

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number
B6145

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B6145-2018

DTE Electric Company – Greenwood Energy Center

SRN: B6145

Located at

7000 Kilgore Road, Avoca, Saint Clair County, Michigan 48006-2525

Permit Number: MI-ROP-B6145-2018

Staff Report Date: August 7, 2017

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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RENEWABLE OPERATING PERMIT

AUGUST 7, 2017 STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for Air Pollution Control pursuant to Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	DTE Electric Company – Greenwood Energy Center 7000 Kilgore Road Avoca, Michigan 48006-2525
Source Registration Number (SRN):	B6145
North American Industry Classification System (NAICS) Code:	221112
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201600049
Responsible Official:	1. Stephen Beeler, Plant Manager Section 1, Main Boiler 810-324-3218 2. Ryan A. Randazzo, Plant Manager Fossil Generation Section 2, Combustion Turbine Generators 734-231-1140
AQD Contact:	Robert Elmouchi, Air Quality Analyst 586-753-3736
Date Application Received:	February 17, 2016
Date Application Was Administratively Complete:	February 17, 2016
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	August 7, 2017
Deadline for Public Comment:	September 9, 2017

Source Description

DTE Electric Company is engaged in the generation of electricity for sale. Greenwood Energy Center, located at 7000 Kilgore Road, is an electric generating facility which operates the following emission units:

- EUBOILER1: one 785-Megawatt gross output boiler-electric generator. The main boiler can be fired on any combination of natural gas, residual oil, distillate oil, and recycled used oil.
- EUEASTAUXBOILER: one auxiliary boiler rated at 181.4 MMBtu per hour heat input, which is fired with pipeline natural gas.
- EUWESTAUXBOILER: one auxiliary boiler rated at 173 MMBtu per hour heat input, which is fired with No. 2, No. 6 fuel oil or blends thereof. This is an existing major source boiler as defined in 40 CFR 63.7575.
- EUCOLDCLEANER: Any new cold cleaner exempt from NSR (new source review) permitting.
- FGCOLDCLEANERS: Any new cold cleaner (placed into operation after 7/1/79) that is exempt from NSR permitting by R 336.1281(2)(h) or R 336.1285(2)(r)(iv).
- EU-GDF: Existing and new/reconstructed stationary gasoline dispensing facilities that have a maximum monthly gasoline throughput of 10,000 gallons and located at an area source of hazardous air pollutants (HAPs).
- FGRULE290: Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201; pursuant to Rules 278, 278a and 290.
- EUCTG11-1, EUCTG11-2 and EUCTG12-1: three combustion turbine generator peaking units. Each unit is rated at 82.4 MW (megawatts). These units are natural gas-fired, simple-cycle turbines each with a dry low-NOx combustor.
- EUEMGFIREPUMP: Emergency fire pump exempt from R 336.1201 per R 336.1285(2)(g) for internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input. This engine is subject to 40 CFR Part 60 Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. This engine was manufactured on April 14, 2016. Non-road diesel fueled compression ignition, 4-cycle, and in-line 6-cylinder engine with 8.9 liter total cylinder displacement. Maximum heat input of 1.98 MMBtu/hr. The maximum engine rated operating speed is less than or equal to 2300 RPM. In accordance with 40 CFR 60.4200, construction commenced on April 18, 2016.

NOTE: The EU prefix designates an emission unit, which is any part of a stationary source that emits or has the potential to emit an air contaminant (per R 336.1105 Definitions; E of the Michigan Air Pollution Control Rules). The FG prefix designates a flexible group, which is a grouping of emission units.

This facility operates in a cyclic mode to meet peak system load demands.

