

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

N601642764

FACILITY: GENESYS REGIONAL MEDICAL CENTER		SRN / ID: N6016
LOCATION: ONE GENESYS PARKWAY, GRAND BLANC		DISTRICT: Lansing
CITY: GRAND BLANC		COUNTY: GENESEE
CONTACT: Scott Cruzen , Safety Officer		ACTIVITY DATE: 12/05/2017
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Partial compliance inspection as part of an FCE		
RESOLVED COMPLAINTS:		

On December 5, 2017, AQD staff (Julie Brunner) conducted a scheduled inspection of Genesys Regional Medical Center (Genesys). The facility is a medical complex including a hospital, MRI center, and supporting medical offices. The last inspection of this facility was on December 3, 2015.

Contacts:

Bruce Lange, Director of Facilities, 810-606-5475, bruce.lange@medxcelfm.com
Daniel Skopek, Facilities Manager, 810-606-5278, Daniel.skopek@medxcelfm.com
Scott Cruzen, Safety Officer, 810-606-6961, scott.cruzen@medxcelfm.com

Facility Description and Regulatory Overview:

This facility is a medical center complex consisting of the hospital, MRI center in Genesys Health Park, and associated support facilities. With the compliance inspection on 7/14/2011, the state registration numbers (SRN) were consolidated. This means that the health park is considered one stationary source assigned SRN N6016. Previous SRNs used were M0784, N5665, D3674, and D3699 (which is actually a general permit for McLaren Medical Center).

The facility is located in Grand Blanc and is in a large medical center parkway right off of I-75.

Genesys is a minor source with a potential to emit of less than 250 tons per year (tpy) of any regulated air contaminant. The facility is considered minor for emissions of hazardous air pollutants (HAPs) with a potential to emit less than 10 tpy of any single HAP and 25 tpy of aggregate HAPs. The facility has opted out of the Title V - Renewable Operating Permit (ROP) Program. Genesys has one active Permit to Install (PTI): PTI 41-15.

PTI 399-96 was voided on 1/15/16 and was for four (4) ethylene oxide (EtO) sterilizers to sterilize hospital equipment. The facility is in the process of removing the EtO sterilizer equipment from the facility.

PTI 41-15 is considered an opt-out permit which includes facility-wide synthetic minor restrictions so that the facility is not subject to the ROP Program. PTIs 316-95, 317-95, and 318-95 for the fire pump engine, two (2) emergency generators, and three boilers were rolled into PTI 41-15 along with an exempt emergency generator and small boiler located at the MRI center. The exempt units are now technically permitted. The emission units listed on this permit are as follows:

Emission Unit ID - Emission Unit Description

EUBOILER1* - 33 MMBtu/hr natural gas and fuel oil-fired boiler that provides steam to the hospital. (Manf. in 1995)

EUBOILER2* - 33 MMBtu/hr natural gas and fuel oil-fired boiler that provides steam to the hospital. (Manf. in 1995)

EUBOILER3* - 33 MMBtu/hr natural gas and fuel oil fired-boiler that provides steam to the hospital. (Manf. in 1995)

EUBOILER4 - 0.4 MMBtu/hr natural gas-fired boiler (2 boilers are located at the MRI center)

EUEMERGENGINE1 - 1482 hp (9.79 MMBtu/hr) diesel-fired reciprocating internal combustion engine (RICE) driving an emergency generator. (Manf. in 1995)

EUEMERGENGINE2 - 1482 hp (9.79 MMBtu/hr) diesel-fired RICE driving an emergency generator. (Manf. in 1995)

EUEMERGENGINE3 - 300 kW (4.16 MMBtu/hr) diesel-fired RICE driving an emergency generator at the MRI center. (Manf. in 2012)

EUEMERGENGINE4 - 160 hp (1.5 MMBtu/hr) diesel-fired RICE driving an emergency fire pump. (Manf. in 1995)

*EUBOILER1, EUBOILER2, and EUBOILER3 share a common stack, but PTI 41-15 lists three (3) separate stacks for the boilers. The three (3) boilers have always shared a stack as listed on the original permit (PTI 318-95) for the boilers.

Michigan Air Emissions Reporting System (MAERS):

The facility reports to MAERS as an SM Opt-Out, Category III fee subject.

Inspection:

Arrived: 9:30 AM

Departed: 12:15 PM

Weather: 41°F, wind WSW @ 20 MPH, UV 0 Low

No visible emissions (VEs) were observed from any of the facility exhaust stacks upon arrival. No odors were identified surrounding the facility.

A pre-inspection meeting was conducted with Bruce, and Daniel and Scott joined in for various parts of the inspection. The facility operations were discussed. The areas that needed to be inspected were the power plant, MRI center, and the sterilization operations. A facility tour was then taken starting with the power plant.

