

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

D359839521

FACILITY: Hurley Medical Center		SRN / ID: D3598
LOCATION: 1 Hurley Plaza, FLINT		DISTRICT: Lansing
CITY: FLINT		COUNTY: GENESEE
CONTACT: Mike Mayer, Senior Facilities Management Supervisor		ACTIVITY DATE: 04/25/2017
STAFF: Daniel McGeen	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Partial Compliance Evaluation (PCE) activities, conducted as part of a Full Compliance Evaluation (FCE): 1. scheduled inspection and 2. review of facility recordkeeping,		
RESOLVED COMPLAINTS:		

On 4/25/2017, the Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) conducted a scheduled inspection of Hurley Medical Center.

Environmental contacts:

Michael Mayer, Senior Facilities Management Supervisor; 810-262-6178; [mikemayer@hurleymc.com](mailto:mikemayer@hurleymc.com)

Nickolas Hauxwell, Manager of Sterile Services; 810-262-3131; [NHauxwe1@hurleymc.com](mailto:NHauxwe1@hurleymc.com)

Facility description:

This facility is a hospital, equipped with boilers, emergency generators, two Ethylene Oxide (EtO) sterilizers, and a number of hydrogen peroxide sterilizers.

Emission units:

Emission unit ID	Emission unit description	Date of install.	Permit to Install or exemption	Federal regulation, if applicable	Sthatus
EUBOILER#1	Wickes Boiler #1, 850 hp; 28.6 MMBtu/hr; nat. gas-fueled	1953	Grandfathered	NA	Compliance
EUBOILER#2	Wickes boiler #2, 850 hp; 28.6 MMBtu/hr; nat. gas-fueled	1953	Grandfathered	NA	Compliance
EUBOILER#3	Wickes Boiler#3, 850 h;, 28.6 MMBtu/hr; nat. gas- or oil-fueled	1958	PTI No. 47-07B	NA	
EUBOILER#4	Kewanee Boiler#4; 500 hp; 16.8 MMBtu/hr; nat. gas- or oil-fueled	1978	PTI No. 47-07B	NA	
EUGENERATOR#1	Emergency Generator #1 ; diesel- fueled, 750 kW; 8.5 MMBtu/hr	1974	PTI No. 47-07B	NA	
EUGENERATOR#2	Emergency Generator #2; diesel- fueled, 750 kW; 8.5 MMBtu/hr	1974	PTI No. 47-07B	NA	
EUGENERATOR#3	Emergency Generator #3; diesel-fueled; 1100 kW; 12.5 MMBtu/hr	1979	PTI No. 47-07B	NA	
EUGENERATOR#4	Emergency Generator #4; diesel-fueled; 500 kW	2011	PTI No. 47-07B	40 CFR Part 60, Subpart III; 40 CFR Part 63, Subpart ZZZZ	
EUGENERATOR#5	Emergency Generator #5; diesel-fueled; 500 kW; 5.7 MMBtu.hr	2013	PTI No. 47-07B	40 CFR Part 60, Subpart III; 40 CFR Part 63, Subpart ZZZZ	
Sterrad Sterilizer	Hydrogen peroxide unit	?	Rule 281(2)(I)	NA	Compliance
EU_EtOSterilizers	2 ethylene oxide sterilization units, with catalytic oxidizer	1999	Gen. PTI No. 469-99 for ETO sterilizers	NA	Compliance

Regulatory overview:

This facility is considered an opt-out source, having Permit to Install (PTI) No. 47-07B, which limits the Potential to Emit (PTE) for sulfur dioxide (SO<sub>2</sub>) to below 100 tons per year (TPY), to keep it from becoming a major source subject to the Renewable Operating Permit program.

Hurley has a general PTI No. 469-99, for their two ETO sterilizers. As of 5/16/2017, the general PTI is no longer an option for new facilities to apply for, but existing general PTIs are still considered valid. The Sterrad sterilizer and other hydrogen peroxide-based sterilizers at the site are exempt from needing an air use permit under Rule 281(h). This facility is not subject to 40 CFR Part 63, Subpart O, *Ethylene Oxide Emission Standards for Sterilization Facilities*, because it is a hospital whose primary purpose is to provide medical services to humans, and is therefore exempted.

Generators 4 and 5 are subject to 40 CFR Part 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines*. Under this regulation, which is also referred to as the RICE (Reciprocating Internal Combustion Engine) MACT (Maximum Achievable Control Technology), generators 4 and 5 are required to comply with New Source Performance Standard (NSPS), 40 CFR Part 60, Subpart IIII, for Stationary Compression Ignition Internal Combustion Engines (ICE).

