

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B279549149

FACILITY: DTE Electric Company - Colfax Peaking Facility		SRN / ID: B2795
LOCATION: 4025 GREGORY, FOWLERVILLE		DISTRICT: Lansing
CITY: FOWLERVILLE		COUNTY: LIVINGSTON
CONTACT: Stephanie Zanke , Associate Environmental Engineer		ACTIVITY DATE: 05/23/2019
STAFF: Samantha Braman	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection as part of an FCE.		
RESOLVED COMPLAINTS:		

B2795

Scheduled inspection as part of a Full Compliance Evaluation (FCE) of DTE – Electric Company Colfax Peakers. Last inspection occurred 3/3/2018.

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

Location: DTE – Colfax is located west of Fowlerville and south of W. Grand River Avenue in a mainly rural area. Industrial/commercial property is located to the east and west. Farmland is to the north and south of the facility with some residential housing in the surrounding area.

Facility Description:

DTE - Colfax is a peaker station power plant that consists of five (5) diesel fuel-fired engines that provide electric power to the transmission grid during peak electrical demand periods or when required for load stability. The engines were installed in 1969. The five (5) engines are identical GM Power, EMD MP45 diesel fuel-fired compression ignition (CI) reciprocating internal combustion engines (RICE), non-emergency, non-black start. The engines are 20 cylinders each rated at 2.75 megawatts (MW) or about 3600 horsepower (hp). The engines are electric start and are capable of being remotely started from DTE headquarters. An on-site operator is not required.

Regulatory Overview:

- Title V Source – Renewable Operating Permit (ROP) Program
- Prevention of Significant Deterioration (PSD)
- 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)

The following is a list of emission units that are on ROP No. MI-ROP-B2795-2016 plus exempt equipment that is not on the ROP:

Emission Unit ID	Emission Unit Description	Install/Modify Date	App. Requirements
EUDG11-1	No. 1 compression ignition (CI) reciprocating internal combustion engine (RICE). Fueled by No. 2 fuel oil and rated at 2.75 MW or about 3600 hp. Equipped with a CO oxidation catalyst.	07-01-1969/ 10-26-2012	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ

EUDG11-2	No. 1 compression ignition (CI) reciprocating internal combustion engine (RICE). Fueled by No. 2 fuel oil and rated at 2.75 MW or about 3600 hp. Equipped with a CO oxidation catalyst.	08-01-1969/ 10-26-2012	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
EUDG11-3	No. 1 compression ignition (CI) reciprocating internal combustion engine (RICE). Fueled by No. 2 fuel oil and rated at 2.75 MW or about 3600 hp. Equipped with a CO oxidation catalyst.	07-01-1969/ 10-26-2012	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
EUDG11-4	No. 1 compression ignition (CI) reciprocating internal combustion engine (RICE). Fueled by No. 2 fuel oil and rated at 2.75 MW or about 3600 hp. Equipped with a CO oxidation catalyst.	07-01-1969 / 10-26-2012	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
EUDG11-5	No. 1 compression ignition (CI) reciprocating internal combustion engine (RICE). Fueled by No. 2 fuel oil and rated at 2.75 MW or about 3600 hp. Equipped with a CO oxidation catalyst.	08-01-1969 / 10-26-2012	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
Horizontal storage tank	28,000-gallon No. 1 or 2 fuel oil (diesel) tank with secondary containment.	NA	Rule 284(2)(d)

Michigan Air Emissions Reporting System (MAERS):

The facility reports to MAERS as a Major, Category I fee subject.

2018 Reporting Year Results for FGPEAKERS (EUDG11-1, EUDG11-2, EUDG11-3, EUDG11-4, EUDG11-5):

CO – 0.35 tpy

NOx – 6.5 tpy

PM10, primary – 0.12 tpy

PM2.5, primary – 0.11 tpy

SO2 – 0.0031 tpy

VOC – 0.20 tpy

Actual emissions from the facility are low because as a peaking station, the engines do not operate very often. However, the engines operate at full capacity when called into service.

Inspection:

Arrived: 10:17 am

Departed: 11:30 am

No visible emissions (VEs) were observed from any of the facility operations. No odors were identified surrounding the facility.

Julie Brunner and I pulled up to the gate followed by Stefanie Ledesma (formerly Zanke), Associate Environmental Engineer met us. Stefanie is Frank LeForce's replacement. The DTE station operator arrived, signed us in and provided the safety orientation. We discussed the operations at the peaking station and the requirements of the ROP.