Section 1 of the ROP contains permit conditions regarding the operations and equipment associated with the electrical generation of the 785-MW main unit. This includes the main boiler (EUBOILER1), auxiliary boilers (EUEASTAUXBOILER and EUWESTAUXBOILER), an emergency fire pump (EUEMGFIREPUMP), cold cleaners (EUCOLDCLEANER and FGCOLDCLEANERS), gasoline dispensing tanks (EU-GDF), and emission units exempt from the requirements of R 336.1201 pursuant to R 336.1290 (FGRULE290). Continuous emissions monitors (CEMS) are installed to measure emissions of NOx, SO2 and opacity for the main boiler.

Section 2 deals with the operation of the three (3) natural gas-fired combustion turbine generators. Predictive emissions monitoring system (PEMS) are installed to measure NOx emissions from the combustion turbines.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2015**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	77.72
Lead (Pb)	0.00
Nitrogen Oxides (NO _x)	128.23
Particulate Matter (PM)	8.45
Sulfur Dioxide (SO ₂)	1.53
Volatile Organic Compounds (VOCs)	5.21

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2015 by the AQD per the MAERS system software:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
HEXANE	1.40
TOLUENE	0.05
FORMALDEHYDE	0.04
XYLENES ISO (Xylenes (isomers and mixture))	0.02
ETHYLBENZENE	0.01
PRPLENE OXID	0.01
ACETALDEHYDE	0.01
BENZENE	0.01
PHENOL	0.0048
ACROLEIN	0.0024
NAPHTHALENE	0.0008
BUTADIENE,13	0.0002
PHOSPHORUS	0.0001
Total Hazardous Air Pollutants (HAPs)	1.56

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The DTE Electric Greenwood Energy Center's initial renewable operating permit was issued on May 30, 2002. The initial ROP's expiration date was January 1, 2005 to coincide with the expiration date of the Acid Rain Permits for this source. The initial renewal of this ROP was issued on January 1, 2006. The second renewal of this ROP was issued on October 1, 2011. This is the third renewal of this ROP.

A portion of Saint Clair County is currently designated by the U.S. Environmental Protection Agency (USEPA) as a non-attainment area with respect to the SO₂ standard. The DTE Electric Greenwood Energy Center is located in Saint Clair County but is located outside the designated non-attainment area with respect to the SO₂ standard. The entire State of Michigan is currently designated as in attainment for the following Nation Ambient Air Quality Standards: Ozone (O₃), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), Particulate Matter equal to or less than 10 microns in diameter (PM₁₀), Annual and 24-hour Particulate Matter equal to or less than 2.5 microns in diameter (PM_{2.5}).

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit nitrogen oxides, carbon monoxide, sulfur dioxide, and PM10 exceeds 100 tons per year.

The potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year.

The main boiler (EUBOILER1), also identified as Boiler No. 1, is subject to the New Source Performance Standards (NSPS) for Fossil-Fuel-Fired Steam Generators promulgated in 40 CFR Part 60 Subparts A and D. The three (3) natural gas-fired combustion turbine generators (EUCTG11-1, EUCTG11-2 and EUCTG12-1)) are subject to the New Source Performance Standards for Stationary Gas Turbines specified in 40 CFR 60 Subparts A and GG.

EUBOILER1 at the stationary source was subject to review under the Prevention of Significant Deterioration regulations of 40 CFR 52.21, because at the time of New Source Review permitting the potential to emit nitrogen oxides, carbon monoxide, sulfur dioxide, and particulate matter was greater than 250 tons per year.

The source's actual emissions of greenhouse gasses, as CO₂e, in 2014 were 174,417.7 CO₂e metric tons. This facility is a major source of Greenhouse Gas (GHG). Since the promulgation of greenhouse gas regulations, the source has not proposed a project that triggers PSD BACT review; therefore, greenhouse gas conditions are not required to be included in this permit renewal.

The stationary source has emission units (EUBOILER1 and FGCTGS (EUCTG11-1, EUCTG11-2 and EUCTG12-1)) subject to the federal Acid Rain program promulgated in 40 CFR Part 72.

The stationary source has no emission units that were subject to R 336.1220 for Major Offset Sources at the time of permitting.

