

Michigan Department of Environment,
Great Lakes, and Energy
Air Quality Division

State Registration Number
B2816

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B2816-2019

DTE Electric Company - Monroe Power Plant

SRN: B2816

Located at

3500 East Front Street, Monroe, Monroe County, Michigan 48161

Permit Number: MI-ROP-B2816-2019

Staff Report Date: May 13, 2019

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) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

TABLE OF CONTENTS

MAY 13, 2019 - STAFF REPORT	3
AUGUST 5, 2019 - STAFF REPORT ADDENDUM	16

Michigan Department of Environment,
Great Lakes, and Energy
Air Quality Division

State Registration Number

B2816

RENEWABLE OPERATING PERMIT

MAY 13, 2019 - STAFF REPORT

ROP Number

MI-ROP-B2816-2019

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an 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 - Monroe Power Plant 3500 East Front Street Monroe, Michigan 48161
Source Registration Number (SRN):	B2816
North American Industry Classification System (NAICS) Code:	221112
Number of Stationary Source Sections:	3
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201400047
Responsible Official Section 1:	Michael Twomley, Plant Manager 734-384-2207
Responsible Official Section 2:	Ryan Randazzo, Plant Manager 734-231-1140
Responsible Official Section 3:	Katherine Panczak, Vice President 734-302-8235
AQD Contact:	Brian Carley, Environmental Quality Specialist 517-416-4631
Date Application Received:	March 11, 2014
Date Application Was Administratively Complete:	March 11, 2014
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	May 13, 2019
Deadline for Public Comment:	June 12, 2019

Source Description

Section 1: DTE Electric Company – Monroe Power Plant (located at 3500 E. Front Street, Monroe) generates and transmits electricity for sale. The facility began operation in 1971, operates four cell burner boilers, which have a total nominal capacity of 3,140 megawatts. A low NOx burner system was installed in the boilers in 1994 and a new generation of Lo-NOx burners were installed on Units 1, 2, 3, and 4 on March 2006, March 2005, August 2006, and November 2005, respectively. Low-NOx burners, overfire air, Reduced Emissions Fuel (REF) sorbent system, selective catalytic reduction (SCR), dry wire electrostatic precipitators (ESP), and wet flue gas desulfurization (FGD) systems control the emissions from each boiler. In addition, each stack is equipped with a continuous emission monitoring (CEMS) system for the measurement of sulfur dioxide, nitrogen oxide, particulate matter and carbon dioxide emissions. Other emission sources in Section 1 include a coal and petroleum coke handling system, an ash handling system, auxiliary boilers, parts cleaning stations, limestone handling systems, hydrated lime storage, gypsum material handling systems and a fly ash storage facility. The fly ash storage facility consists of two 75-ton surge silos (Nos. 1 and 2), a 3000-ton storage silo, a 200-ton load-out silo, and associated blowers, pressure pumps, compressors, pipe conveyor lines, and spouts.

Section 2: DTE Electric Company – Monroe Peakers consists of five diesel fuel-fired generator peaking units that are limited use stationary reciprocating internal combustion engines.

Section 3: Monroe Fuels Company consists of coal and sorbent handling activity in the REF Transfer House and Refined Coal Plant Building including an 8,500-gallon Mersorb storage tank, a 750-ton S-Sorb solid storage silo, associated conveyors, and any trucking and unloading activities.

In the ROP renewal application there was fourth section covering the fly ash storage facility operated by Headwaters, Inc. Since the time of the ROP renewal application, DTE Electric Company had acquired this equipment and the tables and appropriate information from this section were moved into Section 1.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year 2018.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	2,027.93
Lead (Pb)	0
Nitrogen Oxides (NO _x)	5743.32
Particulate Matter (PM)	118.22
Sulfur Dioxide (SO ₂)	3854.35
Volatile Organic Compounds (VOCs)	242.95
Ammonia	0

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2018 by DTE Electric Company and Monroe Fuels Company:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
Acetaldehyde	0
Acrolein	0
Arsenic	0
Benzene	0
Benzyl Chloride	0
Chromium IV	0
Formaldehyde	0

Hydrogen Chloride (HCl)	40.45
Hydrogen Fluoride (HF)	14.58
Mercury (Hg)	0
Methyl Ethyl Ketone	0
Nickel	0
Propionaldehyde	0
Selenium	1.07
Toluene	0
Total Hazardous Air Pollutants (HAPs)	56.10

**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 stationary source is located in Monroe County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as nonattainment for ozone.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of all criteria pollutants exceeds 100 tons per year and 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.

