

DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

ACTIVITY REPORT: Scheduled Inspection

P0336
FY 2015 Sched. Insp

P033630622

FACILITY: HENRY FORD WEST BLOOMFIELD HOSPITAL	SRN / ID: P0336
LOCATION: 6777 WEST MAPLE ROAD, W BLOOMFIELD	DISTRICT: Southeast Michigan
CITY: W BLOOMFIELD	COUNTY: OAKLAND
CONTACT: Joe Urbas, Engineering Services	ACTIVITY DATE: 08/07/2015
STAFF: Iranna Konanahalli	SOURCE CLASS: SM OPT OUT
COMPLIANCE STATUS: Compliance	
SUBJECT: FY 2015 scheduled inspection of Henry Ford Health System dba Henry Ford West Bloomfield Hospital. SEP LED lights still pending.	
RESOLVED COMPLAINTS:	

P0336 - SAR - 2015 08 07

Henry Ford West Bloomfield Hospital (P0336)
6777 West Maple Road
West Bloomfield, Michigan 48322

Mr. Joe Urbas, Supervisor, Engineering Services
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PTI No. 72-12 (ROP opt-out) for 4 boilers (natural gas with fuel oil backup) and 3 CI RICE emergency generators (15 ppm sulfur ULSD diesel)

VN: AQD the Violation Notice dated May 3, 2012 (Rules 336.1210, 336.2802 [40 CFR, §52.21 PSD], NSPS Dc, NSPS 4I, Rule 336.1201).

CO: AQD and Henry Ford entered into the Consent Order AQD No. 1-2013 effective April 3, 2013 executed by G. Vinson Hellwig, AQD Chief. The Consent Order resolved May 3, 2012, VN: \$35,000.00 settlement and \$313,761.00 Supplemental Environmental Projects (SEP).

Henry Ford's four (4) steam boilers with fuel oil backup are subject to: NSPS Dc, New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc).

Henry Ford's four (4) steam boilers may be subject to: NESHAP / MACT 6J, 40 CFR Part 63, Subpart JJJJJJ / 6J National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers, Page 15554, Federal Register / Vol. 76, No. 54 / Monday, March 21, 2011 / Rules and Regulations / Final rule.

Henry Ford's three (3) emergency generators may be subject to: CI RICE MACT 4Z, Area Source NESHAP / MACT ZZZZ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines / Final rule (Page 3568, Federal Register / Vol. 73, No. 13 / Friday, January 18, 2008 / Rules and Regulations / Final rule).

Henry Ford's one (known as EU-ENGINE1, manufactured in April 2006) of three (3)

emergency generators is subject to: NSPS IIII or 4I, New Source Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 39154 Federal Register / Vol. 71, No. 132 / Tuesday, July 11, 2006 / Rules and Regulations /Final Rule; Page 48072 Federal Register / Vol. 79, No. 158 / Friday, August 15, 2014 / Rules and Regulations / Notice of final decision on reconsideration. Two of three generators (EU-ENGINE2 & EUENGINE3) are not subject to NSPS 4I based upon manufacture date (manufactured on March 28, 2006, before April 1, 2006).

Not subject to: Area Source NESHAP / MACT 5W: Ethylene Oxide (EO) sterilizers are subject to Area Source NESHAP / MACT 5W, National Emission Standards for Hospital Ethylene Oxide Sterilizers, 40 CFR Part 63, Subpart WWWW, Page 73611, Federal Register /Vol. 72, No. 248 / Friday, December 28, 2007 /Rules and Regulations / Final rule. The hospital does not have EO sterilizers.

On January 09, April 03 and August 9, 2015, I conducted a level-2 **scheduled** inspection of Henry Ford Health System dba Henry Ford West Bloomfield Hospital, located at 6777 West Maple Road, West Bloomfield, Michigan 48322. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules; and PTI No. 72-12.

During the inspection, Mr. Joe Urbas (Phone: (248) 661-6419; Cell: (313) 350-0897; Fax: (248) 661-6575; Email: jurbas1@hfhs.org), Supervisor, Engineering Services, Mr. Rey Jaramillo (Cell: 248-721-3263), Facilities Engineer, assisted me.

During FY 2015 inspection, Mr. Charles F. Barker (Phone: (313) 963-8870; Cell: NA; Fax: (313) 963-8876; Email: cfbarker@hands-assoc.com), P.G., of Hands and Associates, Inc., 500 Griswold, Suite 1650, Detroit, Michigan 48226, was not present.

Henry Ford West Bloomfield Hospital is a full service general medical and surgical 190-bed hospital with 24/7 emergency, Vita wellness center, etc. It performs over three thousand in-patient and over six thousand out-patient surgeries.

Process Equipment: Four boilers and three emergency diesel generators

Based upon the FY 2012 inspection, MDEQ-AQD determined that Henry Ford West Bloomfield Hospital. ("Henry Ford") owns, and operates the following four boilers and three emergency diesel generators in violation of state and federal Clean Air laws, regulations and rules:

1. **Boilers:** Three identical high pressure (HP) steam boilers (Clever Brooks CB Packaged Boiler Model CBL-200-1,000-150), known as Boiler Nos. 1 (Serial No. OL104920), 2 (Serial No. OL104921), 3 (Serial No. OL104922) of design capacity 1,000 BHP (41.845 million BTU per hour heat input, 299 gallons of diesel [No. 2 fuel oil] per hour, 140,000 BTU per gallon of diesel, 150 max psi steam) and one high pressure (HP) steam boiler (Clever Brooks CB Packaged Boiler Model 4WI-200-300-150), known as Boiler No. 4 of design capacity 300 BHP (12.555 million BTU per hour heat input, 90 gallons of diesel [No. 2 fuel oil] per hour, 140,000 BTU per gallon of diesel, 150 max psi steam) installed in CY 2008.

