

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

M003744208

FACILITY: MERCY HEALTH		SRN / ID: M0037
LOCATION: 1500 E SHERMAN BLVD, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Jerry Booth , OCE Leader		ACTIVITY DATE: 04/12/2018
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY '18 on-site inspection to determine the facility's compliance status with PTI No. 20-06 and other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

AQD staff, Chris Robinson (CR) conducted a scheduled on-site, unannounced inspection of Mercy Health (Mercy) on April 12, 2018, to determine compliance with Permit to Install (PTI) number 20-06 and any other applicable air rules and regulations. Mercy is located at 1500 Sherman Boulevard in Muskegon, Michigan. CR met with Mr. Jerry Booth, OCE Leader, at approximately 13:20 presenting proper AQD credentials. CR informed Mr. Booth of AQD's intent to conduct an inspection of the facility.

**Facility Description**

Mercy is currently undergoing a large expansion and renovations of the existing facility which includes the installation of several new boilers, non-ethylene sterilizers, and four (4) emergency generators, which are discussed further below. The primary (EU-PRIMARYBOILER) and standby (EU-STANDBYBOILER) boilers were both operating during this inspection. No odors or visible emissions were observed.

Mercy is a medical facility in Muskegon, MI, operating under one active Permit to Install (PTI) number 20-06 issued on April 5, 2006 for two natural gas fired boilers with diesel fuel backup.

Emission Unit ID	Emission Unit Description
EU-PRIMARYBOILER	Johnston "509 Series" Model PFTA-800-4 Package Fire Tube Steam Generator Natural Gas (primary)/#2 Diesel Fuel Fired 32.378 MMBtu/Hr Heat Input Installed in 2006
EU-STANDBYBOILER	Johnston 534ACG Fire Tube Steam Generator Natural Gas (primary)/#2 Diesel Fuel Fired 26.8 MMBtu/Hr Heat Input Installed in 1971

**Compliance Evaluation**

**PERMIT TO INSTALL (PTI) No. 20-06**

The heat input for EU-PRIMARYBOILER is between 10-100 MMBTU/hr (32.378) and was installed after June 9, 1989 (2006), therefore subject to New Source Performance Standards (NSPS) for *Small Industrial-Commercial-Institutional Steam Generating Units* (40CFR Part 60 Subpart Dc), requiring Mercy to submit an initial notification, conduct an opacity performance test, maintain records of fuel usage, fuel supplier certification, and report to MAERS. Mercy appears to be in compliance with these requirements. An initial notification was submitted and received by the AQD on May 15, 2018 and Mercy submitted their 2017 MAERS report on time and complete. The remaining NSPS Subpart Dc requirements are addressed in the PTI and discussed below.

**- Visible Emission Limits / Material Usage Limits & Monitoring**

EU-PRIMARYBOILER is subject to an emission limit of 20% opacity, per Special Condition (SC) 1.1 of the permit and NSPS Subpart Dc, when firing fuel oil. As noted above no visible emissions were observed during this inspection, however, this boiler was operating on natural gas. Diesel fuel is stored in a 10,000-gallon UST. Mr. Booth provided a Safety Data Sheet (SDS), which is included in **Attachment A** from their fuel supplier (Wesco) indicating that the fuel used by Mercy is No. 2 Ultra Low Sulfur Diesel (ULSD). ULSD sulfur diesel contains 15ppm sulfur which is less than the 0.2% sulfur by weight limit specified in SC 1.2 of the PTI. A device that continuously monitors fuel level in the diesel UST is installed and maintained. Natural gas usage is monitored by the building's fuel flow meter. Fuel usage to each boiler is calculated based on diesel tank fuel levels and natural gas meter readings collected daily. Attached is an example of Mercy's daily "Boiler, Electrical & Mechanical Rounds" form provided by Mr. Booth.

**- Testing**

Mercy is required by SC 1.3 of the PTI to conduct a visible emissions evaluation for EU-PRIMARYBOILER while firing fuel oil. Based on the site file, this was conducted on November 8, 2006. Results indicated zero percent opacity while EU-PRIMARYBOILER was operating in a "high-firing mode".

**- Recordkeeping/Reporting/Notification & Stack Vent Restrictions**

Mr. Booth provided fuel records which are attached in **Attachment B**. Stack vent dimensions were not explicitly measured during this inspection. However, height and dimensions appeared to meet the requirements specified in SC 1.10a and 1.10b of the PTI.