EU-UNIT1, EU-UNIT2, EU-UNIT3, EU-UNIT4, EU-WFGD-QP1, EU-WFGD-QP2, EU-WFGD-QP3, EU-WFGD-QP4, EU-CASCADES, EU-TRANSFERHS, EU-DUMPERHS, EU-COALUNLOAD, EU-CRUSHERHS, EU-PETCOKE, EU-LIMESTONE, EU-GYPSUMHAND, EU-HYDRATELIME, EU-REFHS&BL, EU-NORTHAUX, EU-SOUTHAUX, EU-DIESEL11-1, EU-DIESEL11-2, EU-DIESEL11-3, EU-DIESEL11-4, and EU-DIESEL11-5 (equipment affected by the project) at the stationary source were subject to review under the Prevention of Significant Deterioration (PSD) regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality because at the time of New Source Review (NSR) permitting the potential to emit of each criteria pollutant was greater than 100 tons per year. The project consisted of the following: increasing the utilization of subbituminous coal and adding the combustion of petroleum coke; installation of wet FGD systems and an SCR; upgrading the coal handling systems; installing petroleum coke handling systems; limestone and gypsum handling systems; and installing diesel fuel-fired quench pumps.

The project was reviewed under the PSD rules which required Best Available Control Technology (BACT) and an air quality impact analysis. The criteria pollutants subject to PSD review were PM, PM10, SO₂, NO_x, CO, VOCs, sulfuric acid (H₂SO₄) mist, fluorides, and lead.

The stationary source has emission units that were subject to The Michigan Air Pollution Control Rules Part 19, New Source Review for Major Sources Impacting Nonattainment Areas at the time of NSR permitting of the project. Monroe County was classified as nonattainment for PM_{2.5}. The hybrid applicability test was used to demonstrate that the project was not a major modification because it did not cause a significant emissions increase.

When EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 were part of the project that was permitted in 2009, DTE agreed to conduct stack testing to determine emission rates for PM2.5 on each unit annually for the first ten years after installation of the wet FGDs. For EU-UNIT2 only, the modification was completed with the installation of the SCR along with the wet FGD. The emission factor that is generated from these stack tests is used to calculate the actual emissions for that calendar year. The total actual emissions of these four units and the other units in the project are compared to the projected actual emissions to demonstrate that nonattainment NSR does not apply to these modifications. The units each completed the modifications in the following timeframes: EU-UNIT1 - April 2014; EU-UNIT2 - November 2014; EU-UNIT3 - November 2009; and EU-UNIT4 - June 2009.

EU-WFGD-QP1, EU-WFGD-QP2, EU-WFGD-QP3, EU-WFGD-QP4, and EU-NSPS4iEngines at the stationary source are subject to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and IIII.

EU-LIMESTONE and EU-GYPSUMHAND at the stationary source are subject to the Standards of Performance for Nonmetallic Mineral Processing Plants promulgated in 40 CFR Part 60, Subparts A and OOO.

EU-REFHS&BL at the stationary source is subject to the Standards of Performance for Coal Preparation and Processing Plants promulgated in 40 CFR Part 60, Subparts A and Y.

EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Coal- and Oil-Fired Electric Utility Steam Generating Units promulgated in 40 CFR Part 63, Subparts A and UUUUU.

EU-BLR1_MESB and EU-BLR2_MESB 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.

EU-WFGD-QP1, EU-WFGD-QP2, EU-WFGD-QP3, EU-WFGD-QP4, EU-FIREPUMP, EU-DIESEL11-1, EU-DIESEL11-2, EU-DIESEL11-3, EU-DIESEL11-4, and EU-DIESEL11-5, at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ.

EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the federal Acid Rain program promulgated in 40 CFR Part 72.

EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the Cross State Air Pollution Rule NO_x Annual Trading Program pursuant to 40 CFR Part 97, Subpart AAAAA.

EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the Cross State Air Pollution Rule NO_x Ozone Season Group 2 Trading Program pursuant to 40 CFR Part 97, Subpart EEEEE.

EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the Cross State Air Pollution Rule SO₂ Group 1 Trading Program pursuant to 40 CFR Part 97, Subpart CCCCC.

Enforcement issues since the last ROP issuance

HCl and H₂SO₄ Emissions Violations (VNs dated April 6, 2011 and December 8, 2011)

On March 15, 2011, AQD received a stack test emissions report for EU-UNIT4 from DTE for the Monroe Power Plant that was conducted January 6 through 12, 2011. They reported the H₂SO₄ emissions as 0.014 lbs/MMBtu and the HCl emissions as 0.0042 lbs/MMBtu (Special Conditions (SC) I.15 and I.16,

respectively). The conditions of PTI No. 93-90A limit the emissions of H₂SO₄ and HCl to 0.005 lbs/MMBtu and 0.0024 lbs/MMBtu, respectively. A VN was sent on April 6, 2011, with a response due April 27, 2011.

In their response they determined that cause of the failure of the stack test was interference by ammonia that skewed the test results and that using another approved stack test methods should negate that interference. This interference was caused by the ammonia slip from the SCR, which was caused by pluggage of the catalyst in the SCR. In order to maintain compliance their NO_x emission limit as the catalyst became more plugged, DTE increased the ammonia levels in the flue gas stream which caused higher levels of ammonia slip to occur. The increased ammonia slip caused an increase in ammonia chloride levels. The ammonia chloride, when entering the probe and filter that had a temperature of 190° C, would break down into ammonia and chloride and the free chloride would bond with hydrogen to form HCl before it entered the spectrometer. When they retested on May 26, 2011, using Method 8A instead Method 8, the report received on August 1, 2011, showed that they were in compliance with the H₂SO₄ emission limit.

On October 31, 2011, AQD received a stack test emissions report for HCl retest on EU-UNIT4 from DTE for the Monroe Power Plant that was conducted August 31, 2011. They reported the HCl emissions as 0.0034 lbs/MMBtu which resulted in a VN being sent on December 9, 2011. In their response to the VN they stated that EU-UNIT4 was going into an outage January 20, 2012, where the catalyst in the SCR would be replaced with a new configuration of the catalyst installed in EU-UNIT4's SCR and ammonia slip monitors would be installed as process monitors. They were also updating the malfunction abatement plan (MAP) for the SCR for this unit to ensure that there were systems in place to prevent a reoccurrence.

On October 12, 2012, AQD received a stack emissions report for HCl retest on EU-UNIT4 from DTE for the Monroe Power Plant that was conducted August 16, 2012. The report showed that they were in compliance with the HCl emission limit. These violations were considered resolved when the revised MAP was approved on July 30, 2012.

PM Emission Violations (VNs dated December 2, 2013 and August 25, 2014)

At the time of the violations, DTE was required to conduct compliance testing via stack testing on a quarterly basis to ensure that emissions met the PM limit 0.011 lb/MMBtu in PTI 27-13 (SC I.2). Emission testing at the various units indicated that DTE violated the emission limit on the following days:

On September 10, 2013, EU-UNIT4 emissions stack test results were 0.014 lb/MMBtu.

On July 8, 2014, EU-UNIT1 emissions stack test results were 0.014 lb/MMBtu.

On July 9, 2014, EU-UNIT3 emissions stack test results were 0.013 lb/MMBtu.

The PM emissions at the plant are primarily controlled by the ESP and the FGD. The September 2013 exceedance was due to the plugged nozzles on the FGD caused by the absorbent recirculating (AR) pumps (the pumps used to introduce the limestone slurry into exhaust stream) had a significant amount of nozzles that were plugged with the majority located in one quadrant of the absorber tower. This pluggage, caused by pieces of failed AR pump liner, provided a less resistive path for the flue gas to take when leaving the stack and minimizing the effectiveness of the mist eliminators. The July 2014 exceedances were due to the use of improper test methods and filters during the emission testing. The test method that they had been using was Reference Method 5, which was not designed to be used on a stack that had a wet FGD, and they were going to switch to Reference Method 5B which was designed to be use in wet stacks. They had been using borosilicate glass fiber filters which have impurities that react with sulfur

oxides which can cause a positive bias in PM measurements. To prevent future emission violations, DTE fixed the plugged nozzles on the FGD and was replacing the materials of the all the AR pump liners with improved materials. They also changed test methods by using Reference Method 5A instead of Reference Method 5 and by using quartz filters instead of borosilicate glass fiber filters. Also, DTE has since installed a PM continuous emissions monitoring system on each unit, which have been certified by the AQD and are collecting daily PM emission readings from the units. These violations were considered resolved with they entered into Consent Order No. 26-2015 with AQD on September 18, 2015.