2. **Emergency Generators:** Three identical diesel emergency generators (Cummins Power Generation Diesel Generators Model DQK60-G6 / Model DQKC 5762 190, 2,179 kW / 2.179 MW, Manufactured in April 2006, installed in 2008). Based upon documents received by AQD-Permits one (manufactured in April 2006) of three (3) emergency generators is subject to: NSPS IIII. Two (manufacture date March 28, 2006) of three generators are NOT subject to NSPS 4I based upon manufacture date (before April 1, 2006).

The May 3, 2012 violation notice is resolved when Henry Ford obtained PTI No. 72-12 and settled all outstanding issues with consent order AQD No. 1-2013.

1 BHP (Boiler Horse Power) = 33,475 BTU (9.811 kW) = energy needed to evaporate 34.5 pounds (15.65 kg) of water at 212 °F (100 °C) in one hour.

1 W = 1 J/s. 1 HP = 746 Watts (W).

PTI No. 72-12 EMISSION UNIT SUMMARY

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUBOILER1	Natural gas fired firetube boiler with a heat input of 12 million Btu per hour, capable of firing fuel oil. This small boiler is used most of time. During winter time, this small boiler and one of large boilers are used.	March 2009	FGBOILERS
EUBOILER2	Natural gas fired firetube boiler with a heat input of 42 million Btu per hour, capable of firing fuel oil.	March 2009	FGBOILERS
EUBOILER3	Natural gas fired firetube boiler with a heat input of 42 million Btu per hour, capable of firing fuel oil.	March 2009	FGBOILERS
EUBOILER4	Natural gas fired firetube boiler with a heat input of 42 million Btu per hour, capable of firing fuel oil.	March 2009	FGBOILERS
EUENGINE1	Diesel fired emergency generator with a 2 MW output, manufactured on April 3, 2006. NSPS 4I.	2008	NA
EUENGINE2	Diesel fired emergency generator with a 2 MW output, manufactured on March 28, 2006	2008	FGENGINES
EUENGINE3	Diesel fired emergency generator with a 2 MW output, manufactured on March 28, 2006	2008	FGENGINES
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290. While EUENGINE1 is a NSPS 4I CI RICE emergency generator and is not a part of FG-ENGINES, other engines are part of FG-ENGINES.			

PTI No. 72-12 Flexible Group Summary

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGBOILERS	One (1)12 million Btu per hour and three (3) 42 million Btu per hour natural gas fired firetube boilers, capable of firing fuel oil.	EUBOILER1 EUBOILER2 EUBOILER3 EUBOILER4
FGENGINES	Two (2) Diesel fired emergency generators with each having a 2 MW output. Excludes NSPS 4l Engine1	EUENGINE2 EUENGINE3

PTI No. 72-12 emission limits for EUENGINE1 (NSPS 4l)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	6.9 g/hp-hr	Test Protocol*	EUENGINE1	SC VI.2	40 CFR 60.4205
2. HC	0.2 g/hp-hr	Test Protocol*	EUENGINE1	SC VI.2	40 CFR 60.4205
3. CO	0.9 g/hp-hr	Test Protocol*	EUENGINE1	SC VI.2	40 CFR 60.4205
4. PM	0.1 g/hp-hr	Test Protocol*	EUENGINE1	SC VI.2	40 CFR 60.4205
*Test Protocol shall determine averaging time.					
Henry Ford is showing compliance with these limits via US EPA Engine Certificate.					

PTI No. 72-12 emission limits for FG-BOILERS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	36.75 tpy	12-Month rolling time period determine at the end of each calendar month	Collectively, for all units in FGBOILERS	SC V.1 SC VI.2	R 336.1205 (1)(a) R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
2. NOx (natural gas only)	1.48 pph	Test Protocol*	EUBOILER2, EUBOILER3, & EUBOILER4 of FGBOILERS (emissions per unit)	SC V.1 SC VI.2	R 336.1205 (1)(a) R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
3. NOx (diesel fuel only)	5.86 pph	Test Protocol*	EUBOILER2, EUBOILER3, &	SC V.1 SC VI.2	R 336.1205 (1)(a) R 336.2803

			EUBOILER4 of FGBOILERS (emissions per unit)		R 336.2804 40 CFR 52.21 (c) & (d)
4. NOx (natural gas only)	0.42 pph	Test Protocol*	EUBOILER1 of FGBOILERS	SC V.1 SC VI.2	R 336.1205 (1)(a) R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
5. NOx (diesel fuel only)	1.68 pph	Test Protocol*	EUBOILER1 of FGBOILERS	SC V.1 SC VI.2	R 336.1205 (1)(a) R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
6. PM	0.027 lbs/1000 lbs of gas	Test Protocol*	Each unit in FGBOILERS	SC V.1 SC VI.2	R 336.1331 40 CFR 52.21 (c) & (d)
7. PM (natural gas only)	0.42 pph	Test Protocol*	EUBOILER2, EUBOILER3, & EUBOILER4 of FGBOILERS (emissions per unit)	SC V.1 SC VI.2	R 336.1205 (1)(a) 40 CFR 52.21 (c) & (d)
8. PM (diesel fuel only)	1.52 pph	Test Protocol*	EUBOILER2, EUBOILER3, & EUBOILER4 of FGBOILERS (emissions per unit)	SC V.1 SC VI.2	R 336.1205 (1)(a) 40 CFR 52.21 (c) & (d)
9. PM10	1.52 pph	Test Protocol*	EUBOILER2, EUBOILER3, & EUBOILER4 of FGBOILERS (emissions per unit)	SC V.1 SC VI.2	R 336.1205 (1)(a) 40 CFR 52.21 (c) & (d)

*Test Protocol shall determine averaging time. AQD has not requested stack test.

