M4132
MANUAL

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

M413243316

FACILITY: Walter P. Reuther Psychiatric Hospital		**SRN / ID:** M4132
LOCATION: 30901 PALMER RD, WESTLAND		**DISTRICT:** Detroit
CITY: WESTLAND		**COUNTY:** WAYNE
CONTACT: Dan Carter , Physical Plant Manager		**ACTIVITY DATE:** 01/03/2018
STAFF: Todd Zynda	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

PURPOSE OF INSPECTION: Scheduled
INSPECTED BY: Todd Zynda (AQD)
PERSONNEL PRESENT: Dan Carter, Physical Plant Manager
FACILITY PHONE NUMBER: (734) 367-8447
CONTACT EMAIL: Carterd3@michigan.gov

FACILITY BACKGROUND

Walter P. Reuther Psychiatric Hospital (WRPH) is a State of Michigan run psychiatric hospital. The facility operates two 14.645 MMBtu boilers and four emergency generators.

COMPLAINT/COMPLIANCE HISTORY

There are no records of complaints for this facility on file.

The facility was previously inspected on June 26, 2012. At that time the facility was determined to be in noncompliance with Wayne County Installation Permits C-9565/9566. A violation notice was issued on July 31, 2012 for exceedance of permitted SO_2 emission limits. There is no response from the facility in Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) hard copy files. Michigan Air Compliance and Enforcement System (MACES) indicates that a response was received on September 7, 2012 which lead to the resolution of the violation notice.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VNs

None

INSPECTION NARRATIVE

On January 3, 2018 the MDEQ AQD inspector Mr. Todd Zynda conducted an inspection of WRPH located at 30901 Palmer Road, Westland, Michigan. During the inspection Mr. Dan Carter, Physical Plant Manager, provided information and tour of facility operations relating to air quality permits and regulations.

The inspection was conducted to determine the facility's compliance with the Clean Air Act and Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55. During the inspection, no visible emissions were observed.

The tour began with observation of the facility boilers. Both boilers at the facility operate using natural gas and have the ability to fire fuel oil. The plate on both boilers indicated the following capacity: 14,645,000 BTU/hr natural gas, 104.5 gallon per hour oil.

The tour continued with observation of the facility generators. The generator identification, the rated kilowatts (KW), manufacturer, and model are outlined below in Table 1.

Table 1

ID	Manufacturer	Model	KW	Installation Date
Powerhouse Generator	Cummins	100DGDB	100	1991
Old Generator Inside Hospital	Cummins	unknown	200	1973
Main Generator	Cummins	QSK50-G5-NR2	2,120	3/21/2015
AT Building Generator	Cummins	NT-335-GS	200	2015

Maintenance records and an example of monthly operation logs for each generator have not been provided at this time. During the inspection, none of the generators were in operation, but appeared to be in good condition. During the inspection, the Main Generator name plate indicated a generator KW rating of 2,120 KW. The specification sheet provided via email on February 1, 2018 does not indicate a KW rating for the Main Generator.

Based on the installation dates, two of the emergency generators (Main Generator and AT Building Generator) appear to be subject to 40 CFR, Part 60, Subpart IIII "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines".

WAYNE COUNTY INSTALLATION PERMIT C-9565/9566

The conditions of Wayne County Installation Permit C-9565/9566 were not evaluated. The boilers at the facility appear to be exempt from permit to install (PTI) requirements under the following Rules.

R336.1282(2)(b)(i): "Permit to install does not apply to.. Sweet natural gas, liquefied petroleum gas, or a combination thereof and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour."

R336.1282(2)(b)(ii): Fuel-burning equipment which is used for space heating, service water heating, electric power generation, oil and gas production or processing, or indirect heating and which burns only...Number 1 fuel oil, number 2 fuel oil, distillate oil, or a combination thereof which contains not more than 0.40% sulfur by weight and the equipment has a rated heat input capacity of not more than 20,000,000 Btu/hour.

On February 23, 2018, the facility provided correspondence via email that Wayne County Installation Permits C-9565/9566 should be voided. On February 26,2018, a void permit letter was sent to the facility.

APPLICABLE REGULATIONS

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

Both boilers at the facility are subject to this regulation as both were constructed after June 9, 1989 (§60.40c(a)). The approval date for Wayne County Installation Permits C-9565/9566 is February 4, 1992.

§60.48c(a) – **UNKNOWN** - Owner shall submit notification of the date of construction or reconstruction and actual startup as provided by §60.7 of this part. An initial notification was not located in AQD files.

§60.48c(f) - **NOT APPLICABLE** - If fuel supplier certification is used to demonstrate compliance with sulfur dioxide (SO_2) emissions, records of fuel supplier certification to be provided. According to Mr. Carter, the boilers have not fired fuel oil for the past three years. The facility provided the SDS for the fuel oil at the facility indicating "ultra low sulfur diesel".

