

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

B432126545

FACILITY: THE DTE ELECTRIC COMPANY - FERMI ENERGY CENTER		SRN / ID: B4321
LOCATION: 6400 DIXIE HWY, NEWPORT		DISTRICT: Jackson
CITY: NEWPORT		COUNTY: MONROE
CONTACT: Phillis Rynne , Senior Engineer, Environmental		ACTIVITY DATE: 08/20/2014
STAFF: Diane Kavanaugh-Velort	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Title V Major Source. Complete scheduled inspection. REVISED 10-24-14 to correct minor typos and add clarifications per company comments received 10-21-2014.		
RESOLVED COMPLAINTS:		

DTE Contact Information:

Phillis Rynne, PE, Senior Engineer, rynnep@dteenergy.com (313) 235-9419

Mark Nederveld, Environmental Engineer, nederveldm@dteenergy.com

Mary Hana, Senior Engineer, hanamj@dteenergy.com

On August 20, 2014, I conducted a complete scheduled compliance inspection of the above facility. The MDEQ-AQD compliance inspection was announced a short time prior in order to provide DTE FERMI Energy Center with the necessary notice and required security information to gain access to the facility. The purpose of the inspection is to determine the facility's compliance status with federal and state Air Pollution Control regulations, in particular Act 451, Part 55 Air Pollution Control and the administrative rules, and with the conditions of their ROP No. MI-ROP-B4321-2013, and Air Use Permit to Install No. 3-14 issued for eleven new emergency engine generators. This report acknowledges that DTE FERMI is subject to the federal National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Area Sources (more commonly referred to as Maximum Available Control Technology Standards (MACT)) for Reciprocating Internal Combustion Engines (RICE) and associated New Source Performance Standard (NSPS), Subpart IIII and JJJJ for the same. DTE FERMI is also subject to the Area Source MACT for Industrial, Commercial, and Institutional Boilers, 40 CFR Part 63, Subpart JJJJJ. The AQD has not been delegated authority for the Area Source MACT Standards and therefore compliance was not determined at this time. The AQD has delegated authority for the associated NSPS standards.

DTE FERMI representatives present during the inspection: Phillis Rynne, Senior Engineer - Environmental Mgmt & Resources, Mary Hana, Senior Engineer - Environmental, and Mark Nederveld, Environmental Engineer.

Upon my arrival to the facility it was necessary to stop at the security entrance gate and provide identification. The guard directed me to the TAC building and I met with everyone there. I discussed the purpose and scope of the inspection and the records review. I provided Phillis and Mark with the DEQ Inspection brochure, Rights and Responsibilities. Phillis, Mark and Mary asked questions during this time and there was some discussion related to the issues involving their application for ROP Minor Modification and Administrative Amendments to the existing ROP due to the issuance of PTI 3-14. Phillis stated that the application was submitted to Kirsten Clemens, AQD Permits about 2 weeks ago and she is currently on vacation. I told Phillis that I would follow up with Kirsten.

I requested general operating information for FERMI. Phillis, Mary said the facility currently employes approximately 800 people. It operates 3 shifts. Boilers operate seasonally for building heat only. CTGs operate during peak times during hot summer months. During the inspection today, I was informed none of the permitted equipment or exempt generators are operating today to their knowledge. They informed me that they are not normally notified of day to day operations.

Mark and Mary went over the FERMI safety procedures and the conditions and restrictions related to the areas we were planning to inspect. Safety equipment was required: Hard Hat, safety glasses, hearing protection and a pair of gloves. Identification badges and X-ray and metal detection screening are required prior to entering the restricted area of the plant. We all remained together but needed separate escorts to enter and exit buildings after the main security check point into the nuclear reactor surrounding areas.

FACILITY INSPECTION

During the walk through of the Facility I was accompanied by Phillis, Mark and Mary and we went to each of the specific areas where the FG/EU in the permit are located. A Site Diagram is attached to this report and highlights the general areas inspected. I verified that the equipment was not operating. All equipment appeared to be in good condition. I did not observe any odors or visible emissions during the inspection.

FERMI is a nuclear power plant and the permitted equipment is foremost for back-up to the nuclear plant. However, the EU-CTG's are used for power supply to the grid during peak demand. According to Mark, the FG-EDG1-4 (11-14) are the primary back-up power supply for the plant, and the FG-FERMIPKS (CTG 11-1 to 11-4) can be back-fed into the system to provide power to the plant if necessary.

During the inspection we entered the building that houses the EU-EDG 11 to 14, 2,850 kW emergency diesel engine and generator sets. The building is divided into two separate halves and required secure entry (use of key cards). We entered and observed both sides housing EDG 11 to 14 and the associated Fuel Tank room for one of the EDG. Upon entering two of the four rooms housing EDG's I heard a somewhat loud fan or blower type noise. I had observed a similar noise during my previous inspection. At that time DTE investigated whether any engine was operational and found that they were not and that what we heard was several room ventilation systems operating. I again observed the gauges indicated a Temperature reading and other gauges had low pressure readings (not zero) this appears to be their normal idle status. If the EDG had been operating it would have been obvious and much louder. These units are essential for back up to the nuclear reactor and therefore they are properly installed, maintained and operated.