PTI No. 72-12 material limits for FG-BOILERS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Fuel Oil	383,250 gallons per year	12-month rolling time period	EUBOILER1 of FGBOILERS	SC VI.2	R 336.1205 (1)(a) & (3) R 336.1225 40 CFR 52.21 (c) & (d)
2. Fuel Oil	2,620,000 gallons per year	12-month rolling time period	EUBOILER2, EUBOILER3, & EUBOILER4 of FGBOILERS (collectively)	SC VI.2	R 336.1205 (1)(a) & (3) R 336.1225 40 CFR 52.21 (c) & (d)
3. Natural Gas	103.1 MMcft/yr	12-month rolling time period	EUBOILER1 of FGBOILERS	SC VI.2	R 336.1205 (1)(a) & (3) R 336.1225 40 CFR 52.21 (c) & (d)
4. Natural Gas	721.5 MMcft/yr	12-month rolling time period	EUBOILER2, EUBOILER3, & EUBOILER4 of	SC VI.2	R 336.1205 (1)(a) & (3) R 336.1225 40 CFR 52.21 (c) & (d)

		FGBOILERS (collectively)		
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PTI No.: 72-12 emission limits for FG-ENGINES (EUENGINE2, EUENGINE3 manufactured on March 28, 2006). NOT subject to NSPS 4I – EUENGINE is subject to NSPS 4I and listed above separately.

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO _x	6.9 g/hp-hr	Test Protocol*	EUENGINE2, EUENGINE3 Emissions per unit	SC V.1 SC VI.2	R 336.1205(1)(a) R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
2. CO	0.9 g/hp-hr	Test Protocol*	EUENGINE2, EUENGINE3 Emissions per unit	SC V.1 SC VI.2	R 336.1205(1)(a) R 336.2804 40 CFR 52.21 (d)
*Test Protocol shall determine averaging time.					
Test is not done.					
NOT subject to NSPS 4I – EUENGINE is subject to NSPS 4I and listed above separately.					

Four NSPS Dc Boilers with Fuel Oil Back-up (ROP opt-out PTI No.: 72-12, FG-BOILERS).

In March 2009, Henry Ford installed three identical high pressure (HP) steam boilers (Clever Brooks CB Packaged Boiler Model CBL-200-1,000-150), known as Boiler Nos. 1 (Serial No. OL104920), 2 (Serial No. OL104921), 3 (Serial No. OL104922) of design capacity 1,000 BHP (41.845 million BTU per hour heat input, 299 gallons of diesel [No. 2 fuel oil] per hour, 140,000 BTU per gallon of diesel, 150 max psi steam) and one high pressure (HP) steam boiler (Clever Brooks CB Packaged Boiler Model 4WI-200-300-150), known as Boiler No. 4 of design capacity 300 BHP (12.555 million BTU per hour heat input, 90 gallons of diesel [No. 2 fuel oil] per hour, 140,000 BTU per gallon of diesel, 150 max psi steam). All four boilers predominantly burn natural gas with fuel oil as a back-up fuel.

These boilers are subject to federal New Source Performance Standards (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc). Hence, pursuant to Act 451 of 1994, as amended, § 324.5522 (2)(b), Henry Ford is subject to Category II air quality fees. In addition, pursuant to Rule 336.1282(b), the boilers burning sweet natural gas (up to 50 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install). Furthermore, pursuant to Rule 336.1282(b), the fuel oil fired boilers (up to 20 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install) subject to the condition that fuel oil (limited to No.1 and No.2) burnt has sulfur content no greater than 0.40 percent by mass. It may be noted that NSPS Dc allows sulfur content up to 0.50 percent sulfur by mass (0.5 pounds of sulfur dioxide per million BTU heat input).

Because each boiler except one (12.5 MM BTU / hour) has design capacity over 20 million

BTU per hour, three identical boilers (42 MM BTU / hour Clever Brooks CB Packaged Boiler Model CBL-200-1,000-150) are NOT exempt from Rule 336.1201 (Permit-to-Install). One of four boilers (12.5 MM BTU / hour) is exempt from Rule 336.1201 (Permit-to-Install); but the small boiler is also a part of the ROP opt-out permit.

Rule 336.1201 requires an air use permit be obtained prior to installation, construction, reconstruction, relocation, or alteration of any process or process equipment that may be a source of an air contaminant.

Please refer to May 3, 2012 violation notice (VN) for additional details.

NSPS Dc Revisions:

1. 72 FR 32759 = Page 32759 Federal Register / Vol. 72, No. 113 / Wednesday, June 13, 2007 / Rules and Regulations / Final Rule – to add compliance alternatives and to revise certain recordkeeping and reporting requirements.
2. 74 FR 5091 = Page 5091 Federal Register / Vol. 74, No. 17 / Wednesday, January 28, 2009 / Rules and Regulations / Final Rule - to correct technical and editorial errors.

The NSPS revisions simplified the natural gas usage recordkeeping.

PTI No. 72-12, FG-Boilers, I. Emission Limits

Stack test is not performed to determine compliance with the emission limits (e.g. 36.75 tpy NOx for all boilers). However, at this time, Henry Ford is deemed to be in compliance with the emission limit if it complies with the following Material Limits.