It is not known if the dual fuel boilers subject to 40 CFR Part 63 Subpart JJJJJJ, *National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*. On 9/8/2017, I e-mailed to the primary environmental contact a link to the DEQ boiler webpage and the DEQ self-navigating boiler quiz, so they can enter data specific to their boilers, and learn if there are any federal requirements which apply to them. I asked that they notify AQD of their findings.

The dual fuel-fired boilers, Nos. 3 and 4, are exempt from 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial- Commercial-Institutional Steam Generating Units*, because they were built prior to the applicability date of 6/9/1989 specified in the regulation.

Fee status:

This facility is not a Category I fee subject source, because it is not a major source for criteria pollutants. It is not a Category II fee-subject source because it is not a major source for Hazardous Air Pollutants (HAPs). It is, however, subject to the NSPS, Subpart IIII for two of the emergency generators, but AQD has typically not considered sources fee-subject where emergency generators would be the only reason. Additionally, it is not Category III fee-subject. However, it is subject to 40 CFR Part 63, Subpart ZZZZ, for two of the emergency generators, but, again, AQD has typically not considered facilities fee-subject where emergency generators would be the only reason. Annually, Hurley Medical submits a report of their air emissions to the Michigan Air Emissions Reporting System (MAERS).

Location:

The hospital is located in the City of Flint, and is surrounded by residential neighborhoods, and some commercial establishments.

Recent history:

On 7/15/2013, the Air Quality Division (AQD) received Permit to Install application no. 47-07B, for the proposed installation of a 500 kilowatt (kW) emergency stand-by generator. The opt-out permit No. 47-07A was revised as No. 47-07B, to address the PTE for the new generator, EUGENERATOR#5.

Arrival:

The DEQ was represented by myself, from AQD, and by Ms. Chunyu Guo, a Student Intern with the DEQ Office of Public Affairs and Outreach, for educational purposes. This was not an unannounced inspection, as Hurley staff may not all be available on a given day. Additionally, AQD guidance to me for

taking Student Interns on inspections is that the inspections should be arranged in advance, so that adequate facility staff are available to safely escort DEQ staff through the site.

We parked along a side street, Prospect Street, at 9:42 AM. Weather conditions were overcast and around 60 degrees F, with winds out of the southeast. No visible emissions were detected from the large brick exhaust stack shared by the hospital's four boilers. No odors were detected.

We walked to the nearby one story brick office building, which is off of Patrick Street, and met with Mr. Randy Scoffied, Lead Plant Operations and Maintenance, and Mr. Kenneth Kominek, Plant Operations and Maintenance. They explained that they would accompany us through the facility and be our contacts for questions on the boilers and generators. I provided my identification/credentials, per AQD procedures. Later during the course of the inspection, we met with Mr. Mike Mayer, Facility Operations Manager.

Mr. Scoffied and Mr. Kominek provided a detailed overview of keeping the hospital boilers maintained and updated. We also discussed the five generators onsite, and were informed that over the next several years, the hospital may install a sixth and seventh generator. I advised that future generators would need to be incorporated into the facility's permit, which is an opt-out permit.

#### Inspection:

It is my understanding that two boilers are typically operated during times of the year when night time temperatures drop below 40 degrees F, and that when night time temperatures are above 50 degrees F, they drop back to one boiler.

#### EUBOILER#1; grandfathered:

Wickes Boiler #1 is fueled only by natural gas, and is rated at 850 horsepower (hp), and 28.6 million Btu/hr (MMBtu/hr). It is grandfathered from the requirement of Rule 201 to obtain a PTI, having been installed in 1953, before the 8/15/1967 effective date of Michigan's administrative rules for air pollution control. This boiler was included in the previous opt-out permit, PTI No. 47-07A, but is not included in No. 47-07B, because it is grandfathered, and the only Rule 205 restriction was that it burn natural gas. The AQD Permit Engineer, Ms. Catherine Asselin, noted in the general comments in her engineering notes that the applicant confirmed that the boiler was incapable of burning any other fuel, so that permit condition was not actually a restriction.

Boiler #1 was not operating today. The natural gas boilers replaced older coal-fired units onsite, we were advised.