The stationary source is not subject to the federal Compliance Assurance Monitoring (CAM) rule (40 CFR 64) because EUBOILER1 and FGCTGS (EUCTG11-1, EUCTG11-2 and EUCTG12-1) do not have a control device to control particulate matter (PM) emissions. The emission limitations for NO_x and SO₂ from EUBOILER1 and NO_x from FGCTGS are exempt from the federal CAM rule because the emission limitations meet the CAM exemption for Acid Rain monitoring requirements.

The gasoline storage tanks (EU-GDF) are subject to R336.1703 for dispensing facilities since the gasoline storage tanks are new (placed into operation on or after July 1, 1979) and are stationary vessel(s) of more than 2,000-gallon capacity (one tank, FG-GDF, at 2,500-gallon capacity).

It appears that 40 CFR Part 63 Subpart CCCCC, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, was incorrectly applied to this source because this NESHAP does not apply to a major source of HAPs. Subpart CCCCC only applies to an area source of HAPs. Therefore, since the source is not an area source of HAPs, conditions originating in 40 CFR Part 63 Subpart CCCCC have been removed.

FGCTGS (EUCTG11-1, EUCTG11-2 and EUCTG12-1) emits air toxics that are subject to R 336.1225. The conditions relate to the emissions of formaldehyde. The application of R 336.1225 limits the fuel use to only pipeline quality natural gas, requires the recordkeeping of formaldehyde (HCOH) emissions and establishes stack/vent dimensions. There were no significant changes from the previous ROP.

The auxiliary boilers, EUEASTAUXBOILER and EUWESTAUXBOILER, at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD.

EUBOILER1 and FGCTGS (EUCTG11-1, EUCTG11-2 and EUCTG12-1) at the stationary source are subject to the Transport Rule NO_x Annual Trading Program pursuant to 40 CFR Part 97, Subpart AAAAA.

EUBOILER1 and FGCTGS (EUCTG11-1, EUCTG11-2 and EUCTG12-1) at the stationary source are subject to the Transport Rule NO_x Ozone Trading Program pursuant to 40 CFR Part 97, Subpart BBBBB.

EUBOILER1 and FGCTGS (EUCTG11-1, EUCTG11-2 and EUCTG12-1) at the stationary source are subject to the Transport Rule SO₂ Group 1 Trading Program pursuant to 40 CFR Part 97, Subpart CCCCC.

EUEMGFIREPUMP at the stationary source is subject to 40 CFR Part 60 Subpart IIII and may be subject to 40 CFR Part 63 Subpart ZZZZ if not maintained and operated as an emergency fire pump.

No violation notices have been issued since the last ROP issuance.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B6145-2011a are identified in Appendix 6 of the ROP.

PTI Number			
65-08	320-98A	180-72C	

Streamlined/Subsumed Requirements

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Non-applicable Requirements

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

Exempt Emission Unit ID	Description of Exempt Emission Unit	Rule 212(4) Exemption	Rule 201 Exemption
EU00020-1	Area Heater, Hastings-1 st floor Power House	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU00020-2	Area Heater, Hastings-1 st floor Power House	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU00020-2	Area Heater, Hastings-3 rd floor, West wall, turbine	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU03-4	Parts Cleaner, Machine Shop	R 336.1212(4)(b)	R 336.1281(2)(h)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by the MDEQ, AQD

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Joyce Zhu, Southeast Michigan District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

Purpose

A Staff Report dated August 7, 2017, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	1. Margaret Guillaumin, Plant Manager Section 1, Main Boiler 810-324-3218 2. Ryan A. Randazzo, Plant Manager Fossil Generation Section 2, Combustion Turbine Generators 734-231-1140
AQD Contact:	Robert Elmouchi, Environmental Quality Analyst 586-753-3736

Summary of Pertinent Comments

The following comments from the USEPA were received by the AQD.