PTI No. 72-12, FG-Boilers, II. Material Limits

15 ppm ULSD is used only for boiler testing purposes (PTI No. 72-12, FG-Boilers, II. Material Limits, 1: 383,250 for Boiler 1 and 2,620,000, gallons of fuel oil per year). Natural gas usage is 157 MM SCF per year for all boilers (PTI No. 72-12, FG-Boilers, II. Material Limits, 3: 103 MM SCF per year for Boiler 1 and 4: 721.5 MM SCF per year for Boilers 2, 3 & 4 collectively, natural gas usage). Generally 12 MM BTU / Hr Boiler 1 together with one other Boiler (42 MM BTU / Hr) are operated (PTI No. 72-12, FG-Boilers, II. Material Limits, 5: only two boilers operating any given time). Only pipeline quality natural gas is fired and off-road 15 ppm S ULSD (Diesel) is fired for testing purposes (PTI No. 72-12, FG-Boilers, II. Material Limits, 6: NG & Diesel only and 7: 0.01 %S Diesel).

Natural gas usage: MAERS-2014 Vs actual per FY 2015 inspection

Per December 2, 2014 records, natural gas usage is:

1. Boiler1: 8,120,583 SCF per year
2. Boiler2: 6.187E07 SCF per year
3. Boiler3: 5.1314E07 SCF per year

4. Boiler4: 5.6954E07 SCF per year

Total 156.996983 = 157 MM SCF per year

Per MAERS-2014, 185.22 MM SCF per year

PTI No. 72-12, FG-Boilers, III. Process and Operational Restrictions

The boilers are maintained and operated properly (PTI No. 72-12, FG-Boilers, III. 1)

PTI No. 72-12, FG-Boilers, IV. Design / Equipment Parameters

Maximum design capacity of boilers is 42 MM BTU per hour (PTI No. 72-12, FG-Boilers, IV. 1). Natural gas usage for each boiler is calculated based upon hours of operation and steam production (PTI No. 72-12, FG-Boilers, IV. 2)

PTI No. 72-12, FG-Boilers, V. Testing / Sampling

Testing is not required at this time. (PTI No. 72-12, FG-Boilers, V. 1: testing for NOx, PM, PM10, etc. upon request). AQD may require testing in future.

PTI No. 72-12, FG-Boilers, VI. Monitoring / Record-keeping

NOx emissions calculations are performed for all boilers (PTI No. 72-12, FG-Boilers, VI.1). Both natural gas and 15% sulfur ULSD diesel usage records are kept (PTI No. 72-12, FG-Boilers, VI.2). Hours of operation for each boiler are kept (PTI No. 72-12, FG-Boilers, VI.3). Only off-road 15 ppm S ULSD (Diesel) is purchased from Sunoco Logistics (PTI No. 72-12, FG-Boilers, VI.4). Monthly NOx emission calculations are performed (PTI No. 72-12, FG-Boilers, VI.5).

I asked Henry Ford to submit NSPS Dc Initial Notification (PTI No. 72-12, FG-Boilers, X.1). Also I asked Henry Ford to submit NESHAP / MACT 6J Initial Notification and Notification of Compliance Status (PTI No. 72-12, FG-Boilers, X.2).

NESHAP / MACT 6J Area Boiler MACT (PTI No. 72-12, FG-Boilers, X.2)

As the boilers are designed to be capable of burning liquid fuels such as fuel oil, Henry Ford's boilers are subject to: NESHAP / MACT 6J, 40 CFR Part 63, Subpart JJJJJJ / 6J National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers, Page 15554, Federal Register / Vol. 76, No. 54 / Monday, March 21, 2011 / Rules and Regulations / Final rule. This NESHAP / MACT 6J rule does NOT apply to boilers that burn only gaseous fuels or any solid waste; the Henry Ford's boilers are designed for liquid fuels, such as fuel oil, as well.

AQD has decided not to take delegation of these standards and therefore no attempt has been made to evaluate the Henry Ford's compliance with NESHAP / MACT 6J.

The final rule sets different requirements for boilers based on their size, which is defined as follows:

- ✓ Large area source boilers have a heat input capacity equal to or greater than 10

million British thermal units (Btu) per hour (MMBtu/hr).

- ✓• Small area source boilers have a heat input capacity less than 10 MMBtu/hr.

Henry Ford has four large area source MACT 6J natural gas fired boilers (with fuel oil back-up) based upon design capacity (three 42 MM BTU / hour and one 12.5 MM BTU / hour Clever Brooks CB Packaged Boilers). An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010. Hence Henry Ford's boilers are existing boilers concerning the NESHAP / MACT 6J (installed in March 2009). Existing area source boilers (biomass and oil) are required comply with the following:

1. Tune-up every other year (biennial)
2. No numeric emission limits

A gas-fired boiler that periodically fires liquid fuels during gas curtailment and supply emergencies or for periodic (not to exceed a total of 48 hours during any calendar year) testing is still considered a gas-fired boiler. Henry Ford's boilers may be considered gas fired if records that prove 48-hour-limit are kept. In that case (< 48 hours), the NESHAP / MACT 6J rule does NOT apply to boilers that burn only gaseous fuels or any solid waste (solid waste rules apply). Henry Ford may incorporate, into the existing permit (PTI No. 72-12), an opt-limit for MACT 6J with operating hours limited to 48 hours per year.

The following notification requirements may apply:

1. Initial Notification: no later than September 17, 2011
2. Notification of Compliance Status subject to tune-ups: No later than July 19, 2012

AQD has decided not to take delegation of these standards and therefore no attempt has been made to evaluate the Henry Ford's compliance with NESHAP / MACT 6J.

