

K1271
MAWILDEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

K127136388

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| FACILITY: HENRY FORD HOSPITAL | | SRN / ID: K1271 |
| LOCATION: 2799 W GRAND BLVD, DETROIT | | DISTRICT: Detroit |
| CITY: DETROIT | | COUNTY: WAYNE |
| CONTACT: Dan Murakami, Director, Plant Operations | | ACTIVITY DATE: 08/04/2016 |
| STAFF: Stephen Weis | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: Compliance inspection of the Henry Ford Hospital facility in Detroit. The Henry Ford facility is scheduled for inspection in FY 2016. | | |
| RESOLVED COMPLAINTS: | | |

Location:

Henry Ford Hospital
(SRN K1271)
2799 West Grand Boulevard
Detroit 48202

Date of Activity:

Thursday, August 4, 2016

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Dan Murakami, Director, Plant Operations, Henry Ford Hospital
Catherine Semer, Environmental Program Management, Henry Ford Hospital

Purpose of Activity

A self-initiated inspection of the Henry Ford Hospital facility (hereinafter "Henry Ford" or "Hospital") located at 2799 West Grand Boulevard in Detroit was conducted on Thursday, August 4, 2016. The Henry Ford facility was on my list of sources targeted for an inspection during FY 2016. The purpose of this inspection was to determine compliance of operations at the Henry Ford facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), and with applicable Federal standards. The facility is also subject to the terms and conditions of Renewable Operating Permit (ROP) No. MI-ROP-K1271-2012, as well as two Permits to Install (PTI) that were issued in the time since the ROP became effective, PTI Nos. 179-14 and 224-15.

Facility Site Description

The Henry Ford facility on West Grand Boulevard is the original hospital in the Henry Ford Health System. According to the Health System website, the Hospital was founded in 1915 by auto pioneer Henry Ford. The Hospital facility is located on approximately 38 acres of land that is bounded by West Grand Boulevard to the south, Pallister Avenue to the north, the John C. Lodge Freeway/southbound Lodge Service Drive to the east, and Poe Avenue to the west. The area around the Henry Ford facility consists of residential and commercial properties. There are residences located in all directions from the facility, with some located as close as the other side of the facility's bordering streets.

The Henry Ford facility currently consists of 15 buildings, which contain 3.22 million gross square feet of space; this includes all of the floors of the buildings, and the facility's parking garage. The last additions to the buildings involved the construction of the West Pavilion Building in 1998, and the addition of two floors in 2008. The facility is a medical care facility, currently licensed for 803 beds, as well as a medical education and research complex. From an air quality regulatory perspective, all of the buildings and associated operations at the site constitute the Henry Ford Hospital stationary source, which has been assigned the DEQ-AQD State Registration Number (SRN) K1271.

Facility Operations

As mentioned in the last section of this report, the Henry Ford facility is a medical care facility and a medical education and research complex that operates 24 hours per day, 7 days per week. The facility also includes various processes and associated equipment that function to support hospital operations. These processes include equipment that provides steam and backup electrical power to the Hospital, as well an ethylene oxide sterilizer to sterilize medical equipment.

The facility receives electrical power from DTE Energy via two utility feeds that split into six 48 volt lines to feed the facility. Henry Ford currently has nine emergency back-up engine generators at the facility to ensure that the Hospital can function in the case of an interruption of electrical power from the utility.

Henry Ford also operates boilers that supply steam to the facility. The facility used to be connected to the Detroit Thermal steam system, but they constructed a powerhouse on site that was completed and operational in 2008 to generate their own steam on site. I was told that a couple of buildings on site still utilize Detroit Thermal for back up steam needs. The powerhouse includes three boilers that are capable of producing 70,000 pounds of steam per hour.

The Plant Operations Department staffs the powerhouse on a 24 hour per day, 7 day per week basis. There are currently approximately 80 staff in Plant Operations.