#### EUBOILER#2; grandfathered:

Wickes Boiler #2 is fueled only by natural gas, and is rated at 850 hp, and 28.6 million Btu/hr. It is grandfathered from the requirement of Rule 201 to obtain a PTI, having been installed in 1953. It also was included in the previous opt-out permit, PTI No. 47-07A, but is not included in No. 47-07B, because it is grandfathered and the only Rule 205 restriction was that it burn natural gas. AQD's C. Asselin noted in the general comments in her engineering notes that the applicant confirmed that the boiler was incapable of burning any other fuel, so that permit condition was not actually a restriction.

Boiler #2 was not operating today.

#### EUBOILER#3, PTI No. 47-07B:

Wickes Boiler #3 can be fueled by both natural gas and #6 fuel oil, and is rated at 850 hp, and 28.6 million Btu/hr. It was installed in 1958.

Boilers 3-4 comprise the flexible group FGDUALFUELBOILERS in the PTI, and can burn either natural gas or No. 6 fuel oil. Boilers 3-4 are limited to no more than 672 hours of burning No. 6 fuel oil per 12-

month rolling time period, as determined at the end of each calendar month. It was reported in MAERS that no oil was burned in boiler Nos. 3 and 4 in 2016, complying with this requirement.

Emissions from burning natural gas were reported to MAERS for the reporting group RG\_DUALFUELBIRS, including 2.79 tons of CO and 3.32 tons of NOx, and 0.02 tons of SO2. The emission limits in the PTI are set for the entire facility, FGFACILITY, and were not exceeded.

Boiler #3 was operating, at the time of the inspection. There were no visible emissions from the shared boiler exhaust stack.

Boiler data was collected as follows:

- Boiler pressure from the header for all four boilers: 80 lbs
- Back pressure steam: 15 lbs
- Mott Bldg. steam: 23 lbs
- Kitchen steam: 28 lbs
- L.P. heating: 18 lbs
- Feedwater pressure: 190 lbs
- Economizer temperature: 173 degrees F
- Boiler #3 operating at 26% of firing rate
- Boiler #3 steam pressure: 78 psi
- Stack temperature: 349 degrees F
- Water temperature: 313 degrees F

#### EUBOILER#4, PTI No. 47-07B:

Kewannee Boiler #4 can be fueled by both natural gas and #6 fuel oil, and is rated at 500 hp and 16.8 MMBtu/hr. It was not operating at the time of the inspection. It was explained that this unit is typically run from May to August, instead of the colder months, because it is a smaller unit.

As mentioned above, Boilers 3-4 are limited to no more than 672 hours of burning No. 6 fuel oil per 12-month rolling time period, as determined at the end of each calendar month. As discussed above, it was reported in MAERS that no oil was burned in boiler Nos. 3 and 4 in 2016. We were informed that this boiler last burned fuel oil 8 or 9 years ago, and that fuel oil is harder on the boilers than natural gas is.

Emissions from burning natural gas were reported to MAERS for the reporting group RG\_DUALFUELBIRS, including 2.79 tons of CO, 3.32 tons of NOx, and 0.02 tons of SO2. The emission limits in the PTI are set for the entire facility, FGFACILITY, and were not exceeded.

#### EUGENERATOR#1; PTI No. 47-07B:

Generators 1-3 were installed prior to 6/12/2006, and are classified as existing emergency generators which are not subject to the RICE MACT. Generators 1-3 and Generator 5 are in the Flexible Group FGGENERATORS. They are permitted to only burn #2 fuel oil, or diesel fuel. They are required to keep records of the total number of hours that FGGENERATORS is operated, to demonstrate compliance with PTI No. 47-07B. Please see the section of this report titled "Recordkeeping for PTI No. 47-07B".

Generator #1 was not running, at the time of the inspection. There were no visible emissions from the exhaust outlet. Batteries for this generator were recently replaced, I was informed, and the unit received preventative maintenance and new filters on 3/8/2017. I was shown that it has a brand new radiator.

It was explained that there are weekly, monthly, quarterly, semi-annual, and annual preventative maintenance checks done on the generators.

#### EUGENERATOR#2; PTI No. 47-07B:

Generator No. 2 was not running, at the time of the inspection. There were no visible emissions from the

exhaust outlet. I was shown that this unit has a brand new radiator.

They are required to keep records of the total number of hours that FGGENERATORS is operated, to demonstrate compliance with PTI No. 47-07B. Please see the section of this report titled "Recordkeeping for PTI No. 47-07B".

EUGENERATOR#3; PTI No. 47-07B:

Generator No. 3 was not running, at the time of the inspection. There were no visible emissions from the exhaust outlet. This unit also has a brand new radiator.

