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

M417532685

FACILITY: FORD MOTOR CO		SRN / ID: M4175
LOCATION: ONE AMERICAN ROAD, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: Lori Brinkman , EQO Engineer		ACTIVITY DATE: 11/19/2015
STAFF: Katherine Koster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2016 Scheduled Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted
INSPECTED BY:Katie Koster, AQD
PERSONNEL PRESENT: Gary Giacomantonio (General Supervisor Building Services), Lori Brinkman and Rob Frew (Ford EQO)
FACILITY PHONE NUMBER:(586) 752-8425 (Lori Brinkman)

****

FACILITY BACKGROUND

The Henry Ford II World Center Complex is comprised of the World Headquarters Building (WHQ), Ford Motor Credit (FMC), and various other small buildings. Henry Ford II World Center Complex is bound by Southfield Freeway, Michigan Avenue, Mercury Drive, and Hubbard Drive.

Note, DTE Energy Services (DTE) owns and operates four diesel fired generators on site which are housed in a separate building located in the parking lot. These generators provide power to the World Center Complex in the event that the supply from the power grid is reduced or eliminated. These generators do not have dedicated on-site staff. DTE staff is present as needed for routine maintenance and troubleshooting. DTE has operational control of these generators based on contract language and as such, is considered a separate source with a separate SRN (N7723) at this time. However, contract language should be reviewed each time the contract is renewed to determine whether ownership status of the generators has changed.

COMPLAINT/COMPLIANCE HISTORY

I last inspected this facility in 2009. At that time, no compliance problems were identified.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING LOVs

None

INSPECTION NARRATIVE

On November 19, 2015, AQD inspector Katie Koster arrived at the Ford World Center Complex at 9:30 a.m. I entered the Ford World Headquarters building and met Mr. Gary Giacomantonio, General Supervisor, Building Services, and Ms. Lori Brinkman and Mr. Rob Frew, Ford EQ Office. We proceeded to the basement to view the boilers.

BOILERS

Boilers are numbered 1 through 4 and are operating under Opt Out Permit 292-98A. The permit was modified to version "A" in 2012 because the company requested fuel usage restrictions to avoid GHG regulations. Boilers 1-3 were installed in 1954 and Boiler 4 was installed in 1968.

At the time of the inspection, the operational status of the boilers was as follows:
Boiler #1: Online (6,000 lb/hr steam; 105 psi at the time of inspection)
Boiler #2: Offline
Boiler #3: Online (6,000 lb/hr steam; 105 psi at the time of inspection)
Boiler #4: Mothballed (all valves and pipes are disconnected, blanks are in the gas lines)
Regarding Boiler #4, it has been offline since 2002 as a cost saving measure due to its size and associated inefficiency. The boiler is still routinely inspected.

A maximum of two boilers are typically run at a time. All boilers exhaust to a common header and travel up to the roof of the 14th floor and exhaust through a vent.

I inquired about the use of fuel oil. All boilers burn natural gas as the primary fuel but Boilers #3 and #4 have the capacity to burn fuel oil as backup. According to Mr. Giacomantonio, the #3 and #4 boilers burned fuel oil for one day. At this time, the facility does not have the ability to use fuel oil as there are no storage tanks or pumps for the storage and delivery of oil to the boilers, and the piping has been capped.

Boiler parameters are monitored electronically in the control room. Some of the alarms that are in place are low water, high pressure, and flame out.

Maintenance records were produced for all 4 boilers and do not appear to indicate a systemic problem with any of the boilers nor any changes that would constitute a modification

EMERGENCY GENERATORS

Three emergency generators maintain minimal lighting in WHQ and FMC, maintain computer services for a short period of time, and maintain operation of the fire pump in the event that the main source is disrupted. These generators are rated at 500kW, 200 kW, and 160 kW. No additional generators have been installed since the last inspection. Mr. Giacomantonio stated that the generators are started about once a week or once a month to ensure operational integrity and to prevent "wet stacking". A description of each generator is below (some information is based on the prior inspection):

(a) 500 kW diesel fired Caterpillar generator located outside of the WHQ building. This generator was installed in 2004 after the Northeast power outage to replace the 300kW generator referenced in the previous inspection report. The 300kW generator was water cooled and failed to operate when the water pressure was cut off during the outage. The new generator is air cooled. The unit contains a 500 gallon diesel tank underneath it. The hour clock indicated 220 hours since installation; the clock was at 112 hours during the last inspection.