1. EUBOILER1, page 17: Sulfur dioxide (SO₂), particulate matter (PM), and nitrogen oxides (NO_x) all have pounds per hour limits that do not appear to originate in the New Source Performance Standards for Fossil-Fuel-Fired Steam Generators (40 CFR Part 60 Subpart D). Please specify the origin and authority for these conditions in accordance with 40 CFR 70.6(a)(1)(i).

AQD RESPONSE:

The hourly **SO₂** emission limit is based upon the 40 CFR 60.43(a)(1) SO₂ emission limit times the maximum rated heat input of 7,200 MMBtu/hr.

The hourly **PM** emission limit is based upon the 40 CFR 60.42(a)(1) PM emission limit times the maximum heat input of 7,200 MMBtu/hr.

The hourly **NO_x** emission limit is based upon the 40 CFR 60.44(a)(1) NO_x emission limit times the maximum heat input of 7,200 MMBtu/hr.

To clarify the relation between the Part 60 emission limit and the hourly emission limit, the MDEQ/AQD (AQD) has split each of the SO₂, PM and NO_x emission limit underlying applicable requirements cells in EUBOILER1, I.1, 2 and 3 into two rows and added the underlying applicable requirement of R 336.1201(3) to each hourly limit.

2. [AQD designation 2.a] EUBOILER1, page 16: The PM emission limits reference SC V.2. for the monitoring/testing method. While this condition can be used to determine compliance during a

performance test, the permit does not address how the permittee will show on-going compliance with any operating parameters established during the test. Is additional monitoring required for any operating parameters to assure that the permit includes sufficient monitoring in accordance with 40 CFR 70.6(c)(1)?

AQD RESPONSE:

SC V.2 requires PM emission rate testing every third year. The third PM limit in the Emission Limits table is 0.10 lb. per 1,000 lbs. of exhaust gases on a wet basis, corrected to 50% excess air. The 2013 measured PM emission rate was 0.003 pound. The 2016 emission rate was 0.001 pound. Per these two emission tests, the actual PM emission rate from EUBOILER1 is approximately two orders of magnitude less than the permit limit. Furthermore, the permittee has a COM monitoring EUBOILER1. The AQD considers the actual low emission rate, compliance with opacity limits, and emission testing every three years to be a sufficient demonstration of ongoing compliance. Additionally, the AQD believes Special Conditions III.1, 2 and 3 ensure continuous compliance. Therefore, the AQD does not perceive a need for additional monitoring of operating parameters.

[AQD designation **2.b**] This question also applies to the PM and NOx limits for EUWESTAUXBOILER.

AQD RESPONSE:

EUWESTAUXBOILER is a limited use boiler. The AQD believes Special Conditions III.1, 2 and 3 ensure continuous compliance. Furthermore, special conditions V.2 and V.3 allows for emission testing if and when the AQD has concerns with PM and/or NOx emissions. Therefore, the AQD does not perceive a need for additional monitoring of operating parameters.

3. EUBOILER1, page 18: The material limits associated with the used oil list the broad authority of Rule 201(3) as the underlying applicable requirement. It appears that these material limits likely originated from a state toxics rule, which would be state-only enforceable. Please review the material limits and associated requirements for EUBOILER1 to verify whether these conditions should reference footnote 2, federally enforceable pursuant to Rule 201(1)(a), or footnote 1, state only enforceable pursuant to Rule 201(1)(b) and update the underlying applicable requirement as necessary.

AQD RESPONSE:

For EUBOILER1, The specification used oil material limits are specified in 40 CFR 279.11 and the PCB UAR is 40 CFR 761.20(e). The AQD has updated the Material Limits table with the appropriate UARs. Therefore, footnote 2 is appropriate.

4. EUBOILER1, page 17: Note a of the emissions table states that the sulfur limit of R 336.1401 has been subsumed with into SC I.1. However, the Staff Report states that the ROP does not include any streamlined/subsumed requirements. Please supplement the permit record to show the process MDEQ used to determine the set of permit terms and conditions that would assure compliance with all applicable requirements for EUBOILER1 in accordance with EPA's "White Paper Number 2." This comment also applies for the streamlined/subsumed requirement for EUWESTAUXBOILER on page 26.