They are required to keep records of the total number of hours that FGGENERATORS is operated, to demonstrate compliance with PTI No. 47-07B. Please see the section of this report titled "Recordkeeping for PTI No. 47-07B".

EUGENERATOR#4; PTI No. 47-07B, 40 CFR Part 60, Subpart IIII; 40 CFR Part 60, Subpart ZZZZ:

Generator #4 was included in the previous opt-out permit, No. 47-07A, and was manufactured in 2011. It was not running at the time of the inspection. There were no visible emissions. The hour meter on the unit showed a cumulative total of 91 hours and 33 minutes total, I was advised, with 66 hours and 38 minutes of that "loaded" and 22 hours and 32 minutes of that "unloaded."

EUGENERATOR#4 is not part of the flexible group FGGENERATORS.

EUGENERATOR#4 is subject to 40 CFR Part 60, Subpart IIII, but because NSR was not conducted, the NSPS requirements were not incorporated into PTI No. 47-07B. On 9/19/2017, some time after the inspection, I sent Mr. Mayer a link to the EPA self-navigating RICE quiz, so that they may determine for themselves what requirements apply to this unit under IIII. I will request that they share their findings with AQD. EUGENERATOR#4 is also subject to 40 CFR Part 63, Subpart ZZZZ, also known as the RICE MACT. The unit's compliance requirements under ZZZZ are to comply with IIII, according to the engineering notes by AQD Permit Engineer C. Asselin.

EUGENERATOR#5; PTI No. 47-07B; 40 CFR Part 60, Subpart IIII; 40 CFR Part 60, Subpart ZZZZ:

EUGENERATOR#5 was manufactured in 2013. It was not running at the time of the inspection. There were no visible emissions. I was advised that the total cumulative run time on the hour meter for the unit is 59 hours and 9 minutes, with 36 hours and 20 minutes of that as "loaded" and 21 hours and 27 minutes of that as "unloaded."

They are required to keep records of the total number of hours that FGGENERATORS is operated, to demonstrate compliance with PTI No. 47-07B. Please see the section of this report titled "Recordkeeping for PTI No. 47-07B".

As AQD Permit Engineer C. Asselin noted in the general comments in her evaluation notes, the size of this engine qualified it for exemption from needing a PTI, but it needed to be included in the opt-out permit No. 47-07B, because of its PTE. It is my understanding that the review of this generator only focused on federal enforceability for the opt-out permit, rather than New Source Review (NSR), as it met the exemption criteria. Only permit conditions needed for Rule 205 were evaluated.

EUGENERATOR#5 is subject to 40 CFR Part 60, Subpart IIII, but because NSR was not conducted, the NSPS requirements were not incorporated into PTI No. 47-07B, per C. Asselin's notes. On 9/19/2017, I sent Mr. Mayer a link to the EPA self-navigating RICE quiz, so that they may determine for themselves what requirements apply to this unit under IIII. I will request that they share their findings with AQD. EUGENERATOR #5 is also subject to 40 CFR Part 63, Subpart ZZZZ, also known as the RICE MACT. The compliance requirements under ZZZZ are to comply with IIII.

Recordkeeping for PTI No. 47-07B:

For opt-out permit No. 47-07B, the facility must keep records of hours of operation for all emission units that have hours restrictions. This includes FGDUALFUELBOILERS and FGGENERATORS. They must also track emissions of carbon monoxide (CO), nitrogen oxides (NOx), and sulfur dioxide (SO2), over a 12-month rolling average.

Pursuant to my 9/6/2017 e-mail requesting copies of boiler recordkeeping, Mr. Mayer e-mailed me records for the boilers and generators (attached for reference) on 9/12/2017.

FGDUALFUELBOILERS are limited to no more than 672 hours of burning No. 6 fuel oil per 12-month rolling time period. This flexible group, consisting of boilers #3 and 4, did not use any No. 6 fuel oil in 2016, as shown in the attached records, and reported in MAERS. Therefore there were zero hours of operation with No. 6 fuel oil.

Special Condition FGFACILITY VI. 1. requires keeping monthly and 12-month rolling time period CO, NOx, and SO2 emission calculation records for FGFACILITY. The records I received included for 2016 and the end of 2015 12-month rolling average emissions for all boilers and generators combined, which represent FGFACILITY. The reported emissions were well below the emission limits for FGFACILITY of 50 TPY CO, 89 TPY NOx, and 12 TPY SO2, indicating compliance.