(b) 160 kW diesel fired Caterpillar generator located in the basement of Ford Motor Credit. This generator is water cooled and used to run the fire pump. This generator is supposed to be fired for one half hour every Sunday and has an aboveground 250 gallon diesel tank next to it. It is approximately 25 years old. The hour meter reads 419.7 hours since installation. Security services for Ford is now responsible for this pump. They contract with Underwood to service the generator.

(c) 200 kW diesel fired generator located outside of the Ford Motor Credit building in an enclosure. This air cooled generator is the "life safety" generator which maintains stairwell and exit sign lighting in the event of an emergency. Contains a 400 gallon diesel tank. This unit is approximately 25 years old and the hour meter indicated 326.2 hours since installation.

All units are exempt per R285(g); internal combustion engines with a heat input less than 10 MMBtu/hr, which correlates to a threshold of 970 kW (assuming generator efficiency of 33% from AP-42 Section 3.3). See calculations in facility manila file (2002 inspection report, A-WC-00469).

No underground storage tanks are on site.

FACILITY PTE

Current PTE
In 2012, a revised permit (292-98A) was issued. It contains a new flexgroup, FGFACILITY, which has a facility wide limit of 89 tpy of NOx emissions (as well as other limits). This limit now includes the emergency generators and any other NOx generating equipment whereas in the prior permit the NOx limit only applied to the boilers. Based on the facility wide limit, the PTE is below PSD and ROP major source

thresholds. However, this is dependent upon DTE emergency generators remaining a separate source as the NOx limit in that permit (183-00A) is 24.3 tons.

Pre-2012 STATUS
In the 292-98A PTI application, Ford submitted a list of combustion equipment (attached). Calculating the facility wide PTE (pre 2012) using this information results in the following:

1. 89 tons NOx (limit in PTI 292-98 for the boilers)
2. 3.7 tons NOx from the AHU's (8.6 MMBTU/hr / 1,028 MMBTU/MMCF x 100 lb NOx/MMCF x 8,760 hr/yr /2000 lb/ton = 3.7 tpy NOx)
3. 8.8 tons NOx from the three emergency generators (1141 hp*.031 lb NOx/hp*hr * 500 hr/yr/2000 lb/ton = 8.8 tpy NOx)

Total PTE = 101.5 tons NOx

This information indicates that the facility was an ROP major source and based on the installation dates of the equipment, Ford should have obtained an ROP/Title V permit in the 2004/2005 time period. I exchanged a series of emails with Mr. Rob Streight, Permit Manager at Ford (attached). He explained that the company submitted the incorrect information in the permit application and that the Ford WHQ emergency generator was really 400 hP instead of 670 (500kW). I asked for supporting information and he provided a spreadsheet that he claimed is the "official" record maintained by the facility. Using 400hP results in the following PTE (pre 2012):

1. 89 tons NOx (limit in PTI 292-98 for the boilers)
2. 3.7 tons NOx from the AHU's (8.6 MMBTU/hr / 1,028 MMBTU/MMCF x 100 lb NOx/MMCF x 8,760 hr/yr /2000 lb/ton = 3.7 tpy NOx)
3. 6.8 tons NOx from the three emergency generators (871 hp*.031 lb NOx/hp*hr * 500 hr/yr/2000 lb/ton = 8.8 tpy NOx)

Total PTE = 99.5 tons NOx

At this time, it is unclear why the facility states in the attached information that the correct generator size information was unavailable at the time of the permit application (292-98A) as it has been installed since 2004. However, facility claims that the size was visually verified to be 400 hp as part of the RICE MACT compliance efforts which is indicated in the spreadsheet provided.

APPLICABLE RULES/PERMIT CONDITIONS

PTI 292-98A was issued in May 2012. Conditions are summarized below. The cover letter states that PTI 292-98 was voided and that the new permit contains limits on CO, NOx, and SO2, and greenhouse gases to opt out of the ROP program. Permit conditions have been paraphrased for brevity.
FGBOILERS

S.C I.1, 2, and 3 Emission Limits – IN COMPLIANCE. Hourly limits for CO, NOx, and SO2. These are the same limits as the prior permit. Pounds per hour limits can only be determined through stack testing. Compliance is presumed based on maximum heat inputs and AP-42 emission factors for natural gas. No fuel oil has been fired in the boilers since the prior inspection.

S.C. V.1 Testing – NOT APPLICABLE. Testing may be required if requested by AQD. Testing is not necessary at this time.