Henry Ford was subject to 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Federal Register / Vol. 69, No. 176 / Monday, September 13, 2004 / Page 55218 / Rules and Regulations). However, on June 8, 2007, US Court of Appeals had mandated that EPA vacate the Boiler MACT Rule in its entirety; in the interim period, 112(j) MACT permit was required. US EPA re-promulgated the Area Source Boiler MACT as NESHAP / MACT 6J

01/09/12 - The U.S. District Court for the DC Circuit vacated the EPA's May 18, 2011, notice that delayed the effective dates of the Major Source Boiler MACT rule. The effective dates of the final rules published in the Federal Register on March 21, 2011 (76 FR 15608 and 76 FR 15704), are delayed until such time as judicial review is no longer pending or until the EPA completes its reconsideration of the rules, whichever is earlier.

12/23/11 - The EPA published the Major Source Boiler MACT reconsideration proposal (40 CFR 63, subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major

Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, Page 80598 Federal Register / Vol. 76, No. 247 / Friday, December 23, 2011 / Proposed Rules). The EPA will accept comment on the reconsideration proposal until February 21, 2012.

Emergency diesel fuel emergency generators (3)

Three identical diesel emergency generators (Cummins Power Generation Diesel Generators Model DQK60-G6 / Model DQKC 5762 190, 2,179 kW / 2.179 MW, one manufactured on April 3, 2006 (NSPS 4I), and two manufactured on March 28, 2006 (not NSPS 4I), installed in 2008.

For most generators, 1,000 kW (1 MW) generator is equivalent to 8.2 million BTU per hour heat input based upon 60 gallons per hour fuel (diesel) consumption at peak load and 137,000 BTU per gallon of diesel. Therefore, the generators (<10 million BTU per hour heat input internal combustion engines) are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 285(g).

Henry Ford has efficient (44%) generators:

121.5 gallons per hour (138,000 BTU per gallon, 16.767 MM BTU per hour) at full prime. 2.179 MW power (7.441675 MM BTU per hour).

Model: Cummins AQK60-G6 Non-road 1

Type: 4 Cycle 60 °V, 16 Cylinder Diesel

Aspiration: Turbocharged and Low Temperature Aftercooled

Compression Ratio: 14.5:1

Emission Control Device: Turbocharged and Low Temperature Aftercooled

Bore: 6.25 (159 mm)

Stroke: 7.48 inches (190 mm)

Displacement: 3673 cubic inches (60.1 liters)

Exhaust Emissions Data (full prime at 121.5 gallons of ULSD per hour): 0.18 HC, 7.10 NOx as NO2, 1.00 CO, 0.10 PM, 0.57 SO2 and 0.40 Smoke as Bosch. All valued in grams per HP-hour, except smoke in Bosch Number.

On July 11, 2006, EPA promulgated 40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE).

Henry Ford's one (manufactured in April 2006) of three (3) emergency generators is subject to: NSPS IIII or 4I, New Source Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 39154 Federal Register / Vol. 71, No. 132 / Tuesday, July 11, 2006 / Rules and Regulations / Final Rule. Two of three generators are not subject to NSPS 4I based upon manufacture date (before April 1, 2006).

RICE MACT 4Z: Emergency diesel generators may be subject to RICE MACT 4Z, Area Source NESHAP / MACT ZZZZ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines / Final rule (Page 3568, Federal Register / Vol. 73, No. 13 / Friday, January 18, 2008 / Rules and Regulations / Final rule). For questions regarding the Area MACT 4J, Henry Ford must deal directly with Region 5, US EPA, Chicago. If and only if the engine operates as an emergency engine under the rule (40 CFR 63.6675 & 63.6640; exceptions apply, e.g., interruptible service contract with a power utility) and is located at residential, institutional, or commercial establishments (including hospitals), the generators are exempt from RICE MACT.

AQD has decided not to take délegation of these standards and therefore no attempt has been made to evaluate the Henry Ford's compliance with NESHAP / MACT 4Z.

PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I)

Henry Ford obtained emissions certificate from US EPA for Cummins Inc. 6CEEXL060.AAD engine family (Diesel) pursuant to Sec. 213 of Clean Air Act and 40 CFR, Part 89. Hence, Henry Ford is deemed to be in compliance with emission limits (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), I).

Only off-road 15 ppm S ULSD (Diesel 0.0015 %S) is burned (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), II.1).

The engines are operated for test purposes only (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), III.1, 2, 3). 1 hr. / wk. testing and 1 hr. / mo. load testing are performed. Cummins performs regular maintains and that includes 1 / yr. oil change.

Each engine is equipped with non-resettable hours meter (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), IV.1). The April 3, 2015, readings (since 2007) are as follows:

1. Engine 1 (HF3): 666 hours – 86 hours Oct 2013-Sep 2014
2. Engine 2 (HF4): 654 hours – 35 hours Oct 2014-March 2015
3. Engine 3 (HF2): 670 hours – 38 hours Octo 2014-March 2015

Name capacity of each engine does not exceed 2 MW (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), IV.2).

Henry Ford obtained emissions certificate from US EPA for Cummins Inc. 6CEEXL060.AAD engine family (Diesel) and, if the conditions of US EPA approval are met, Henry Ford is deemed to be in compliance with the stack testing requirements (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), V.1).

Henry Ford operates the generators only for testing purposes (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), V.1-4).

I asked Henry Ford to submit Initial Notification for NSPS 4I and Initial Notification and Notification of Compliance Status for NESHAP / MACT 4Z. (PTI No. 72-12, FG-Engines (not NSPS 4I) and EU-Engine1 (NSPS 4I), IX. 1 & 2)

Three 40,000-gallon storage tanks for ULSD Diesel are present. Each engine is tested once per week (1 hour test). Annually, 2-hour load test on engines is done by Henry Ford electrician. Annually oil and filters are changed by Cummins. All engines and boilers burn only ULSD Diesel.