MI-ROP-B4321-2013 contains the following EU/FG: SOURCE-WIDE CONDITIONS are contained in both ROP Sections.

SECTION 1

EU-BSE_STANDBYDG, one caterpillar black start emergency diesel engine and generator set.
NOT OPERATING

FG-AUXBLRS, two diesel fuel fired boilers 50,000 lb/hr. NOT OPERATING

FG-EDG1-4, four emergency diesel generator sets 2,850 kW. NOT OPERATING

FG-EMERGENS: EU-NOCEMERGGEN, EU-SECEDG-01 and EU-SECEDG-02 and EU-EMERGFIREPUMP. All of these are now installed and operational. However, none of these were operating during the inspection. I observed some but not all of these during the inspection.

FG-COLDCLEANERS covers exempt cold cleaners and administrative rules, Rule 611 and Rule 707. I did not observe any cold cleaners during the inspection.

SECTION 2

FG-FERMIPKS: Consists of EU-CTG11-1, EU-CTG11-2, EU-CTG11-3, EU-CTG11-4, GE Frame 5 diesel fuel fired peaking turbine 16,000 kW each, and EU-BSE_CTG11-1 a 350 hp, 4 stroke diesel engine used to black start EU-CTG11-1. These were NOT OPERATING.

PTI No. 3-14 contains the following EU/FG:

FG-EMERGRICE contains eleven (11) emergency RICE subject to MACT ZZZZ with compliance through NSPS IIII.

- EUFLEX5501 & 5502
- EUNEPLIFT1 & 2
- EUNEPSOURCE1 & 2
- EUDOMBOOSTER1 & 2
- EUFLEXSFI & 2
- EUFLEXCOMP

FG-NSPS4I contains the federal New Source Performance Standard requirements for the eleven (11) RICE.

During the inspection I observed that some of the above new emergency engines are currently on-site, per Mark 5 of 11 of them. They had not yet been installed. FERMI procedures require on-site confirmation testing to assure proper operation before others are brought in. We discussed the permit requirement to notify AQD "within 30 days after completion of the installation, construction, reconstruction, relocation, or modification,..." It also states this "is considered to occur not later than commencement of trial operation of each engine of FG-EMERGRICE." Phillis and I agreed FERMI will provide a staged notice to comply with this condition since there will be "trial operation" of some as they are received, installed and tested however if they fail they will be sent back and replaced with others. If they pass then the secondary (backup to backup) engines can then be installed and tested, etc... until all eleven are completely installed (assumed since this is number in PTI).

FERMI is required to maintain hours of operation and diesel fuel usage records. Their permit application indicated the engines are manufacturer certified to meet the applicable emission limits. If they are not operated in accordance with manufacturer recommendations some may require future emission testing. Non-resettable hour meters are required. None of the NSPS compliance items were verified at this time due to the indicated in-complete status of their installation and operation.

RECORDKEEPING OBTAINED DURING INSPECTION

DTE FERMI MI-ROP-B4321-2013 contains SOURCE-WIDE FG-FACILITY emission limits for SO₂ (89.4 tpy), NO_x (89.4 tpy), individual HAP (9 tpy) and aggregate HAPs (22.4 tpy). The ROP Conditions require monthly and previous 12 month emission calculations be kept along with monthly fuel usage records. The ROP also contains the requirement to maintain a complete record of fuel oil specifications and/or fuel analyze for each delivery or storage tank of fuel oil. Following the plant inspection we returned to the office area to review and obtain records and conduct the inspection wrap up meeting. I discussed required record keeping with Phillis, Mark and Mary. I obtained copies of the following records from DTE:

1. A copy of DTE's 12 month rolling time period emission calculations and usage spreadsheet for period ending July 2014, and a copy of the July 2014 monthly operating data and emission spreadsheet.

2. Randomly chosen copies of DTE's Central Chemical Laboratory Fuel analysis sheets for process equipment as follows:

- EDG 11 collected 5/11/14
- EDG 12 collected 5/22/14
- EDG 13 collected 5/28/14
- EDG 14 collected 6/4/14
- CTG 1 collected 5/13/14
- Aux Boiler collected 5/18/14

DTE Fuel analysis from Central Chemical Laboratory for: LDO-FERMI EDG 11 (5/11/14) sulfur content 0.0054 (% and lbs/MBtu) and LDO-FERMI EDG 12 (5/22/14) sulfur content 0.0033 (% and lbs/MBtu); LDO FERMI EDG 13 (5/28/14) sulfur content 0.0063 (% and lbs/MBtu); LDO FERMI EDG 14 (6/04/14) sulfur content 0.0060 (% and lbs/MBtu), and LDO FERMI 1 CTG (5/13/14) sulfur content 0.0022 (% and lbs/MBtu). LDO-Fermi-Aux Boiler (5/18/14) sulfur content 0.0017 (% and lbs/MBtu).