From an air quality perspective, the process equipment that is included in the Henry Ford facility's ROP and PTIs includes the following:

- EUENGINE1, EUENGINE2 and EUENGINE3 – three GSPS diesel-fired electrical generators rated at 500 kW. These three generators make up the FGPEAKSHVERS Flexible Group in the ROP. The generators were used for peak shaving, but were eventually used only for emergency backup. These three units were permanently taken out of service in April of 2013. I was told during the site visit that while these units are still located on site, they have not operated in 8 years, and that they have been rendered inoperable.
- An ethylene oxide sterilizer, designated in the ROP as EUTOSTER1. The unit is an AMSCO Model 3017 unit, and it is located on the 5th floor of the main building.
- EUWPAVGEN – a diesel-fired emergency generator rated at 1,500 kW that is located adjacent to the West Pavilion.
- EUBUNITGEN – a diesel-fired generator rated at 300 kW.
- EUENGINE9, EUENGINE10 and EUENGINE11 – These three diesel-fired generators make up the FGENGINE9-10-11 Flexible Group, and are also included in FGENGINE9. Engine 9 is rated at 1,600 kW with a maximum heat input capacity of 15 MMBTU/hour. Engine 10 is rated at 750 kW, and has a maximum heat input capacity of 7 MMBTU/hour. Engine 11 is rated at 900 kW with a maximum heat input capacity of 9 MMBTU/hour.
- EUENGINE12A, EUENGINE12B and EUENGINE14 – All three of these diesel-fired generators are rated at 2,000 kW, and have a maximum heat input capacity of 20 MMBTU/hour. All three generators are included in the FGENGINE9 Flexible Group, and Engines 12B and 14 make up the FGENGINE12B&14 Flexible Group.
- EUENGINE15 – This engine is the newest addition to the facility. The engine is described in PTI No. 179-14 as a 1,474 bhp diesel-fueled engine driving a 1,000 kW emergency generator.
- A natural gas-fired Cleaver Brooks boiler with a maximum heat input capacity of 16.3 MMBTU/hour. This unit is designated as EUCLVBOILER in the ROP. This unit was permanently shut down, and removed from the facility in April of 2013.
- EUBOILER4, EUBOILER5 and EUBOILER6 - Three Nebraska boilers, each having a maximum rated heat input capacity of 88.4 MMBTU/hour. These boilers are capable of firing natural gas and diesel fuel. They make up the FGBOILERS Flexible Group.

There are also a few additional generators and a couple of natural gas-fired boilers at the facility. All of them are small enough in terms of maximum rated heat input capacity to be exempt from DEQ-AQD permitting requirements, and they are old enough to not be subject to Federal regulations.

Inspection Narrative

I arrived at the facility at 1:55pm. I was met in the Hospital's main lobby by Cathy Semer, and we proceeded to Dan Murakami's office.

I briefly explained the purpose of my visit, which was to discuss the permits that are currently in place to regulate air emissions at the Hospital; I wanted to review all of the applicable permit conditions, check how the facility staff demonstrates compliance with the permit conditions, and determine whether the Henry Ford facility is complying with applicable permit requirements and regulations.

I received some background regarding the Henry Ford facility. We discussed the history of the complex, the size of the facility, the number of buildings on the site, and the types of operations that occur to support the operations of the Hospital. We discussed the powerhouse that began operation in 2008, and the types of equipment used to provide steam and back-up power to the Hospital. Dan described the role of the Plant Operations Department at the facility.

We started the permit review by going over the facility's compliance with the ROP. Dan and Cathy told me how the usage and fuel records are kept for the generators and boilers at the facility. We also discussed the preventative maintenance work order system, and how the system is used by Plant Operations staff to track proper operation of the combustion equipment, and to ensure that preventative maintenance checks and tasks are performed and recorded. Dan and Cathy brought in some other staff from Plant Operations to discuss how they track the operation of the engines and boilers. I was told that when the engine that was permitted via PTI No. 224-15 is installed, Engines 9 and 11 will no longer be kept in service.

I went through all of the Emission Unit and Flexible Group tables in the ROP, and we discussed the facility's compliance status with the conditions of the permit. Henry Ford submitted a document to the DEQ-AQD Detroit Office last year titled "Response to March 2015 information request for Henry Ford Hospital Permit # MI-ROP-K1271-2012"; this document was drafted and submitted in response to an information request after a site visit in 2015. I brought a copy of this document with me to this site visit, and we referred to it often as it provides a very current analysis of the Henry Ford facility's status regarding the permit conditions in the ROP and the PTIs. A copy of this document is in the Henry Ford facility file in the AQD-Detroit Office in a manila folder titled "Response to March 2015 information request".