Power Plant:

The boilers (EUBOILER1, EUBOILER2, and EUBOILER3), two (2) emergency generators (EUEMERGENGINE1 and EUEMERGENGINE2), and a fire pump (EUEMERGENGINE4) are located in the power plant for the medical center. The power plant was built in 1995. The natural gas meter for the facility is located outside the power plant wall and was reading 1,144,064 MCF.

Three (3) identical Johnson Boiler Co. boilers (EUBOILER1, EUBOILER2, and EUBOILER3) are fired mainly on natural gas with fuel oil for backup. All have tags dated 1995. EUBOILER1 has tag number #9328-03, EUBOILER2 has tag number #9328-01, and EUBOILER3 has tag number #9328-02. They produce steam for the hospital and are not used for electrical generation. Only one boiler is operated at a time with one boiler on standby. The boilers are not operated at greater than 70% of capacity. The boilers vent out of one common stack. At the time of inspection, EUBOILER1 was operating at 13% load and EUBOILER2 was on standby. EUBOILER3 was down for maintenance (MRR). New fire tubes were being installed.

The two (2) emergency generators (EUEMERGENGINE1 and EUEMERGENGINE2) are identical 12-cylinder CAT engines model: SR4 manufactured in 1995. EUEMERGENGINE1 (Serial No. 2GM00514) at the time of inspection had 951.1 hours on the operating clock. EUEMERGENGINE2 (Serial No. 2GM00513) at the time of inspection had 905.0 hours on the operating clock. The engines are tested monthly for 1 hour and annually for 24 hours. The maintenance records are kept. The two (2) engines separately exhaust out the roof. Above the roof, the exhaust vents have elbows that direct the gases horizontally. This is to prevent rain from getting into the stack.

The fire pump engine (EUEMERGENGINE4) is a CAT Engine Model: 3208 (Serial No. 90N75392), 8-cylinder engine, manufactured in 1995 with a 150 – 200 gallon fuel oil tank. The operating log is kept in the room with the engine. It is tested weekly for 30 minutes. The hours of operation for the engine were 324.7 hours according to the engine clock. The engine is exhausted horizontally out of an

exterior wall about 8 feet above ground level.

Beside the power plant building are two (2) horizontal fuel oil tanks; a 15,000-gallon tank for the boilers (with 14,450 gallons in the tank) and an 8,000-gallon tank (with 6,750 gallons in the tank) for the emergency generators. Both tanks are clearly marked "LOW SULFUR".

Sterilizers:

The facility is using steam and hydrogen peroxide (H₂O₂) to sterilize equipment. There are four (4) steam sterilizers and four (4) H₂O₂ sterilizers currently used by the facility. Two (2) Amsco 3053 and two (2) Getinge steam sterilizers are used. Steam sterilization takes about 1.5 hours per load for processing time. Two (2) Sterrad 1000S models and two (2) Sterrad NX models are used for H₂O₂ sterilizations. The steam and H₂O₂ sterilizers are exempt per Rule 281(2)(i).

The equipment for two (2) EtO sterilizers is still in place, marked as off-line since 12/11/15. The plan is to remove the equipment by the end of the year.

MRI Center:

At the MRI center are two (2) natural gas-fired boilers. One boiler is on PTI 41-15 and is emission unit EUBOILER4. EUBOILER4 is a 399,000 Btu/hr Raypack water tube boiler with a manufacturer date of 1999. The other boiler is a 186,000 Btu/hr Raypack water tube boiler with a manufacturer date of 2005. This boiler is exempt per Rule 282(2)(b)(i). The MRI center has a separate gas meter which was reading 3,197 ft³ of gas.

EUEMERGENGINE3 sits outside the MRI center on a concrete pad and is self-contained. It is a Cummins Power Generator, Model: DQHAB-10727805 (Serial No. C120311170), manufactured 3/13/2012 with a 300-gallon fuel oil tank. It is tested weekly for 15-20 minutes, once a month for 1-hr, and annually when Cummins brings in a load bank for the test. The hours of operation for the engine were 296.9 hours according to the engine clock. The engine is exhausted vertically out of the small generator container.

Review of Federal Regulations:

The following is a review of federal standards that may apply to the boilers and the diesel fuel-fired emergency engines at the facility. Listed are the applicability and/or definitions from each standard below.

For the dual fuel-fired boilers (EUBOILER1, EUBOILER2, EUBOILER3), they are subject to 40 CFR 60, Subpart Dc and possibly 40 CFR 63, Subpart JJJJJJ if they can't meet the definition of a gas-fired boiler.

40 CFR 60, Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

§60.40c Applicability and delegation of authority.