Stack Height Violations (VN dated March 14, 2014)

DTE self-reported that the stack heights for EU-LIMESTONE and EU-HYDRATED LIME did not meet the required above ground stack height in PTI No. 27-13. The permit requires the stacks at each unit to be at least 145 feet above the ground to ensure proper venting of emissions. The stack heights of the two units were approximately 115 feet and 90 feet, respectively.

Upon discovering the violations, DTE submitted a permit application to the AQD to modify PTI No. 27-13 to account for the existing height of the stacks. Based on the review of the modeling submitted in the application, the AQD determined that the existing stack heights of the emission units were acceptable and did not pose a risk to human health or the environment. The AQD issued DTE Monroe a new permit (PTI No. 27-13A) with requirements to comply with the existing stack heights. These violations were considered resolved with they entered into Consent Order No. 26-2015 with AQD on September 18, 2015.

MATS Mercury emissions exceedance violations (VNs dated September 29, 2016 and December 22, 2016)

The Monroe Power Plant is subject to and required to comply with all the requirements of National Emission Standards for Hazardous Air Pollutants (NESHAP) for Coal- and Oil-Fired Electric Utility Steam Generating Units (aka Mercury Air Toxics Standards (MATS)). Also, in PTI No. 27-13B, SC IX.3, states that they must comply with MATS. The Monroe Power Plant has installed a Hg sorbent monitoring system to continuously monitor Hg emissions, which is listed in MATS as an acceptable continuous monitoring system (40 CFR 63.10000(c)(1)(vi)), and is certified on an annual basis with a relative accuracy test audit (RATA). The compliance deadline for MATS for this facility was April 16, 2016. On September 15, 2016, the Monroe Power Plant submitted a ROP Semi-Annual Report Certification and Deviation Report that reported the Monroe Power Plant for exceeding the MATS Hg limit of 1.2 lbs/TBtu based on a 30 boiler operating day rolling arithmetic average updated each calendar day the boiler operates from May 22, 2016 through June 23, 2016 (33 days) on Unit 2. On September 29, 2016 a VN was sent to the Monroe Power Plant for exceeding the MATS Hg limit on EU-UNIT2 for this time period with a response to this VN due on October 13, 2016. On October 10, 2016 DTE requested a 3 week extension for the response to the VN due to the complexity of the issue, which AQD granted on October 13, 2016.

In the Monroe Power Plant's November 9, 2016 VN response, they were still unsure of the exact cause of the exceedance. They do believe the overall cause of the Hg emission exceedance to be insufficient oxidation of Hg from various factors caused by fuel, equipment, and operation. They believe that part of the cause of the exceedance was that mercury oxidation was inhibited in the SCR due to insufficient halogen concentration at low loads. The component of the system that removes vapor phase mercury from the flue gas is the FGD. In order for mercury to be removed by the FGD, it first must be oxidized since elemental mercury cannot be removed by the FGD. The SCR is where the vapor phase mercury is oxidized. The presence of halogens can increase the ability of the catalyst in the SCR to oxidize the mercury at lower loads. Halogens, such as chlorine and bromine, are present in various levels in coal and

the plant also utilizes two sorbents in the reduced emissions fuel (REF) process which add halogens to the fuel. A temporary calcium bromide (CaBr) application system was installed that adds CaBr to the fuel on the coal belt that feeds the plant for the times that the REF process is unavailable. They stated that they also have installed a Hg process monitor to provide the plant with data that allows for significantly more timely response to any emissions increase in order to avoid emissions exceedances with a permanent process monitor to be installed in the future.

They also did confirm in their VN response letter that they had an additional 18 days (August 5, 2016 through August 22, 2016) where they exceeded the MATS Hg emission limit on EU-UNIT2. Another VN was sent to the company on December 22, 2016, for this additional exceedance of the MATS Hg emission limit. No response was required since DTE had already included this exceedance in the November 9, 2016 VN response.