We discussed the operation of the ethylene oxide (EtO) sterilizer. I was told that the sterilizer is equipped with an interlock system that prevents the unit from working if its catalytic oxidizer is not operating according to manufacturer's specifications. I was told how laboratory staff track the usage of the sterilizer, monitoring each running cycle. The sterilizer runs approximately 10 cycles per month, and each cycle lasts 12 hours, including a 1.5 hour exhaust cycle. 100% EtO is used, and one pre-filled cartridge of EtO is used per cycle.

We discussed the engines that are the subject of PTI Nos. 179-14 and 224-15, Engines 15 and 15 respectively. Engine 16 has not yet been installed.

After some closing discussion and a review of action items, I left the facility at 4pm.

Permits/Regulations/Orders/Other

Permits

The Henry Ford facility currently has a ROP and two active DEQ-AQD Permits to Install (PTI). The following is a summary of the facility's compliance with each of these permits.

ROP No. MI-ROP-K1271-2012

This ROP was issued to the Henry Ford facility with an effective date of November 27, 2012. The following paragraphs provide a description of the facility's compliance with the terms and conditions put forth by the ROP, with the headings representing the sections of the ROP.

Source-Wide Conditions

There are no Source-Wide Conditions associated with this permit.

EUENGINE12A

This Emission Unit addresses diesel fired reciprocating engine generator with a nameplate capacity of 2,000 kW.

I. Emission Limits

The permit includes emission limits for NOx, CO, PM and HC; these emission limits are found in 40 CFR Part 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines).

Included in the "Response to March 2015 information request" document that was submitted to DEQ-AQD on behalf of the facility is a copy of an Exhaust Emission Data Sheet for this model of engine, as drafted by the engine manufacturer, Cummins. The Data Sheet includes exhaust emission data that indicates that emissions of NOx, CO, PM and HC are certified to be below the permitted limits, thus **in compliance**.

II. Material Limits

The facility is **in compliance** with conditions II.1 and 2. They keep records of the fuel receipts for deliveries of fuel to the facility. The facility uses ultra-low sulfur diesel fuel.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 5. The facility maintains an Annual Generator Maintenance form and procedure to ensure that maintenance tasks are performed on each generator at the site, and no changes have been made to the recommended operating and maintenance procedures, in compliance with conditions 1, 2 and 4. A copy of the form is included in the "Response to March 2015 information request" document. The facility tracks the hours of operation of this unit, which are well below the allowed hours of operation. The nameplate capacity of the unit is 2,000 kW.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit. The engine is equipped with a non-resettable hour meter (VI.1); a diesel particulate filter is not currently being used (VI.2); the hours of operation are logged (VI.3); records of engine certification and other information from the manufacturer is kept on file, with a copy being included in the "Response to March 2015 information request" (VI.4); fuel records are kept that include information relating to sulfur content (VI.5).

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

IX. Other Requirements

The facility appears to be **in compliance** with the applicable provisions of 40 CFR Part 60 Subpart IIII.

EUTOSTER1

This Emission Unit references an AMSCO Model 3017 ethylene oxide sterilizer that utilizes a catalytic oxidizer for emissions control.

I. Emission Limits

The permit includes emission limits for ethylene oxide (EtO) and hydrochlorofluorocarbons (HCFC). According to facility records, the sterilizer only uses 100% pure EtO, so HCFC emissions are not evaluated as there will not be any emissions of this compound.

The "Response to March 2015 information request" document includes monthly records from 2014 that include EtO usage and emission calculations, and an estimate of hourly emissions; the hourly emission estimate is based on the amount of EtO that is used per cycle (0.22 lbs.), the length of a sterilizer exhaust cycle (1.5 hours), and the EtO control efficiency of the oxidizer. These inputs result in an hourly EtO emission estimate of 0.00014 lbs/hour for the typical sterilizer run cycle, and the monthly totals in 2014 were well below the permitted limits. I

was told that usage of the sterilizer is consistent from year to year. The facility has demonstrated **compliance** with the emission limits.

II. Material Limits

The facility demonstrated compliance with the EtO usage limits in conditions II.1 and 2. The facility states that HCFC is not used in this process.

III. Process/Operational Restrictions

III.1 – **Compliance.** I was told that the sterilizer is equipped with an interlock that does not allow the sterilizer unit to operate if the catalytic oxidizer is not working. The facility is **in compliance** with conditions 1 and 2; only natural gas is fired in the engines, and I was told that the catalytic oxidizers are operated and maintained. The facility maintains the manufacturer's specifications that state that the control efficiency of the oxidizer is 99.9%.