AQD RESPONSE:

Streamlined/Subsumed Requirements

EUBOILER1 and EUWESTAUXBOILER have sulfur dioxide (SO₂) limits of 0.80 lb. per million Btu heat input, which the permit notes as equivalent to using oil fuels with 0.78% sulfur content and a heat value of 19,390 Btu's per pound. This limit, per 40 CFR 63.43(a)(1), is more stringent than the MDEQ R 336.1401(1),(2) and Table 41 maximum average sulfur content of 1.0 percent by weight, which is equivalent to 1.11 pounds of SO₂ per million Btu of heat input for liquid fuel at 18,000 Btu per pound.

The following calculation demonstrates that the 40 CFR 63.43(a)(1) SO₂ emission limit is equal to the R 336.1401(1), (2) and Table 41 SO₂ emission limit:

State of Michigan DEQ/AQD Emission Limit Conversion from Percent Sulfur by Weight to Pounds of Sulfur Dioxide per 1,000,000 Btu					
Btu HEAT INPUT	Btu per Pound of Liquid Fuel per R 401 Table 41, footnote (b): Sulfur content shall be calculated on the basis of 18,000 Btu per pound for liquid fuels.	Pounds Liquid Fuel per 1,000,000 Btu (calculated by dividing Btu by Btu per Pound of Liquid Fuel)	Maximum Average Sulfur Content in Fuel - PERCENT BY WEIGHT per R 401(1), Table 41,	Pounds Sulfur per 1,000,000 Btu (calculated by multiplying pounds of liquid fuel per 1,000,000 Btu times Maximum Avg. Sulfur Content weight percent.	Pounds of Sulfur Dioxide per 1,000,000 Btu (Note: One molecule of Sulfur Dioxide is 2 times the weight of one Sulfur atom.)
1,000,000	18,000	56	1.0%	0.56	1.11

5. [AQD Designation **5.a.**] EUEASTAUXBOILER, page 22; EUWESTAUXBOILER, page 27: The NO_x testing/sampling requirement (SC V.1. for EUEASTAUXBOILER and SC V.3 for EUWESTAUXBOILER) includes a high-level citation to Appendix A of 40 CFR Part 60 as the monitoring/testing method. Likewise, the PM testing/sampling requirement for EUWESTAUXBOILER (SC V.2.) also includes a high-level citation to Appendix A of 40 CFR Part 60. Please list a specific test method in accordance with 40 CFR 70.6(a)(3).

AQD RESPONSE:

The following text has been added to EUEASTAUXBOILER SC V.1, “Testing of NO_x emission rates shall be performed using EPA Method 7E...”

The following text has been added to EUWESTAUXBOILER SC V.2, “Testing of PM emission rates shall be performed using EPA Method 5...”

The following text has been added to EUWESTAUXBOILER SC V.3, “Testing of NO_x emission rates shall be performed using EPA Method 7E...”

[AQD Designation **5.b.**] USEPA (cont.) Furthermore, these testing/sampling conditions do not include a frequency for testing. Please justify that lack of a testing schedule by explaining how compliance with applicable requirements will be assured in accordance with 40 CFR 70.6(c)(1).

AQD RESPONSE: EUWESTAUXBOILER is a limited use boiler fired with No. 2, No. 6 oil or blends thereof. Per the MDEQ/AQD inspection conducted on August 4, 2017, “EUWESTAUXBOILER did not operate in 2016 and has not operated in 2017 to the date of this inspection (August 4, 2017). As of this inspection, EUWESTAUXBOILER was not operable and would need maintenance before operating again. DTE has elected to keep this emission unit permitted in the event DTE elects to return this emission unit to operating condition.” 40 CFR 63.7510(e) and (40 CFR 63.7510(j)), which are the UAR’s under EUWESTAUXBOILER special condition III.2, requires an initial tune-up after re-start of the affected source. Furthermore, special condition III.3 requires that tune-ups must be conducted no more than five years (61 months) after the previous tune-up. The MDEQ interprets these legally enforceable requirements to be sufficient requirements for compliant operation of this emission unit.