Each engine has a separate enclosure shed. The engines are vented on the roof of the shed and the catalyst is installed in a horizontal run of ductwork on the roof. A short elbow directs the exhaust gases upwards to the ambient air about 10 to 15 feet from ground level. The engines are numbered from 1 to 5 going from east to west in a row. None of the engines were operating. The engines run mainly in summer and during really cold winter weather.

From the clocks on each engine, the following operating hours were recorded:

Unit	5/23/19	3/06/18
EUDG11-1	16,757.4 hours	16,609.3 hours
EUDG11-2	21,623.7 hours	21,521.8 hours
EUDG11-3	20,323.1 hours	20,255.7 hours
EUDG11-4	20,574.1 hours	20,472.1 hours
EUDG11-5	21,534.0 hours	21,431.7 hours

Stack testing for compliance with the CO emission limit in SC I.1 has been completed as required by SC V.1. All engines tested with an average CO destruction efficiency of 70% or more, and therefore are in compliance with 40 CFR 63, Subpart ZZZZ.

Date	Unit	Average CO Destruction Efficiency (%)
10/2/18	11-1	85.3
10/3/18	11-2	73.2
10/4/18	11-3	83.4
10/5/18	11-4	73
10/8/18	11-5	80.5

Horizontal Storage Tank:

A 28,000-gallon horizontal fuel storage tank with secondary containment contains the diesel fuel for the engines. The tank is exempt from permitting per Rule 284(2)(d) and not required to be on the ROP.

Records Review:

The following records were requested during the inspection based on the special conditions in ROP No. MI-ROP-B2795-2016 starting from the last inspection, March of 2018.

SC VI.1 The permittee shall maintain a complete record of fuel oil specifications and/or a fuel oil analysis for each delivery, or storage tank, of fuel oil. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in fuel oil.

A copy of the Fuel Oil Supply Agreement dated November 29, 2018 between Marathon and DTE was provided for Ultra Low Sulfur No. 2 Diesel (No. 2MV15). It lists sulfur by wt. as 15 ppm (0.0015% by wt).

SC VI.5 The permittee shall maintain records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or of the air pollution control and monitoring equipment. These records shall be kept on file and made available to the Department upon request.

Malfunctions are included in the semiannual compliance report. There have been no malfunctions/deviations reported since the last inspection in March 2018.

SC VI.7 The permittee shall maintain records of all required maintenance performed on the air pollution control and monitoring equipment. These records shall be kept on file and made available to the Department upon request.

Copies of the annual maintenance inspections for 2018, performed on 5/7/18 were provided and shows annual and semi-annual activities.

SC VI.8 The permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. These records shall be kept on file and made available to the Department upon request

There have been no malfunctions of the air pollution control and monitoring equipment since the last inspection.

SC VI.9 The permittee shall maintain the following records for each continuous parameter monitoring system (CPMS) on file and make available to the Department upon request:

- a. Records described in 40 CFR 63.10(b)(2)(vi) through (xi).
- b. Previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3).
- c. Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in 40 CFR 63.8(f)(6)(i), if applicable

Calibration checks on the catalyst monitor systems were provided. The temperature was reported in the 370/389 range. I was also provided with a work order for the catalyst monitor. One of the channels in the monitor was shorted. The monitor was replaced, and the unit was test ran to verify operation. This was performed on 10/15/18.

SC VI.10 The permittee shall maintain the following records as required to demonstrate continuous compliance with the operating limitations in SC III.1 and SC III.2. These records shall be kept on file and made available to the Department upon request:

- a. Catalyst inlet temperature data reduced to 4-hour rolling averages; and

- b. Pressure drop across the catalyst measured monthly.
(40 CFR 63.6655(d), 40 CFR 63.6660, 40 CFR 63 – Table 6(10))

A copy of the 2017 and 2018 records showing the differential pressure and temperature (4-hour rolling average) was provided. The measurements were presented for every 15 minutes of operation. They appeared to be within the required ranges.

All records obtained in the course of this compliance inspection are attached to the paper file copy of this report.

Annual and semi-annual certifications, and deviation reports are received on time. No deviations have been reported since the last inspection.

DTE - Colfax appeared to be in compliance with applicable state and federal air regulations.

NAME Sarah Bruner DATE 6/25/19 SUPERVISOR MSM