III.2 – **Compliance.** The unit operates as a closed loop, and I was told that the access/charge doors cannot be opened while the sterilizer is operating. According to the "Response to March 2015 information request" document, there is no wastewater discharge from the sterilizer unit.

III.3 – **Compliance.** Henry Ford uses 100% EtO in the sterilizer unit. The EtO comes in individual, pre-filled cartridges. One cartridge is used per operating cycle, and the EtO enters the unit in a closed loop.

IV. Design/Equipment Parameters

The facility is **in compliance** with conditions 1 and 2. Per the specification sheet for the sterilizer, the capacity of the unit is 4.8 cubic feet. As previously mentioned, per the manufacturer's specification sheet, the catalytic oxidizer has a stated control efficiency of at least 99.9%.

V. Testing/Sampling

The testing condition states that testing will be conducted if requested by DEQ-AQD. To this point in time, DEQ-AQD has not requested a compliance test for this emission unit.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit, and based on information in the "Response to March 2015 information request" document. The facility maintains records EtO usage (VI.1), as well as calculations of emissions (VI.2). For VI.4 and 5, facility staff stated that there have not been any malfunctions to report, and no new installations of equipment have occurred. The facility maintains a document titled "Detailed Equipment History Report" that includes a section for the sterilizers that details any malfunctions, and any maintenance that is performed on the sterilizer unit. The facility maintains operating records (VI.6). Regarding condition VI.3, the facility is required to maintain a copy of the manufacturer's specifications on site, which is done, and they are required to "...monitor an operating parameter of the control device...which assures at least 99.9% reduction of ethylene oxide." The condition goes on to state that, for processes controlled by a catalytic oxidizer, the oxidation temperature at the outlet to the catalyst bed should be continuously monitored. In the "Response to March 2015 information request" document, it is stated that DEQ-AQD's EtO General Permit "...changed the format of the special conditions and removed the temperature recording requirement for catalytic oxidizers." The documents go on to state that "Most catalytic oxidizers monitor the catalyst bed temperature and prevent operation or further introduction of EtO if the operating temperature is too low." Facility staff described the interlock system that does not allow the sterilizer to operate if the oxidizer is not functioning properly, and they are under the impression that this is compliant with the requirement. Facility staff are checking how the temperature is monitored, but for the time being, I consider the unit compliant.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

IX. Other Requirements

I was told by Dan that the ambient discharge for the sterilizer unit is at the 19th floor of the Clinic Building. The closest building air intakes are located at the 17th and 5th floors, on the opposite side of the building. The facility appears to be **in compliance** with this requirement.

EUWPAVGEN8

This Emission Unit references the West Pavilion Emergency Diesel Generator identified as HFHS No. 8.

I. Emission Limits

The permit includes an emission limit for SO₂ of 0.33 lb/MMBTU heat input. There is no compliance testing requirement associated with this limit in the ROP, and the monitoring method is a limit on the sulfur in fuel. The facility used ultra-low sulfur diesel in their combustion equipment, which is compliant with the sulfur in fuel limit of condition II.1, which, for the purposes of this permit, is **compliant** with the emission limit.

II. Material Limits

The facility is **in compliance** with conditions II.1 and 2. The facility uses ultra-low sulfur fuel in their combustion equipment, and they keep records of the fuel analyses for each load of fuel delivered (II.1). The facility tracks fuel usage in their combustion equipment. The fuel usage in this generator is well below permitted levels; in this year's MAERS submittal, which summarizes activity in 2015, the total reported diesel usage for engines 8, 9, 10, 11, 12 and 15 was 7,580 gallons. I was told that this engine uses 42 gallons of fuel per hour when operating.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions 1 and 2. The facility tracks fuel usage and keeps a log (III.1), and this same log also contains a check off box to indicate the reason that the engine was fired (e.g. maintenance/readiness checks, power interruption).

VI. Monitoring/Recordkeeping

The facility is **in compliance** with condition VI.1, as they keep records of the sulfur content of the diesel fuel used in the engine.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

EUBUNITGEN

This Emission Unit references the West Pavilion Emergency Diesel Generator identified as HFHS No. 8.

I. Emission Limits

The permit includes emission limits for NO_x and SO₂. The ROP does not include specific compliance testing requirements for these emission limits, instead linking the compliance demonstration for these limits to fuel specifications and content and hours of operation of the engine. In addition, the "Response to March 2015 information request" document includes manufacturer's specification sheets for the engine that lists NO_x lb/hour emissions for various operating loads, all of which are lower than the permitted emission rate of 13.8 lb/hour of NO_x. For the purposes of this permit, the facility appears to be **in compliance** with permitted limits.