**Note:** The existing boilers (EU-PRIMARYBOILER & EU-STANDBYBOILER) appear to be subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for "*Industrial, Commercial, and Institutional Boilers Area Sources*" (40CFR Part 63 Subpart JJJJJJ). Although Mercy must comply with these requirements, at this time, the AQD does not have delegated authority for this Standard.

**Exemptions**

**- Sterilizers**

Mercy Health has three (3) existing electric steam sterilizers and one (1) existing electric hydrogen peroxide flash sterilizer. Discussions with Mr. Booth indicated that Mercy intends to install two (2) additional electric hydrogen peroxide sterilizers and nine (9) electric steam sterilizers as part of the expansion. All of the sterilizers appear to be exempt from permitting under Rule 281(2)(i) for "*Sterilization equipment processing mercury-free materials at medical and pharmaceutical facilities using steam, hydrogen peroxide, peracetic acid, or a combination thereof*". However, the only emissions generated by the steam sterilizers is water (steam), which is not an emission of concern.

There are no ethylene sterilizers on-site. Therefore, Mercy does not appear to be subject to the NESHAPs (40 CFR Part 63 Subpart O) for Commercial Sterilizers.

**- New Boilers**

Mercy will be installing three (3) additional natural gas-fired only boilers, each one with a max input of 6,000 MBH. Mr. Booth provided a copy of the boiler nameplate, which is included in **Attachment C**. These boilers appear to be exempt per Rule 282(2)(b)(i) for fuel burning equipment used for indirect heating with a rated capacity of not more than 50 MMBtus/hr.

$$1 \text{ MBH} = 1,000 \text{ MMBtus}$$

$$6,000 \text{ MBH} \times 1,000 \text{ Btus} = 6 \text{ MMBtus/Hr}$$

These boilers are rated for less than 10 MMBTU/hr (~6 MMBtus/hr) each, therefore do not appear to be subject to NSPS Subpart Dc requirements. However, the boilers may be subject to NESHAP 40 CFR Part 63 Subpart JJJJJJ for "*industrial, commercial, and institutional boilers area sources*". Although Mercy must comply with these requirements, at this time, the AQD does not have delegated authority for this standard.

**- Emergency Generators**

Mercy installed four (4) new identical 1,502 hp Caterpillar Emergency Generators in 2016. Rule 285(2)(g) exempts internal combustion engines with a maximum heat rating of less than 10 MMBtu's/hr, from permitting. The emergency generators appear to meet this requirement.

The generators appear to be subject to the NESHAP (40 CFR Part 63 Subpart ZZZZ) for "*Stationary Reciprocating Internal Combustion Engines*" (RICE MACT) which requires compliance with the NSPS (40 CFR Part 60 Subpart IIII) for "*Stationary Compression Ignition Internal Combustion Engines*". The generators are required to meet NOx, NMHC, CO and PM emission standards either by testing or being EPA "Certified". Mr. Booth provided a Certificate of Conformity and manufacturer performance data, which is included. A maximum fuel sulfur content requirement of 1,000 ppm must also be met. Mr. Booth provided an SDS (**Attachment A**) from their diesel fuel supplier (WESCO) indicating that only ULSD is used. ULSD contains a maximum sulfur content of 15ppm.

During discussions with Mr. Booth on 4/27/2018, Mr. Booth indicated that the engines are tested for approximately 100 minutes monthly, which includes a 10-minute cool-down period. This suggests that the engines run for approximately 20-hours annually (100 min/month \* 12 months) for testing. Each engine is equipped with an hour meter. Hours of operation for each engine are listed below.

Engine #	Hours of Operation
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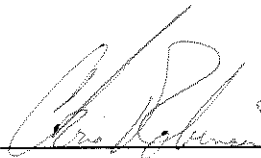
1	89.0
2	89.4
3	89.5
4	89.1

**Compliance Determination**

Based on the observations made at the time of this inspection and a subsequent review of records and equipment specifications, Mercy appears to be in compliance with PTI 20-06 and applicable air rules and regulations.

**Attachments**

- A - Existing Boiler Records
- B - Diesel Fuel Safety Data Sheet
- C - Boiler Nameplate for New Boilers
- D - Emergency Generator Spec Sheet, Certificate of Conformity & Manufacturer Performance Data

NAME 

DATE 5/17/2018

SUPERVISOR 