FGGENERATORS, the flexible group which includes generators 1, 2, 3, and 5, is required to keep records of total hours of operation per month for the flexible group. The records show that they are complying with this requirement. FGGENERATORS is limited to operating no more than 1120 hours total, per 12-month rolling time period, as determined at the end of each calendar month. The attached records show that total hours operated for FGGENERATORS in 2016 were 72.4, well below the permitted limit, indicating compliance. The generators in the flexible group are permitted to burn only diesel fuel (No. 2 fuel oil). The records show that only diesel fuel was burned, complying with this requirement.

Also, the facility reports these emissions to MAERS for the entire source. Please see below. I asked Mr. Mayer, via e-mail, to clarify my understanding of their spreadsheet which provided this data.

#### MAERS reporting for FGFACILITY for 2016 operating year

Pollutant	FGFACILITY PTI limit, in TPY	Source wide 2016 emissions (from MAERS)	Below permitted limit?
CO	50	6.43	Yes
NOx	89	8.14	Yes
SO2	12	0.088	Yes

The MAERS report was reviewed and passed audit on 4/21/2017.

#### Sterrad sterilizer; Rule 281(2)(I):

We met with Ms. Mary Potter, Lead Sterilizer Process Case cart Coordinator, in the sterilization department. It is my understanding that the previous Manager of Sterile Services, Ms. Jill Jackson, has recently taken a different job within the hospital, and the new contact for the sterilization units is Mr. Nickolas Hauxwell. In order to avoid bringing contaminants from the outside world into the sterile processing environment, we donned disposable coveralls and caps, which Hurley staff provided.

We were informed by Ms. Potter that there are two hydrogen peroxide sterilizers here. These can be considered exempt under Rule 281(2)(I). It was explained that these units are used more than the EtO sterilizers. We were told that they have recently purchased medical scopes which can be treated in the hydrogen peroxide sterilizers, whereas previous scopes were not able to be treated in them, and would have to go in an EtO unit.

#### EU EtOSterilizers; General PTI No. 469-99:

The ethylene oxide sterilizers are #11 and 12, we were informed. It was explained that #11 is broken, at present, and has not run since 7/27/2016. They do not presently have a need to use #11, we were told.

Ms. Potter showed us EtO sterilizer #12, which was not running at the time of the inspection. We were told that it ran twice last week. It is my understanding that operating once per week is normal for #12. Ms. Potter showed us one of the pre-filled gas canisters which dispense the right amount of EtO gas inside the sterilizer, at the appropriate time during the operational cycle. She summarized the preconditioning, sterilizing, and aerating parts of the cycle. We were informed that a test is conducted for bacteria, when the sterilization process is completed.

They have two EtO monitors in the sterilizer room, we were shown, and several in the sterile department, to alert staff if there should ever be a leak of EtO.

Recordkeeping for EtO sterilizers under PTI No. 469-99:

PTI No. 469-99 requires records be kept of daily and monthly sterilant usage data, including the amount in lbs per cycle. Also required by the PTI are calculated monthly emissions of EtO. In response to my 9.6.2017 request for copies of EtO recordkeeping, I was sent records on 9/19/2017 (please see attached). They appear to be complying with the requirements to keep records and calculate monthly emissions.

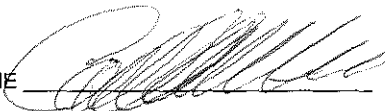
Mr. Myer explained that they have corrected their monthly EtO data and daily/monthly summary tables, following their identification of some errors. The corrected data indicates 0.0085 tons of EtO were used in calendar year 2016, and 0.01694 lbs, or  $8.47 \times 10^{-6}$  tons, were emitted during 2016. This is in contrast to the originally submitted values in the MAERS report for the 2016 operating year, which indicated 0.0054 tons were used, and 0.011 lbs, or  $5.5 \times 10^{-6}$  tons, were emitted.

- PTI 469-99 limits EtO usage to 141.1 lbs/month, or 0.071 tons/month. The month in 2016 with the highest EtO usage was January, where 2.86 lbs of the gas were used. This is far below the monthly limit.
- PTI No. 469-99 limits EtO usage to 6.5 lbs/day. The daily records show that the maximum usage on any day of the 2016 operating year was 0.22 lbs, representing a single sterilization cycle. These daily values are far below the permitted daily limit.
- PTI 469-99 limits EtO emissions 0.141 lbs/month, or 0.0001 tons/month. The month in 2016 with the highest EtO emissions was January, with 0.00286 lbs of EtO emitted. This is far below the monthly limit.

Conclusion:

No instances of noncompliance were observed. We left the site at 12:48 PM.

NAME



DATE

9/19/2017

SUPERVISOR