II. Material Limits

The facility is **in compliance** with conditions II.1 and 2. They keep records of the fuel receipts for deliveries of fuel to the facility. The facility uses ultra-low sulfur diesel fuel.

III. Process/Operational Restrictions

The facility is **in compliance**, as they track and log operating hours for this engine. I was told that operating hours are typically very low for this unit (it operated 16 hours in 2014).

VI. Monitoring/Recordkeeping

The facility is **in compliance** with condition VI.1, as they keep records of the sulfur content of the diesel fuel used in the engine.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

EUCLVBOILER

This Emission Unit references the operation of a Cleaver Brooks natural gas-fired boiler, rated at 16.3 MMBTU/hour. This unit was permanently shut down, and removed from the facility in April of 2013. This Emission Unit will be removed from the ROP during the next renewal.

FGPEAKSHAVERS

This Flexible Group references three GSPS diesel-fired electrical generators rated at 500 kW. These three units were permanently taken out of service in April of 2013. I was told during the site visit that while these units are still located on site, they have not operated in 8 years, and that they have been rendered inoperable. This Flexible Group will be removed from the ROP during the next renewal.

FGENGINES

This Flexible Group includes the emission units designated as EUENGINE9, EUENGINE10, EUENGINE11, EUENGINE12A, EUENGINE12B and EUENGINE14.

I. Emission Limits

The permit includes an emission limit for NOx from these engines. The facility keeps a log of the usage of these engines that includes the hours that they are used, and the resulting pounds of NOx emissions per month. I did not review the most current log during my site visit, but in 2014, the total emissions logged as being emitted from these engines was 0.98 tons. The facility appears to be **in compliance**.

II. Material Limits

There are no material limits/restrictions in this permit.

III. Process/Operational Restrictions

The facility is **in compliance**, as they track and log operating hours for all of these engines.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with conditions VI.1 through 4; a log is kept of hours of operation for all of the individual engines, and resultant NOx emissions are calculated and logged on a monthly and 12 month basis.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

FGENGINES9-10-11

This Flexible Group includes the emission units designated as EUENGINE9, EUENGINE10 and EUENGINE11, and the permit/regulatory requirements specific to this equipment.

I. Emission Limits

The Flexible Group does not include emission limits for these engines.

II. Material Limits

Compliance. Condition II.1 limits the sulfur content of the diesel fuel that is combusted in these engines. The facility uses ultra-low sulfur diesel fuel, which has a sulfur content of 15ppm.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 6. The facility maintains the manufacturer's written instructions for the engines on site, and they adhere to operating and preventative maintenance procedures in accordance with the manufacturer's guidelines (III.1 and 3). The facility maintains a log of the operating hours of each of the engines (III.2). The facility states that the nameplate capacity of the engines is as specified in conditions II.4 through 6.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions in this section. The engines are equipped with non-resettable hour meters (VI.1), the hours of operation of the engines is logged and recorded (VI.2), and the Hospital maintains records of the sulfur content of the fuel used at the facility (VI.3).

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

FGENGINES12B&14

This Flexible Group includes the emission units designated as EUENGINE12B and EUENGINE14. According to Henry Ford, these two engines have not yet been purchased; thus, they are not on site and operating. These engines, and the permitting requirements associated with them, do not need to be evaluated at this time. The continued inclusion of the engines in the Flexible Group in the ROP will be discussed with Henry Ford during the ROP renewal process.

FGBOILERS

This Flexible Group includes three Nebraska boilers that can fire natural gas and No.2 fuel oil, and are each rated at 88.4 MMBTU/hour.

