

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

B280856967

FACILITY: DTE Electric Company - Northeast Peaking Facility		SRN / ID: B2808
LOCATION: 6401 EAST EIGHT MILE ROAD, WARREN		DISTRICT: Warren
CITY: WARREN		COUNTY: MACOMB
CONTACT: Stefanie Ledesma , Associate Environmental Engineer		ACTIVITY DATE: 01/28/2021
STAFF: Shamim Ahammod	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Conducted a virtual scheduled inspection of the DTE Electric Company-Northeast Peaking facility (SRN: B2808) to determine the company's compliance with the requirements of the ROP No. MI-ROP-B2808-2017.		
RESOLVED COMPLAINTS:		

On January 28, 2021, Michigan Department of Environment, Great Lakes and Energy-Air Quality Division (EGLE-AQD) staff, I (Shamim Ahammod) conducted a virtual scheduled inspection of the DTE Electric Company-Northeast Peaking facility (SRN: B2808) located at 6401 East Eight Mile Road, Warren, Michigan. 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-B2808-2017.

SOURCE DESCRIPTION

DTE Electric Company-Northeast Peaking facility is designed to generate additional electricity during periods of high customer demand. The facility is composed of four natural gas-fired combustion turbines (EU CTG11-1, EU CTG11-2, EU CTG11-3, and EU CTG11-4), one oil or natural gas-fired combustion turbine generator (EU CTG12-1), two oil-fired jet turbine generators, and one black start diesel engine (EU BSE CTG12-1).

INSPECTION

On January 28, 2021, at 2 PM, I prearranged a Microsoft Team Meeting for the scheduled virtual inspection with Ms. Stefanie Ledesma, Associate Environmental Engineer, DTE Energy. I discussed the facility's emissions units that are included in the current ROP. At the time of the inspection, no emission units were in operation. Via video call, I observed four natural gas-fired combustion turbines generators (EU CTG11-1, EU CTG11-2, EU CTG11-3, and EU CTG11-4), one oil or natural gas-fired combustion turbine generator (EU CTG12-1), two oil-fired jet turbine generator, and one black start diesel engine (EU BSE CTG12-1) at the facility. I was informed that these engines only need to be operated when the electricity demand is high. The engines run mainly in summer and during really cold winter weather.

REGULATORY ANALYSIS

EU CTG12-1

EU CTG12-1 is a No. 2 oil or natural gas-fired combustion turbine generator with a 24 MW capacity at a temperature of 20 degrees Fahrenheit. At the time of virtual inspection, I noted the total operational hours of EU CTG12-1 was 14543 hours.

Material Limit

Per SC II.1, The permittee shall use No.2 oil or natural gas as a fuel in the combustion turbine. The maximum sulfur content in No. 2 fuel oil is 1.11 lb/MMBTU of heat input. According to Ms. Ledesma, Northeast EU CTG 12-1 only burned natural gas in 2018, 2019, and 2020 because natural gas is more economical. Based on the record, 15,004 MCF natural gas was burned in EU CTG12-1 in 2020.

Process/operational restrictions

Per SC III.1 of EU CTG12-1, the permittee shall burn only pipeline-quality natural gas, as defined in 40 CFR 72.2, in the combustion turbines at this facility. The permittee only uses natural gas as a fuel.

Monitoring/recordkeeping

As specified in SC VI.2, the permittee maintained the record of the natural gas and No. 2 fuel oil consumed by EU CTG 12-1 for each calendar month monthly. According to Ms. Ledesma, Northeast EU CTG 12-1 only burned natural gas in 2018, 2019, and 2020. Based on the record, 15,004 MCF natural gas was burned in EU CTG12-1 in 2020.

EU BSE CTG12-1

A 300-horsepower black start diesel engine located at an area source of HAP emissions. At the time of virtual inspection, I noted the total operational hours of EU CTG12-1 was 10.5 hours.

Process/operational restrictions

Per SC III.1, the permittee changed oil and filter, inspected air cleaners, all hoses, and belts on 11/20/2020.

Per SC III.3, DTE Northeast Peaker's did not take the option to utilize the oil analysis program but has opted to change out the oil on an annual basis, according to Ms. Ledesma.