§60.48(g) – **COMPLIANCE** - Owner or operator shall record and maintain the amount of each fuel combusted. WRPH provided monthly natural gas usage records for the boilers on March 12, 2018.

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

The Main Generator and AT Building Generator are subject to this regulation as the engines were manufactured after April 1, 2006 (40 CFR 60.4200)

§60.4205 – **NOT IN COMPLIANCE** - Owner/operator must comply with emission standards specified in this subpart. At this time the facility has not provide documentation (certificate of conformity) demonstrating compliance with the emission standards.

§60.4209(a) – **COMPLIANCE** - Install a non-resettable hour meter Both units were installed with a non-resettable hour meter.

§60.4211(e) - **NOT IN COMPLIANCE** - Limit maintenance checks and readiness testing to 100 hours per year. At this time the facility has not provided records demonstrating compliance with this requirement.

40 CFR Part 63, Subpart ZZZZ "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"

The AQD is not the delegated authority for this area source MACT. Therefore, emergency engines and applicable portions of Subpart ZZZZ were not evaluated for compliance.

40 CFR Part 63, Subpart JJJJJ – "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler Area Sources"

The AQD is not the delegated authority for this area source MACT. Therefore, boilers and applicable portions of Subpart JJJJJ were not evaluated for compliance.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Boilers

The boilers present at the facility are exempt from PTI requirements under R336.1282(2)(b)(i) and R336.1282(2)(b)(ii) as described above.

Emergency Generators

The second largest generator operates at 200 KW per hour. Based on calculations, the 200 KW/hr power output rating is equivalent to 682,428 Btu/hr rated input. At a 25% efficiency conversion, the maximum converted rating is approximately 2.7 MMBtu/hr. Based on the calculated rating, the smaller emergency generators (not included the Main Generator) at the facility are exempt from PTI under the following Rules.

R336.1285(2)(g): "Permit to install does not apply to...Internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input."

The largest capacity generator (Main Generator) operates at 2120 KW per hour. The generator specification sheet indicates a fuel flow rate range of 90.5 to 104.9 gallon per hour. This equates to a heat input capacity range of 12.67 MMBtu to 14.686 MMBtu (90.5 gallon per hour (or 104.9 gph) x 140,000 Btu/gallon). The Main Generator does not qualify for PTI exemption under R336.1285(2)(g) and is in violation of R336.1201(1).

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

Not Applicable. All lots are paved.

POTENTIAL TO EMIT EVALUATION

The facility potential to emit for NOx, SO_2,, and CO was evaluated as part of this inspection.

Table 2 - Potential to Emit Calculations

Boiler Rated Heat Input (BTU/hr)	Fuel Oil Heating Value (Btu/gal)	gallons fuel per year	NOx emisssion factor (lb/gal)	NOx PTE tpy	SO2 emission Factor	SO2 PTE tpy
14,645,000	140,000	916,359	0.02	9.16	0.0426	19.51844
14,645,000	140,000	916,359	0.02	9.16	0.0426	19.51844

					SO2 PTE	**39.03688**
Generators	Gallons per hour	Fuel Oil Heating Value (Btu/gal)	Emergency Hours	NOx Emission Factor (lb/MMBtu)	NOx PTE tpy	
Main Generator	200	140,000	500 hours	4.41	30.87	
AT Building Generator	16	140,000	500 hours	4.41	2.52	
Old Generator	16	140,000	500 hours	4.41	2.52	
Powerhouse Generator	8	140,000	500 hours	4.41	1.23	
				Total NOx PTE	**55.46**	
Boiler Rated Heat Input (BTU/hr)	Natural Gas Heating Value (Btu/SCF)	million cubic feet per year	NOx emission factor (lb/MMCF)	NOx PTE tpy	CO emission Factor (lb/MMCF)	CO PTE tpy
14,645,000	1,050	122.18	100	6.11	84	5.13
14,645,000	1,050	122.18	100	6.11	84	5.13
			NOx PTE	**12.22**	**CO PTE**	**10.26**

Based on PTE evaluation above, the facility appears to be a true minor source.

FINAL COMPLIANCE DETERMINATION:

WRPH appears to be in noncompliance with R336.1201(1) for the Main Generator and record keeping requirements and emission limit documentation requirements of 40 CFR Part 60, Subpart IIII for the Main Generator and AT Building Generator. A violation notice will be issued. Wayne County Installation Permits C-9565/9566 were voided on February 26, 2018 (see facility files for correspondence).

NAME _____ DATE 3/15/18 SUPERVISOR JK