6. EUWESTAUXBOILER, page 27: Some of the PM emission limits reference SC VI.1. as the monitoring/testing method. SC VI.1. requires the verification of visible emissions. Is Method 9 the appropriate monitoring/testing method for these limits?

AQD RESPONSE: The MDEQ/AQD believes that the application of Method 9 in conjunction with the initial tune-up per SC III.2, subsequent tune-ups required per SC III.3 and the visible emission observation schedule outlined in Appendix 3.5-1 are appropriate indicators of ongoing compliant operation of EUWESTAUXBOILER, which is a limited use boiler. Furthermore, SC V.2 establishes the authority of the MDEQ to request the permittee verify PM emission rates from EUWESTAUXBOILER, by testing at owner’s expense, in accordance with Department requirements should the MDEQ have a compliance concern regarding the PM emission rate from EUWESTAUXBOILER.

7. EUWESTAUXBOILER, page 27: Under time period/operating scenario for SC I.1., a note is listed. This note states that a requirement has been subsumed under this streamlined requirement and does not provide information about the time period/operating scenario associated with these limits. Please list a time period/operating scenario to be used for determining compliance with this emission limit in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD RESPONSE: The MDEQ/AQD has split the I.1 Time Period/Operating Scenario row into two cells. The upper cell now identifies the time period as “As-fired fuel.” The lower cell identifies the time period as “Hourly.”

8. EUWESTAUXBOILER, page 28: SC V.1. requires the permittee to analyze and record the sulfur content of the oil fuels. A similar condition for EUBOILER1 references Appendix 3.1-1 Fuel Oil Sulfur Monitoring. Please review Appendix 3.1-1 and consider if the information contained there may be relevant for compliance with the sulfur emission limits in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD RESPONSE: The AQD added a reference to Appendix 1-3.1 to EUWESTAUXBOILER SC V.1. MDEQ added language to App 3-1.1 to clarify that the fuel analyses values obtained by Appendix 3-1.1 will be used by permittee to calculate SO₂, emission rate (lb/hr) from EUWESTAUXBOILER.

9. FG-CTGS, page 78: The monitoring/testing method for the formaldehyde and PM limits reference SC V.6 which is not contained in the draft permit. Please review this reference and revise accordingly.

AQD RESPONSE: The AQD changed three SC V.6 references to SC V.4 because SC V.6 is an invalid reference.

10. FG-CTGS: The Staff Report states that predictive emissions monitoring system (PEMS) are installed to measure NO_x emissions from the combustion turbines. Please verify if PEMS are required as part of an applicable requirement, and update and include monitoring requirements as applicable.

AQD RESPONSE: Per 40 CFR 75.2(a), FG-CTGS is subject to 40 CFR Part 75 - Continuous Emission Monitoring because each emission unit in this flexible group is subject to Acid Rain emission limitations. Per 40 CFR Part 75.1(b) this flexible group is required to install CEMS to monitor NO_x emissions. Per Appendix E to Part 75 - Optional NO_x Emissions Estimation Protocol for Gas-Fired Peaking Units and Oil-Fired Peaking Units, 1.1 states, “This NO_x emissions estimation procedure may be used in lieu of a continuous NO_x emission monitoring system (lb/mmBtu) for determining the average NO_x emission rate and hourly NO_x rate from gas-fired peaking units and oil-fired peaking units as defined in 40 CFR 72.2 of this chapter.” Therefore, per Appendix E to Part 75, the permittee is using PEMS to estimate emissions from the natural gas-fired peaking units. Appendix 7-2 specifies the monitoring requirements and the requirement to develop correlation curves, which are used to predict emission rates.