Per SC III.4, according to Ms. Ledesma, Northeast EU BSE CTG12-1 is operated per DTE Northeast CTG 12-1 Black Start procedures and DTE Peaker's have developed their maintenance plan titled "Annual Black Start Checklist" in which maintenance components of the engine are inspected annually.

Monitoring/recordkeeping

Per SC VI.1 of EU BSE CTG12-1, if using an oil analysis program, the permittee shall test for and record, and maintain the total base number, viscosity, and percent water content every 500 hours or annually. According to Ms. Ledesma, DTE Northeast Peaker's did not take the option to utilize the oil analysis program but has opted to change out the oil on an annual basis. Therefore, the SC VI.1 is not applicable for the emission unit of EU BSE CTG12-1.

As specified in SC VI.2, Ms. Ledesma provided a record-keeping of all maintenance conducted on the emission unit.

Other requirements

Emission unit, EU BSE CTG12-1 appears to comply with the conditions of NESHAP as specified in 40 CFR part 63, Subpart A, and Subpart ZZZZ. These requirements are described in the Process/operational restrictions section (SC III.1, and SC III.4) and the Monitoring/recordkeeping section (SC VI.1, and SC VI.2) of EU BSE CTG12-1.

FGNATGASPKRS

This group consists of four natural gas-fired combustion turbine generators (EU CTG11-1, EU CTG11-2, EU CTG11-3, and EU CTG11-4), each with a 20 MW capacity at a temperature of 20 degrees Fahrenheit. At the time of virtual inspection, I noted the total operational hours of EU CTG11-1, EU CTG11-2, EU CTG11-3, and EU CTG11-4 were 21602 hours, 21438 hours, 20119 hours, and 21074 hours respectively.

Process/operational restrictions

Per SC III.1 of FGNATGASPKRS, the permittee shall burn only pipeline-quality natural gas in the combustion turbine at this facility. The permittee only uses pipeline-quality natural gas as a fuel in the combustion turbine.

Monitoring/record keeping

As required in SC VI.1, Ms. Ledesma provided a record showing source-wide natural gas consumption rate in FGNATGASPKRS for each calendar month. The total amount of 131 MCF natural gas was burned in FGNATGASPKRS in 2020.

FGOILFIREDPKRS

Two No. 2 fuel oil-fired jet turbine generators (EU CTG13-1 and EU CTG13-2), each with a 23 MW capacity at a temperature of 20 F. At the time of virtual inspection, I noted the total operational hours of EU CTG13-1 and EU CTG13-2 were 251.4 hours and 346.2 hours, respectively.

Material limit

As required in SC II.1, Ms. Ledesma provided a document named "Fuel Oil Supply Agreement". The term of this agreement is from January 1, 2021 to December 31, 2023. I reviewed this document and verified that the sulfur content of No. 2 fuel oil is 15 PPM (0.0015%) which is below the sulfur content limit of 1% by weight. I asked the DTE whether they conduct any tests to verify that the oil has the sulfur content equal or below the agreement content. Ms. Ledesma said, "DTE does not perform any sampling of the diesel fuel. We purchase only certified ultra-low sulfur diesel (ULSD). Both contract & the SDS of the product specifies ULSD is <15 ppm sulfur, which satisfies that permit requirement for diesel fuel burned at the site".

Monitoring/recordkeeping

As required in SC VI.1, the permittee keeps a record of the sulfur content of fuel oil used in EU CTG13-1 and EU CTG13-2. Ms. Ledesma provided a document named "Fuel Oil Supply Agreement". The term of this agreement is from January 1, 2021 to December 31, 2023. I reviewed this document and verified that the sulfur content of No. 2 fuel oil is 15 PPM (0.0015%) which is below the sulfur content limit of 1% by weight.

As required in SC VI.2, Ms. Ledesma provided a record showing no. 2 fuel oil consumption for each calendar month for the last 12-month. The total amount of 109,644 gallons no. 2 fuel oil was consumed by combined both EU CTG13-1 and EU CTG13-2 in 2020.

Conclusion

Based on the virtual inspection, review of records, and discussion with the facility's staff, the facility appears to be in compliance with the conditions of ROP No. MI-ROP-B2808-2017.

NAME 

DATE April 21, 2021

SUPERVISOR 