(a) Except as provided in paragraphs (d), (e), (f), and (g) 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 British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).

§60.42c Standard for sulfur dioxide (SO₂).

(d) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that

contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

The sulfur content of the fuel oil used at the facility is 0.0015 % by weight meeting the requirements of 40 CFR 60, Subpart Dc.

40 CFR 63, Subpart JJJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

§63.11195 Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart...

(e) A gas-fired boiler as defined in this subpart.

§63.11237 What definitions apply to this subpart?

Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

The three (3) dual fuel-fired boilers (EUBOILER1, EUBOILER2, and EUBOILER3) appear to meet the definition of gas-fired boiler. Each boiler operates on fuel oil for 0.5 hour per month for a total of 6 hours per year for reliability testing purposes. The usage of fuel oil is below 48 hours per calendar year, and therefore, the boilers do not appear to be subject to the requirements of 40 CFR 63, Subpart JJJJJJ. Records of fuel oil usage in the boilers will need to be maintained to demonstrate the boilers meet the definition of gas-fired.

For the emergency engines (EUEMERGENGINE1, EUEMERGENGINE2) and the fire pump engine (EUEMERGENGINE4) with manufacture dates of 1995, they are not subject to 40 CFR 60, Subpart IIII. For EUEMERGENGINE3, listed is the applicability below for future reference.

40 CFR 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

§60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator....

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

EUEMERGENGINE3 was manufactured in 2012 and appears subject to the requirements of 40 CFR 60, Subpart IIII.

Also, 40 CFR 63, Subpart ZZZZ does not apply because reciprocating internal combustion engines (RICE) located at an institution are not subject per 40 CFR 63.6585(f).

40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

§63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand....

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in §63.6675, which includes operating according to the provisions specified in §63.6640(f).....

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

Records Review:

The requested records were emailed, and are attached.

For PTI 41-15, records of NOx emissions from the boilers and facility-wide SO₂ emissions on a 12-month rolling time period are required. The records (from Nov-15 to Oct-17) indicate compliance with the permit limits of 60 tpy of NOx and 4.0 tpy of SO₂ on a 12-month rolling time period.

Emissions of NOx for FG DUAL FUEL BOILER

Data (Month-yr)	Natural gas usage (mcf)	Fuel Oil Usage (10 ³ gallon)	NOx Emissions (tons/ month)	NOx Emissions (tons per 12-month)
Nov-16	13211	0.383	0.67	
Dec-16	17946	0.383	0.90	
Jan-17	18719	0.383	0.94	
Feb-17	14749	0.383	0.74	
Mar-17	16136	0.383	0.81	
Apr-17	11557	0.383	0.58	
May-17	11416	0.383	0.58	
Jun-17	10299	0.383	0.52	
Jul-17	10318	0.383	0.52	
Aug-17	10384	0.383	0.52	
Sep-17	10905	0.383	0.55	
Oct-17	13166	0.383	0.66	8.0

* AP-42, Tables 1.4-1 and 1.4-2, NOx emission factor (EF) = 100 lb/10⁶ cf

** AP-42, Table 1.3-1, NOx EF = 24 lb/10³ gal

Facility-wide total emissions of SO₂

Data Month-yr	Natural gas usage (mcf)	Fuel Oil Usage (10 ³ gallon)	SO ₂ Emission (tons/ month)	SO ₂ Emissions (tons per 12-month)
Nov-16	13211	0.383	0.0040	
Dec-16	17946	0.383	0.0054	

Jan-17	18719	0.383	0.0057	
Feb-17	14749	0.383	0.0045	
Mar-17	16136	0.383	0.0049	
Apr-17	11557	0.383	0.0035	
May-17	11416	0.383	0.0035	
Jun-17	10299	0.383	0.0031	
Jul-17	10318	0.383	0.0031	
Aug-17	10384	0.383	0.0032	
Sep-17	10905	0.383	0.0033	
Oct-17	13166	0.383	0.0040	0.05

* AP-42, Table 1.4-2, SO₂ = 0.6 lb/10⁶ cf

** AP-42, Table 1.3-1, SO₂ = 142*0.0015 lb/10³ gal

The Material Safety Data Sheet (MSDS) for Marathon No. 2 Ultra Low Sulfur Diesel indicate that the sulfur content of the fuel oil is 0.0015% by weight in compliance with PTI 41-15, FGFACILITY, Special Condition (SC) III.1. Also, PTI 41-15 was issued June 4, 2015. The facility had the information for the records but had to compile it to fulfill the request for records with this inspection.

Summary:

The facility appeared to be in compliance with all applicable air quality rules and regulations, and PTI 41-15.

NAME Julie P. Green DATE 1/3/18 SUPERVISOR B.M.