The underlying applicable requirements of 40 CFR 75.2(a) and 40 CFR Part 75.1(b) have been added to FG-CTGS, VI.3.a.

Changes to the August 7, 2017, Draft ROP

The changes to the Draft ROP are identified below. Paragraph numbers 1 through 10 below correspond to the comment numbers 1 through 10 in the section above.

1. To clarify the relation between the Part 60 emission limit and the hourly emission limit, the MDEQ/AQD (AQD) has split each of the SO₂, PM and NO_x emission limit underlying applicable requirements cells in EUBOILER1, I.1, 2 and 3 into two rows and added the underlying applicable requirement of R 336.1201(3) to each hourly limit.
2. No changes were made to the Draft ROP in response to USEPA comment number 2.

3. The AQD has updated the EUBOILER1, Material Limits table with the appropriate UARs as follows: 40 CFR 279.11 for halogens, lead, cadmium, chromium, arsenic and flashpoint; 40 CFR 761.20(e) for PCB.
4. No changes were made to the Draft ROP in response to USEPA comment number 4.
5. [AQD Designation **5.a.**]
The following text has been added to EUEASTAUXBOILER SC V.1, "Testing of NO_x emission rates shall be performed using EPA Method 7E..."

The following text has been added to EUWESTAUXBOILER SC V.2, "Testing of PM emission rates shall be performed using EPA Method 5...", and SC V.3, "Testing of NO_x emission rates shall be performed using EPA Method 7E..."

[AQD Designation **5.b.**] No changes were made to the Draft ROP in response to the USEPA comment.
6. No changes were made to the Draft ROP in response to USEPA comment number 6.
7. The MDEQ/AQD has split the I.1 Time Period/Operating Scenario row into two cells. The upper cell now identifies the time period as "As-fired fuel." The lower cell identifies the time period as "Hourly."
8. The AQD added a reference to Appendix 1-3.1 to EUWESTAUXBOILER SC V.1.
9. The AQD changed three SC V.6 references to SC V.4.
10. The underlying applicable requirements of 40 CFR 75.2(a) and 40 CFR Part 75.1(b) have been added to FG-CTGS, VI.3.a.
11. The AQD deleted condition EUBOILER1, VII.8 and inserted the appropriate template text at condition VII.4, "The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD within 60 days following last date of test. **(R 336.1213(3)(c), R 336.2001(5)).**" Subsequent conditions have been renumbered.
12. The AQD added the following text to EUEASTAUXBOILER, V.1 to be consistent with current permit language, "*No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Not less than 7 days before the test is conducted, permittee shall notify the AQD Technical Programs Unit and District Supervisor in writing of the time and place of the performance test. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.*"
13. The AQD changed the EUWESTAUXBOILER, I.1 sulfur dioxide heat input time period/operating scenario from "see note" to "as-fired fuel." This change was made specify the time period/operating scenario and to be consistent with other permits issued to DTE.
14. The AQD changed the EUWESTAUXBOILER, I.1 sulfur dioxide pounds per hour time period/operating scenario from "see note" to "hourly." This change was made specify the time period/operating scenario.
15. The AQD changed the EUWESTAUXBOILER and FG-CTGS, VII.4 by adding the following text to the end of the sentence, "within 60 days following last date of test."