May 3, 2012, Violation Notice

AQD issued Violation Notice dated May 3, 2012, for failure to comply with Rules 336.1201 (Permit-to-Install), 336.2802 (federal Prevention of Significant Deterioration [PSD], 40 CFR, §52.21), 336.1210 (Renewable Operating Permit [ROP]) of Act 451 of 1994, as amended, and federal 40 CFR, Part 60, Subpart Dc, Standards of Performance for New Sources for Small Industrial-Commercial-Institutional Steam Generating Units (NSPS Dc), 40 CFR, Part 60, Subpart IIII (4I), Standards of Performance for New Sources for Stationary Compression Ignition (CI) and Spark Ignition (SI) Internal Combustion (IC) Engines (NSPS 4I). Please refer to May 3, 2012, Violation Notice for details.

AQD received a violation response letter dated May 16, 2012. Besides, AQD received a supplemental VN response letter dated August 2, 2012. On June 5, 2012, AQD-SEMI District Office referred the violations for an escalated enforcement action. This violation has been settled with a consent order (AQD No. 1-2013).

Consent Order AQD No. 1-2013 effective April 3, 2013

AQD and Henry Ford entered into Consent Order AQD No. 1-2013. Henry Ford is to pay \$35,000 as settlement and is expected to implement Supplemental Environmental Projects of minimum value of \$313,761.00.

Based upon FY 2015 inspection, Henry Ford has installed (about June 2013) two EV charging stations capable of charging 4 vehicles. At this time charging is free for the hospital visitors. LED bulbs for parking lot were approved by West Bloomfield Twp. about October 2014 and most installation was completed by August 2015. Plug-in Hybrid (C-max) vehicle has been purchased (about June 2013). One car was totaled and it was replaced with equivalent C-max vehicle (about August 2014). Complete compliance evaluation of SEP will be done in FY 2016 (Min. \$313,761.00).

Annual Air Quality Fees and MAERS

G. Vinson Hellwig, AQD Chief, sent the letter dated June 1, 2012 along with an Invoice No. 760159 dated June 1, 2012, for \$13,455.00 (2009-2011) and the letter dated June 6, 2012 along with an Invoice No. 760386 dated June 8, 2012, for \$4,485.00 (2012). AQD received the payments as follows:

1. INV# 760386, \$4,485.00, 7/10/2012
2. INV# 760159 \$13,455.00, 7/31/2012

Conclusion

The Violation Notice dated May 3, 2012, was issued for failure to comply with Rules 336.1201 (Permit-to-Install), 336.1210 (Renewable Operating Permit [ROP]) & 336.2802 (federal Prevention of Significant Deterioration [PSD], 40 CFR, §52.21), federal NSPS (Subparts A, Dc, 4I). Consent Order AQD No. 1-2013 is effective since April 3, 2013. Per FY 2015 inspection, only LED lights (SEP) installation is not fully completed.

FYI: May 3, 2012, Violation Notice

May 3, 2012

Mr. Gerardvan Grinsven, President
 Henry Ford West Bloomfield Hospital
 6777 West Maple Road
 West Bloomfield, Michigan 48322

SRN: P0336, Oakland (63) County

Dear Grinsven:

VIOLATION NOTICE

On April 10, 2012, the Department of Environmental Quality (DEQ), Air Quality Division (AQD) conducted an inspection of Henry Ford West Bloomfield Hospital ("Henry Ford") located at 677 West Maple Road, West Bloomfield, Michigan. The purpose of this inspection was to determine Henry Ford's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the administrative rules.

During the inspection, staff observed the following:

Process Description	Rule/Permit Condition Violated	Comments
Henry Ford's entire hospital facility including all boilers, emergency generators, storage tanks, etc.	Rule 336.1210	Henry Ford failed to obtain federal Title V or Michigan Renewable Operating Permit (ROP). ^θ
Henry Ford's entire hospital facility including all boilers, emergency generators, storage tanks, etc.	Rule 336.2802 40 CFR, §52.21	Henry Ford failed to obtain federal Prevention of Significant Deterioration (PSD) permit. Potential-to-emit (PTE) for four boilers and three diesel generators exceeds 250 tons of NOx per year. ^θ

Boiler Nos. 1, 2, 3, 4 ^β	New Source Performance Standards (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units. 40 CFR, Part 60, Subparts A and Dc.	Henry Ford has failed to comply with these federal standards since 2008. ^γ
Three identical diesel emergency	New Source Performance Standards	Henry Ford has failed to comply with these federal standards since

generators ^Δ	(NSPS 4I) for Stationary Compression Ignition and Spark Ignition Internal Combustion Engines 40 CFR, Part 60, Subparts A, IIII (4I)	2008. ^μ
Boiler Nos. 1, 2, 3, 4 ^β	40 CFR, Part 60, Subpart Dc, § 60.44c & § 60.48c and 40 CFR, Part 60, Subpart A, § 60.7 & § 60.8.	Henry Ford has failed to comply with written notification and initial performance test requirements. [¥]
Three identical diesel emergency generators ^Δ	40 CFR, Part 60, Subpart IIII (4I) § 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine? Subpart A, § 60.7 & § 60.8.	Henry Ford has failed to comply with written notification and initial performance test requirements.
Boiler Nos. 1, 2, 3 ^β	Rule 336-1201 (Rule 201) Permit-to-Install.	Henry Ford installed the processes without first obtaining a Permit-to-Install. ^π
Three identical diesel emergency generators ^Δ	Rule 336-1201 (Rule 201) Permit-to-Install.	Henry Ford installed the processes without first obtaining a Permit-to-Install.