FGFACLITY

S.C. I.1,2,3,&4 Emission Limits – IN COMPLIANCE. CO, NOx, and SO2 are each limited to 89 tpy on a 12 month rolling time period; CO2e is limited to 78,000 tpy on a 12 month rolling time period. Based on the records submitted, highest 12 month rolling emissions since January 2012 were 7.49 tons of CO, 8.3 tons NOX, .05 tons SO2, 10,029 CO2e. Records are attached.
S.C. II.1 – NOT APPLICABLE. Natural gas shall not exceed 1,250 MMCF per year based on a 12 month rolling time period when it is the only fuel used for FGFACILITY. Since this limit now applies to FGFACILITY (as opposed to just the boilers) and fuel oil will be used within a 12 month period due to routine startup of the generators, this limit is not applicable.
S.C. II.2 – IN COMPLIANCE. When fuel oil and natural gas are used, the following limits apply on a 12 month rolling time period:

a. 1,150 MMCF natural gas

b. 1 MM gallons fuel oil

Based on attached fuel usage records, 798 gallons of diesel oil is the highest 12 month rolling usage and 178.43 MMCF natural gas is the highest 12 month rolling usage since January 2012.
S.C. III.1 – IN COMPLIANCE. Sulfur content of fuel oil shall not exceed 0.3% by weight. Attached documentation shows maximum sulfur content is 15 ppm which is .0015% by weight.
S.C. VI.1 IN COMPLIANCE. Shall keep emission records in a satisfactory manner for CO, NOx, SO2, and CO2e. Records submitted are attached and are kept in a satisfactory manner.
S.C. VI.2 – IN COMPLIANCE. See attached record that accompanied the most recent shipment for documentation of sulfur content in fuel.
S.C VI.3 – IN COMPLIANCE. Fuel usage records are attached.
S.C. VI.4 – IN COMPLIANCE. Records are maintained in an acceptable format.

Additional Permits – A check of permit cards indicates that there are no outstanding permits that need to be voided.

NSPS

NSPS Dc – Standards of Performance for Small Industrial Commercial Institutional Steam Generating Unit. 60.40c (a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

While the boilers meet the size criteria, they were installed before 1989 and have not been modified. As such, this NSPS does not apply.

NESHAP/MACT

NESHAP ZZZZ (RICE MACT) – Three emergency generators are subject to this regulation. They are considered existing stationary RICE as construction was commenced before 2006 and there are at an area source of HAP's. No notification is required because these are existing emergency RICE 63.6645(a)(5). No reports are required by Table 7 for emergency RICE. However, records are required in 63.6655 (and Table 2d) to demonstrate that oil and filter are changed every 500 hours or annually, air cleaner is inspected every 1000 hours or annually, and all hoses and belts are inspected every 500 hours or annually. Also, hours of operation must be logged to ensure they meet the criteria for an emergency generator. Information for the last year has been provided and is attached.

Exemptions

The three emergency generators are exempt per 285(g); internal combustion engines less than 10MMBTU/hr.

The MAERS report contains EUMISCNGHeaters that represents miscellaneous natural gas building heat with a total design capacity of 10 MMBTU/hr. These units are exempt per Rule 282(b)(i).

A photo processing is laboratory in the basement of the WHQ building. During the previous inspection, only the following services were still provided:

- Autopan RA-4 paper processor used to develop color photographic prints
- Autopan Black and White paper processor used to develop black and white photographic prints

These operations appear to be exempt per R285(l)(vii)(D).

DTE GENERATORS

I requested latest contract language to ensure DTE emergency generators were still a separate stationary source. Pertinent contract language appears similar to prior versions which were sufficient to determine that the generators were being operated as a separate stationary source.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

N/A. All lots are paved.

MAERS REPORT REVIEW

2014 MAERS submission was received with no errors. I reviewed the MAERS as part of this inspection. Annual emissions for 2014 are very close to emission reported in the attachments. As facility is very far under the emission limits, I am accepting a deviation of less than a ton in the 2014 MAERS emissions versus the December 2014 12 month rolling emission record.

Regarding the exempt air handling units, it appears these units were added to the facility MAERS report in 2013 (for the 2012 reporting year). This would be appropriate since the units became part of an Opt Out Permit as they are included in FGFACILITY in PTI 292-98A. Prior to the issuance of PTI 292-98A, the units most likely did not have a throughput greater than 50MM cubic feet of natural gas (2014 throughput was 6MM) and were therefore exempt from reporting requirements.

FINAL COMPLIANCE DETERMINATION

At the time of inspection, Ford World Headquarters appears to be operating in compliance with Permit 292-98A and state and federal regulations.

NAME Katie Kati DATE 1/12/16 SUPERVISOR W.M