16. The AQD deleted condition EUWESTAUXBOILER, VII.8 and inserted the appropriate template text at condition VII.4, "The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5)).**" Subsequent conditions have been renumbered.
17. The installation date/modification date for EUCOLDCLEANER in the emission unit summary table was changed to NA.
18. The emission unit IDs of "EUCOLDCLEANER" and "EU03-4" was added to FGCOLDCLEANERS in the flexible group summary table and "EUCOLDCLEANER, EU03-4 machine shop parts cleaner" in the FGCOLDCLEANERS table.
19. The FGRULE290 table was replaced with the current FGRULE290 template.
20. The AQD changed the text of Appendix 3.1-1, Fuel Oil Sulfur Monitoring to, "For EUBOILER1 and EUWESTAUXBOILER, the permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in fuel oil. The fuel analyses values shall be used to calculate SO₂ emission rates from EUWESTAUXBOILER."
21. Section 1, E. NON-APPLICABLE REQUIREMENTS, the template text was changed to, "At the time of the ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii)." Also, the table was removed.
22. Appendix 6-1. Permits to Install; NA in each cell has been replaced with the appropriate information.
23. The AQD changed the FG-CTGS, I.3 and I.5 monitoring/test methods from SC V.6 to SC V.4.
24. The AQD changed the FG-CTGS, V.1 text to, "In accordance with 40 CFR 75, Appendix E, the permittee shall retest the NO_x emission rate of each turbine at least once every 20 calendar quarters. Testing shall be performed using test methods specified in 40CFR60.335 and 40 CFR 60, Appendix A. The permittee shall perform NO_x testing for at least four (4) approximately equally spaced operating load points, ranging from the maximum operating load to the minimum operating load. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Not less than 7 days before the test is conducted, permittee shall notify the AQD Technical Programs Unit and District Supervisor in writing of the time and place of the performance test. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.² **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR Subparts GG, 40 CFR Part 60, Appendix A, 40 CFR 75 Appendix E, 40 CFR 75, 40 CFR 60.8 and 60.335).**" This change was made to insert current template language and specific text applicable to FG-CTGS.
25. The AQD changed the FG-CTGS, V.2 text to, "Permittee shall verify CO emission rates from each turbine in accordance with Department requirements. Testing must be done for each turbine in conjunction with NO_x testing and under the same operating load and test averaging period requirements. Testing shall be performed using test methods specified in 40 CFR 60, Appendix A. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete

test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Not less than 7 days before the test is conducted, permittee shall notify the AQD Technical Programs Unit and District Supervisor in writing of the time and place of the performance test. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.² **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004).** This change was made to insert current template language and specific text applicable to FG-CTGS.

26. The AQD changed the FG-CTGS, VII.4 text to, "The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5)).**" This change was made to insert current template language.

The AQD made the following changes to the Draft Staff Report text:

Source Description

- Detroit Edison was changed to DTE Electric Company.
- R 336.1281(h) was changed to R 336.1281(2)(h) to accurately represent the updated rule.
- R 336.1285(r)(iv). Was changed to R 336.1285(2)(r)(iv) to accurately represent the updated rule.
- The following text was deleted because the gasoline dispensing facility (GDF) is not subject to a MACT. "*EUGDFMACT: Existing and new/reconstructed stationary gasoline dispensing facilities subject to the Gasoline Distribution Area MACT (maximum available control technology),*"
- FGGDFMACT was changed to EU-GDF
- "FGRULE290: The flexible group description was changed to, "Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201; pursuant to Rules 278, 278a and 290."
- R 336.1285(g) was changed to R 336.1285(2)(g) to accurately represent the updated rule.

The following sentence was moved from the Section 2 paragraph to the Section 1 paragraph because CEMS are only used in Section 1, "*Continuous emissions monitors (CEMS) are installed to measure emissions of NOx, SO2 and opacity for the main boiler.*"

Regulatory Analysis

- Detroit Edison was changed to DTE Electric in two paragraphs.
- FGGDF was changed to EU-GDF two times in the same paragraph.

Processes in Application Not Identified in Draft ROP

- The following row of text was removed from the table because the process is identified in the ROP:

EU001-289, Tank Vent, UST Gasoline, R 336.1812(4)(d), R 336.1284(2)(g)(ii).

Additional Information

The NOx emissions from EUBOILER1 are controlled by flue gas injection. This control device is not subject to CAM per 40 CFR 64.2(b)(vi) because the permittee uses CEMS to monitor NOx emissions.