Boiler Nos. 1, 2, 3, 4 ^β	40 CFR, Part 60, Subpart Dc, § 60.48c (g).	Henry Ford has failed to keep a record of amount of each fuel combusted although fuel usage data is available via utility bills. The fuel usage (both natural gas and diesel or fuel oil) information shall be maintained using an Excel spreadsheet in a manner acceptable to AQD on a 12-month rolling time basis; i.e. monthly fuel usage information with monthly 12-month summation. According to NSPS Dc revisions (1. 72 FR 32759 and 2. 74 FR 5091), natural gas usage for all boilers combined can be kept.
Boiler Nos. 1, 2, 3, 4 ^β	40 CFR, Part 60, Subpart Dc, § 60.48c (d), (e) & (f)	Henry Ford has failed to obtain fuel supplier certification and keep records of it. Alternatively, Henry Ford may conduct its own sulfur-in-

		fuel analyses. If only commercially available ultra-low-sulfur diesel (ULSD, 15 ppm sulfur, non-taxable dyed diesel) for compression ignition diesel engines is used in the boilers, such documentation (e.g. MSDS) shall be maintained on file but the certification or the analysis is not necessary.
<p>^θ As a result of April 10, 2012, inspection, AQD has determined that Henry Ford is subject to federal Title V / Michigan Renewable Operating Permit (ROP) program (Rule 336.1210). This determination is based upon potential-to-emit (operation of the process equipment at design capacity for 8,760 hours per year) of nitrogen oxides (sulfur dioxide from sulfur in fuel is yet another criteria pollutant that may be considered) from operation of all four boilers using natural gas and all three identical emergency diesel generators. Potential-to-emit (PTE) is approximately 450 tons of nitrogen oxides per year: 389 tons per year for diesel generators (6.4 g/kW-hr = 6.4 kg/MW-hr NOx emissions, 3*2.1 = 6.3 MW total electric power generation capacity) and 61 tons per year for boilers (100 lbs / MM SCF = 0.1 lbs / MM BTU NOx emissions when burning NG, 42*3 + 12.5 = 138.5 MM BTU / Hr natural gas burning capacity). Although Henry Ford is subject to ROP based upon PTE (e.g. criteria pollutant NOx > 100 tpy), you may be able to obtain a synthetic minor permit that will limit emissions to below the thresholds (without public comment requirement: criteria pollutants such as NOx, SO2 < 89 tpy, single HAP < 9 tpy and aggregate HAP < 22 tpy). The limits will be federally, practicably and legally enforceable. In the interim until a synthetic minor (aka an ROP opt-out) permit is obtained, Henry Ford will be classified as Category I fee facility. Upon approval of the permit, the fee category will be changed to Category II based upon NSPS Dc and NSPS 4l applicability. Because PTE > 250 tons of NOx per year, Henry Ford is subject to PSD as well. Synthetic minor HAP limits will ensure that Henry Ford will not be subject to Major Source NESHAP / MACT.</p> <p>^β Three Identical high pressure (HP) steam boilers (Clever Brooks CB Packaged Boiler Model CBL-200-1,000-150), known as Boiler Nos. 1 (Serial No. OL104920), 2 (Serial No. OL104921), 3 (Serial No. OL104922) of design capacity 1,000 BHP (41.845 million BTU per hour heat input, 299 gallons of diesel [No. 2 fuel oil] per hour, 140,000 BTU per gallon of diesel, 150 max psi steam) and one high pressure (HP) steam boiler (Clever Brooks CB Packaged Boiler Model 4WI-200-300-150), known as Boiler No. 4 of design capacity 300 BHP (12.555 million BTU per hour heat input, 90 gallons of diesel [No. 2 fuel oil] per hour, 140,000 BTU per gallon of diesel, 150 max psi steam). All boilers (3 1,000-HP and 1 300-HP) were installed in 2008. All four boilers predominantly burn natural gas with fuel oil as a back-up fuel.</p> <p>^γ Since the natural gas fired boilers (with fuel oil back-up) of design capacity greater than 10 million BTU per hour were installed in CY 2008 (after June 9, 1989), the boilers are subject to New Source Performance Standards (NSPS Dc), 40 CFR, Part 60, Subparts Dc and A.</p> <p>^Δ Three Identical diesel emergency generators (Cummins Power Generation Diesel Generators Model DQK60-G6 / Model DQKC 5762 190, 2,179 kW / 2.179 MW, Manufactured in April 2006, installed in 2008)</p> <p>^Π Since the generators are installed in CY 2008 (after July 11, 2005) and generators are manufactured in April 2006 (after April 1, 2006), the generators (Compression Ignition [CI] Internal Combustion Engines [ICE]) are subject to New Source Performance Standards (NSPS 4l), 40 CFR, Part 60, Subparts IIII and A, for Stationary Compression Ignition and Spark Ignition Internal Combustion Engines (Page 37954, Federal Register / Vol. 76, No. 124 / Tuesday, June 28, 2011 / Rules and Regulations / Final rule, Page 39154, Federal Register / Vol. 71, No. 132 / Tuesday, July 11, 2006 / Rules and Regulations/ Final rule)</p> <p>[¥] A copy of initial notification form (NSPS Dc) may be obtained at http://www.michigan.gov/documents/deq/deq-oppca-eqp3551_297296_7.pdf</p> <p>^Π Pursuant to Rule 336.1282(b), the boilers burning sweet natural gas (up to 50 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install). Furthermore, pursuant to Rule 336.1282(b), the fuel oil fired boilers (up to 20 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install) subject to the condition that fuel oil (limited to No.1 and No.2) burnt has sulfur content no greater than 0.40 percent by mass. It may be noted that NSPS Dc allows sulfur content up to 0.50 percent sulfur by mass (0.5 pounds of sulfur dioxide per million BTU heat input). If sulfur-in-fuel documentation (< 0.4 %S) is maintained on file, it is not necessary to obtain a permit for Boiler No. 4. However, Boiler No. 4 must be included in the synthetic minor permit. Boiler Nos. 1, 2 & 3 are not exempt.</p>		

Under the State of Michigan's Air Pollution Control law and the federal Clean Air Act, a Renewable Operating Permit (ROP) program has been developed and implemented in Michigan. This program requires major sources of air emissions to obtain a facility-wide air use permit. This permit serves as a mechanism for consolidating and clarifying all air pollution control requirements which apply to the source. Rule 210(5) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), requires major sources to submit an application to the Department of Environmental Quality (DEQ), Air Quality Division (AQD) not more than 12 months after a stationary source commences operation as a major source, as defined by Rule 211(1)(a) of Act 451.