I. Emission Limits

The permit includes an emission limit for NOx from the three boilers. The facility keeps a log of the usage of the boilers that includes the amount of natural gas and fuel oil used by the boilers, and a calculation of the resulting NOx emissions. The most recent MAERS report shows 20 tons of NOx emitted in 2015, using the MAERS emission factor of 100 lbs/MM cubic feet of natural gas combusted. Performing the calculation using the emission factor that appears in the footnote to this permit condition (which states that "...the NOx limit is based on an emission factor of 0.107 pounds of NOx per MMBTU of fuel oil used and 0.039 pounds of NOx per MMBTU of natural gas used) results in a NOx emission estimate of 8.2 tons for 2015. These estimates are below the permitted limit of 35.4 tons per year. **Compliance.**

II. Material Limits

The facility is **in compliance** with conditions II.1 through 3. As mentioned previously in this report, the facility uses ultra-low sulfur fuel (II.1). Fuel usage is logged and tracked. The most recent MAERS report shows that 401 MMCF of natural gas were used in 2015 (vs. the permit limit of 1,515.48 MMCF), while 1,000 gallons of fuel oil were used (vs. the permit limit of 1,234,000 gallons per year. The boilers are run briefly each month on fuel oil for testing purposes; natural gas is the primary fuel used in the equipment.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions in this section. Henry Ford logs and records the amount of fuel used in the boilers on a monthly basis (VI.1 and 3); calculations of the NOx emissions from the use of the boilers is logged and tracked (VI.2); the facility maintains fuel oil certifications for each load of fuel that is delivered to the facility (VI.4).

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

Permit to Install No. 179-14

This permit addresses the installation and operation of an engine designated as EUENGINE15. The engine is described as a 1,474 bhp diesel-fueled engine driving a 1,000 kW emergency generator. The engine is a 2014 model year with a displacement of 2.7 liters per cylinder.

The following provides a description of Henry Ford's compliance with the Special Conditions put forth by Permit to Install No. 179-14.

I. Emission Limits

The permit includes emission limits for NMHC + NOx, CO and PM. These limits are found in 40 CFR Part 60, Subpart IIII. There is no specific compliance testing requirement for the engine. The permit review notes for the PTI, as drafted by DEQ-AQD Permit Unit staff, state that the engine is EPA certified for emergency use; this serves to demonstrate **compliance** with the emission requirements of Subpart IIII.

II. Material Limits

The facility is **in compliance** with condition II.1, as Henry Ford uses ultra-low sulfur diesel fuel in their combustion equipment, as the diesel fuel used in the engine meets the requirements in conditions II.1 and 2.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 4. The facility logs the hours of operation of the engine, and they are checked against the hour limits in the permit, and in Subpart IIII (III.1 and 2). Henry Ford states that the manufacturer's operating instructions for this engine are checked and maintained as part of the facility's generator maintenance program (III.3). The engine has not operated in a non-certified manner (III.4).

IV. Design/Equipment Parameters

The engine is equipped with a non-resettable hour meter (**in compliance** with IV.1), and according to the facility, it is not exceeding the listed nameplate capacity (IV.2).

V. Testing/Sampling

This section requires that an initial performance test be conducted within one year of startup of the engine unless the engines have been certified by the manufacturer. These engines are certified, so the test should not be required. **Compliance.**

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions in this section. Required records, such as the manufacturer information and certification, hours of operation of the engine, and fuel certification records, are being kept.

VII. Reporting

The facility submitted all required certifications and notifications. The notifications were submitted via correspondence dated June 28, 2015. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission unit was permitted.

IX. Other Requirements

The facility appears to be **complying** with the applicable provisions of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ.

Permit to Install No. 224-15

This permit addresses the installation and operation of an engine designated as EUENGINE16. The engine is described as a 2,937 bhp diesel-fueled engine driving a 2,000 kW emergency generator. The engine is a 2015 model year with a displacement of 4.31 liters per cylinder.

This engine had not yet been installed at the time of my site visit, but facility staff informed me that the engine was installed and went on line on Saturday, September 24, 2016. Based on the permit review, the engine looks to be a certified engine, so it should be compliant with the emission limits in this permit. Assuming that it is installed, this engine will be evaluated in a future site visit.

Compliance Determination

Based upon the results of the August 4, 2016 site visit and review of the facility's compliance records, the Henry Ford Hospital facility in Detroit appears to be **in compliance** with applicable rules and regulations, including with the terms and conditions of ROP No. MI-ROP-K1271-2012, and Permit to Install Nos. 179-14. PTI No. 224-15 was not evaluated as the equipment (Engine 16) that is the subject of the permit was not installed at the time of my site visit and evaluation.

Attachments to report: Information about the EtO sterilizer, including usage and emission records from December 2014 as an example; a print out of the Annual Generator Maintenance procedures; a print out of the Emission Tracking Input records for December 2014, as an example of how fuel usage and emissions are tracked for the boiler and engines at the facility.

NAME Steve Wicks DATE 9/26/16 SUPERVISOR JK