTE submitted a deviation report along with their annual and semiannual compliance reports for 2023. According to the deviation report and speaking to DTE staff during the

inspection, the pressure drop transmitters failed and the data flatlined in unit 12-3 on 12/1/2020 and in unit 12-5 on 2/4/2021. This deviation was identified during the stack test conducted in November 2023. The transmitters were replaced on 12/28/23. DTE hires a third party to calculate and review the CPMS data semiannually. As a result of this deviation, they hired an additional third party to review the data quarterly with the goal to minimize the duration of any future malfunctions. Due to AQD discretion, a violation notice was not issued for this non-compliance.

Per SC IV.1.b, the permittee must maintain the temperature of the exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. Based on the provided CPMS records, the catalyst inlet temperature is within the required range while the units are operating.

Per SC IV.2, for an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, the permittee must either a) Install a closed crankcase ventilation system, or b) Install an open crankcase filtration emission control system. DTE staff informed me that the engines are equipped with an open crankcase filtration system.

Per SC IV.3, for each engine, the permittee shall ensure:

a) The CPMS collects data at least once every 15 minutes. Based on the provided CPMS records, the CPMS is collecting data every 15 minutes to demonstrate compliance.

b) The temperature sensor must have a minimum tolerance of 2.8 °C (5 °F) or 1 percent of the measurement range, whichever is larger. The CPMS plan verifies the temperature sensor meets this requirement.

c) Conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least annually; and d) Conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan. According to the CPMS plan, performance evaluations, system accuracy audits, and other audits are conducted annually. The CPMS plan addresses the equipment performance criteria and design specifications, sampling interface, equipment performance evaluations, operating & maintenance procedures, and reporting & recordkeeping.

Monitoring / Recordkeeping

Per SC VI.2.a, the permittee shall continuously monitor the catalyst parameters at all times that the stationary RICE is operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities. Based on the provided CPMS records and speaking with staff, DTE monitors the catalyst parameters continuously, except for the times listed in this condition.

Per SC VI.2.b, the permittee shall not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. Based on the provided CPMS records and speaking with staff, DTE does not use data recorded for any of the reasons listed in this condition.

Per SC VI.3, the permittee must keep the following records:

a) Records described in 40 CFR 63.10(b)(2)(vi) through (xi), and b) Previous (i.e., superseded) versions of the performance evaluation plan. I was provided all of the records

required by this condition and the previous performance evaluation plan. Upon review, these records are acceptable.

c) Requests for alternatives to the relative accuracy test for CPMS. According to staff, DTE has not made requests for alternatives to the relative accuracy test.

Per SC VI.4, the permittee must keep records to demonstrate continuous compliance with the operating limitations in SC IV.1: a) Collecting the catalyst inlet temperature data; and b) reducing these data to 4-hour rolling averages; and c) maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and d) measuring the pressure drop across the catalyst monthly. Based on the CPMS records, DTE is properly keeping track of catalyst inlet temperature and pressure drop readings other than the instance described in SC IV.1.a. Due to AQD discretion, a violation notice was not issued for failing to monitor the pressure drop as required by SC VI.4.d.

Per SC VI.5, the permittee must keep records of maintenance conducted on each engine. DTE provided all Work Orders (WOs) from October 2021 – May 2024 as required. These WO's include all maintenance and performance evaluations conducted on the engines. Based on the records reviewed, this condition is being met.

Per SC VI.7-VI.9, the permittee's records must be in a form suitable and readily available and kept on file for 5-years. All requested records were provided in a suitable form and in a timely manner.

Reporting

DTE submitted their semi-annual reports and annual compliance reports to the AQD District Office on time since the last inspection, as required by SC VII.2, VII.3, VII.6, and VII.7. DTE reported one deviation with their semi-annual/annual certification report for the 2023 reporting period, as required by SC VII.1.

Stack / Vent Restrictions

Each engine in FGPEAKERS has its own associated stack, however, this flexible group does not have any stack restrictions.

Other Requirements

Per SC IX.1, the permittee shall comply with the NESHAP Subparts A and ZZZZ rules and regulations. Based on the observations made and records reviewed, the company is in compliance with the NESHAP Subparts A and ZZZZ, except for the instances of non-compliance described in this report for SC IV.1.a, SC V.3, SC VI.3.d, and SC VII.4. As previously stated, at AQD digression, a violation notice was not issued for these non-compliances.

Additional Observations

Several exempt emission units were historically listed in the 2017 ROP application. These units were not listed in the most recent ROP application from 2022. DTE staff explained this equipment consists of breakers/transformers, not storage tanks, and do not need to be included in the ROP application. After review, this is acceptable.

Conclusion

The facility did not submit a Notification of Intent to the Administrator to conduct a performance test at least 60 days before the performance test. This is a non-compliance of

MI-ROP-B2803-2023, FGPEAKERS SC V.4 and SC VII.4, and 40 CFR Part 63, Subpart ZZZZ.

The pressure transmitter on the facility's CPMS flatlined in unit 12-3 on 12/1/2020 and in unit 12-5 on 2/4/2021 and was replaced on 12/28/2023. During this period, pressure drop across the catalyst was not being recorded to verify it did not change by more than 2 inches of water from the pressure drop measured during the initial performance test. This is a non-compliance of MI-ROP-B2803-2023, FGPEAKERS SC IV.1.a and SC VI.4.d, and 40 CFR Part 63, Subpart ZZZZ.

At AQD discretion, no violation notice was issued for these non-compliances.

Based on my inspection and record review, the facility is in compliance with all other requirements of the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Administrative Rules; 40 CFR Part 63 Subparts A and ZZZZ – National Emissions Standards for Stationary Reciprocating Internal Combustion Engines; and the conditions of Renewable Operating Permit (ROP) No. MI-ROP-B2803-2023.

NAME *Mark Red*

DATE 06/05/2024

SUPERVISOR *K. Kelly*