3. A copy of DTE's 2013 sampling results chart - contains equipment, date sampled and results for the entire year.

RECORDKEEPING & ADDITIONAL INFORMATION REQUESTED FOLLOWING THE INSPECTION

On August 29th, I sent an email to Phillis and Mark requesting clarification of some of the records I obtained during the inspection. I also requested additional information that is needed to determine FERMI's compliance. On the same day I received DTE's response with attached information. (Related correspondence is attached to this report to file). The following is a summary:

1. Two unreadable copies were found in records received. Requested readable copies -received

2. Requested/received EU/FG fuel usage summary for 2014 through July.
3. As a result of comments, Mark said spreadsheet will be corrected to "fuel use gallons per month"
4. Per Mark EU-BSE_STANDBYDG is hard piped to CTG Tank, LDO-FERMI1-CTG. For FG-EMERGENS they rely on purchase records for ultra-low sulfur diesel (ULSD <15 ppm).

DTE FERMI Source-Wide (Facility) emission calculation records for the 12 months ending July 2014:

2014 Emissions of NOx are 37 tons < 89.4 tons limit indicates COMPLIANT. Emissions of SO2 emissions are (221 pounds) 0 tons < 89.4 tons limit indicates COMPLIANT. It is noted that these values are from revised recordkeeping obtained following the inspection. The SO2 emissions reported initially in the records was 74 tons which is uncharacteristically high and AQD requested background information for calculation. Mark determined the sulfur emission factor(s) in the spreadsheet was incorrect. On September 18, 2014 he submitted a revised spreadsheet with calculation detail. (Attached to this report).

DTE's records indicate in May 2014, 3 of the 4 Turbines, Fermi CTG11-2, CTG11-3, and CTG11-4 operated significantly longer than usual with very high fuel usages reported as 81,130 gallons, 37,933 gallons and 50,503 gallons respectively. Mark informed me that the CTGs were used to supply power from May 26th to 30th due to local electric transmission issues (grid issues).

I noted that FG-AUXBLRS used a lot of fuel January through March (137,000 to 129,000) and then it dropped to 84,000 in April and 29,000 in May.

Specific emission factors are included in FERMI ROP Appendices and it allows for alternative factors if acceptable to DEQ-AQD. The DTE FERMI MAERS reporting has typically used MAERS EF. The Source-Wide SO2 emission for Reporting year 2013 was less than 1 ton. MAERS needs to represent actual recordkeeping and emissions. DTE was advised of the need to update their MAERS in 2014 to reflect actual EFs representing their operations.

COMPLIANCE SUMMARY

Based on the facility inspection and the records obtained during and following the inspection, AQD has determined that DTE FERMI Energy Center is in substantial compliance with their ROP and PTI No. 3-14. It is noted that the applicable federal Area Source MACTS were not evaluated in detail at this time. We discussed them briefly and DTE is aware of their applicability and the need to meet compliance deadlines. Due to the purpose and nature and expected use of their subject EU/FG it is likely they are in compliance with the Area RICE MACT and specifically NSPS IIII for their Emergency Diesel generators (CI RICE).

As discussed above, initial recordkeeping obtained during the inspection showed SO2 12 month rolling time period emissions of 74 tons per year for month ending July 2014. I questioned this during my review and DTE responded indicating the spreadsheet inaccurately has SO2 emission factors from the permit (maximum allowed) and not the actual fuel sampling/analysis based emission factors. Mark revised and resubmitted spreadsheet with the correction. The SO2 Emission Factors are in lbs SO2/gal:

Avg EDG Sulfur wt% = 0.0044; EF 0.0006229
Aux Boiler Sulfur wt%= 0.001; EF 0.0001416
CTG Sulfur wt%= 0.0021; EF 0.0002973
15 ppm Sulfur wt%= 0.0015; EF 0.0002123

DTE FERMI submitted their 2013 MAERS timely and reported: 4 tons CO, 25 tons NOx, 1.5 tons PM10/2.5 and less than one ton each of all other criteria pollutants including SO2. DTE used MAERS emission factors and no actual emission support records were included. It appears DTE FERMI future 2014 MAERS should utilize EFs based on their actual fuel analysis data and actual recordkeeping and DTE contacts were advised to review and accurately report emissions in MAERS.

DTE FERMI ROP Certification and Deviation Reports were submitted timely and complete during the Full Compliance Evaluation period as well.

NAME *Shane K. Titus*

DATE *10/24/14*

SUPERVISOR *S*