A program for compliance may include a completed PTI application for all process equipment at Henry Ford (facility-wide) to limit criteria air pollutants (e.g. nitrogen oxides [NO_x] from combustion and sulfur dioxide [SO₂] from sulfur in fuel) and HAP emissions below ROP thresholds. An application form is available at the following website:

http://www.deq.state.mi.us/aps/nsr_information.shtml#AUP

During this inspection, it was noted that Henry Ford West Bloomfield Hospital had installed and/or commenced operation of unpermitted boilers (3) and diesel generators (3) at the hospital facility. The AQD staff advised Henry Ford on April 10, 2012, that this is a violation of Act 451, Rule 201.

A program for compliance may include a completed PTI application for the boilers and emergency generators. An application form is available by request, or at the following website:

http://www.deq.state.mi.us/aps/nsr_information.shtml#AUP

Be advised that Rule 201 requires that a permit be obtained prior to installation, construction, operation, reconstruction, relocation, or alteration of any process or process equipment which may be a source of an air contaminant.

The boilers are subject to the federal Standards of Performance for New Sources (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units. These standards are found in Title 40 of the Code of Federal Regulations (CFR), Part 60, Subpart Dc. For additional Plain English details, please refer to Boiler Factsheet, which is located at: http://www.michigan.gov/documents/deq/deq-ess-caap-factsheet-nspis_boiler_dist_oil_203323_7.pdf

If fuel oil is used only for natural gas supply emergency (not to exceed 48 hours per year including any testing), the boilers are considered natural gas fired and are **not** subject to Area Source NESHAP / MACT 6J, National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63, Subpart JJJJJJ, Page 15608 Federal Register / Vol. 76, No. 54 / Monday, March 21, 2011 / Rules and Regulations / Final rule. For additional details, please visit http://www.michigan.gov/deq/0,4561,7-135-3310_4148-262365--,00.html. If 48-hour fuel oil usage limit is breached, Henry Ford becomes subject the MACT 6J and please refer to the compliance guide at: http://www.epa.gov/ttn/atw/boiler/imptools/area_sm_biz_compli_guide_appx.pdf. For

questions regarding the Area MACT 6J, deal directly with Region 5, US EPA, Chicago.

The generators are subject to the federal Standards of Performance for New Sources (NSPS 4I) for Stationary Compression Ignition and Spark Ignition Internal Combustion Engines. These standards are found in Title 40 of the Code of Federal Regulations (CFR), Part 60, Subpart IIII (4I), Page 37954 Federal Register / Vol. 76, No. 124 / Tuesday, June 28, 2011 / Rules and Regulations / Final rule.

Emergency diesel generators may be subject to RICE MACT 4Z, Area Source NESHAP / MACT ZZZZ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines / Final Rule (Page 3568, Federal Register / Vol. 73, No. 13 / Friday, January 18, 2008 / Rules and Regulations / Final rule). For questions regarding the Area MACT 4J, deal directly with Region 5, US EPA, Chicago. If and only if the engine operates as an emergency engine under the rule (40 CFR 63.6675 & 63.6640; exceptions apply, e.g., interruptible service contract with a power utility) and is located at residential, institutional, or commercial establishments (including hospitals), the generators are exempt from RICE MACT. A copy of initial notification form (NESHAP / RICE MACT for CI IC engines) may be obtained at: http://www.michigan.gov/documents/deq/deq-oea-Initial_Notification-Subpart_4Z_356379_7.pdf. Initial Notification must be submitted by August 31, 2010. AQD has decided not to take delegation of these standards and therefore no attempt has been made evaluate Henry Ford's compliance with NESHAP / MACT 4Z. However, a cursory review suggests that Henry Ford is in violation of the NESHAP / MACT 4Z.

Please initiate actions necessary to correct the cited and submit a written response to this Violation Notice by May 24, 2012 (which coincides with 21 calendar days from the date of this letter). The written response should include: the dates the occurred; an explanation of the causes and duration of the ; whether the ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

If Henry Ford West Bloomfield Hospital believes the above observations or statements are inaccurate or do not constitute violations of the applicable legal requirements cited, please provide appropriate factual information to explain your position.

Thank you for your attention to resolving the cited above and for the cooperation that was extended to me during my inspection of Henry Ford West Bloomfield Hospital. If you have any questions regarding the or the actions necessary to bring this facility into compliance, please contact me at the number listed below or the DEQ, Air Quality Division (AQD) Southeast Michigan (Warren) District Office, 27700 Donald Court, Warren, Michigan 48092-2793.

Sincerely,

Iranna Konanahalli

Air Quality Division
586-753-3741

ISK:VLL
Enclosures

cc: Mr. Joe Urbas, Henry Ford Hospital
Mr. George Czerniak, USEPA
Ms. Teresa Seidel, DEQ
Mr. Thomas Hess, DEQ
Mr. Dennis McGeen, DEQ
Mr. Chris Ethridge DEQ,

NAME *S. Llananahall*

DATE *08/17/2015* SUPERVISOR *CJE*