Michigan currently does not have delegation to implement and enforce all sources for MATS at this time and has referred these violations to EPA Region V on February 14, 2017. On September 24, 2018, EPA and DTE Energy reached an agreement with an Administrative Consent Order to resolve the violations. EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 have conditions from PTI Number 27-13C that originated from U.S. v DTE Energy Company, Civil Action No. EPA-5-2018-113(a)-MI-07 and pursuant to Act 451, Section 324.5503(b) will remain in effect after termination of the consent decree.

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."

The emission limitations or standards for PM, HCl, and SO₂ from EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR 64.2(b)(1)(i), because PM lb/MMBtu, HCl lb/mmBtu, and SO₂ lb/MMBtu are addressed by National Emission Standard for Hazardous Air Pollutants for Coal- and Oil-Fired Electric Utility Steam Generating Units promulgated in 40 CFR Part 63, Subparts A and UUUUU. Therefore, EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 are exempt from CAM requirements for PM lb/MMBtu, HCl lb/mmBtu, and SO₂ lb/MMBtu.

The emission limitation(s) or standard(s) for NO_x and SO₂ from EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR 64.2(b)(1)(iii), because the NO_x lb/MMBtu and tons/month emission limits and the SO₂ lb/hr emission limits meet(s) the CAM exemption for Acid Rain monitoring requirements. Therefore, EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 are exempt from CAM requirements for the NO_x lb/MMBtu and tons/month emission limits and the SO₂ lb/hr emission limits.

The emission limitations or standards for PM₁₀, lead, and HF from EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the federal Compliance Assurance Monitoring rule under 40 CFR Part 64, but monitoring included in National Emission Standard for Hazardous Air Pollutants for Coal- and Oil-Fired Electric Utility Steam Generating Units promulgated in 40 CFR Part 63, Subparts A and UUUUU is considered to be presumptively acceptable monitoring for lb/MMBtu and lb/hr (pph) and is included in the ROP in EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4.

Emission Unit ID	Pollutant/ Emission Limit	UAR(s)	Control Equipment	Monitoring	Presumptively Acceptable Monitoring?
EU-UNIT1	PM10/0.024 lbs/MMBtu	R 336.2810, 40 CFR 52.21(j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT1	PM10/183.0 pph	R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT1	Lead/1.69 x 10 ⁻⁵ lb/MMBtu heat input	R 336.1901, R 336.2810, 40 CFR 52.21(j)	ESP, FGD	40 CFR Part 63, Subpart UUUUU allows the use of a PM CEMS to provide continuous monitoring of PM as a surrogate for HAP metals and will assume if the unit is meeting the PM limit, it is meeting the lead limit	Yes
EU-UNIT1	HF/0.00023 lb/MMBtu heat input	R 336.1224, R 336.1225, R 336.2810, 40 CFR 52.21(j)	FGD	40 CFR Part 63, Subpart UUUUU allows the use of a SO2 CEMS to facilities with a FGD provide continuous monitoring of SO2 as a surrogate for acid gases and will assume if the unit is meeting the SO2 limit, it is meeting the HF limit	Yes
EU-UNIT2	PM10/0.024 lbs/MMBtu	R 336.2810, 40 CFR 52.21(j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT2	PM10/183.0 pph	R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM	Yes

Emission Unit ID	Pollutant/ Emission Limit	UAR(s)	Control Equipment	Monitoring	Presumptively Acceptable Monitoring?
				limit, it is meeting the PM10 limit	
EU-UNIT2	Lead/1.69 x 10 ⁻⁵ lb/MMBtu heat input	R 336.1901, R 336.2810, 40 CFR 52.21(j)	ESP, FGD	40 CFR Part 63, Subpart UUUUU allows the use of a PM CEMS to provide continuous monitoring of PM as a surrogate for HAP metals and will assume if the unit is meeting the PM limit, it is meeting the lead limit	Yes
EU-UNIT2	HF/0.00023 lb/MMBtu heat input	R 336.1224, R 336.1225, R 336.2810, 40 CFR 52.21(j)	FGD	40 CFR Part 63, Subpart UUUUU allows the use of a SO2 CEMS to facilities with a FGD provide continuous monitoring of SO2 as a surrogate for acid gases and will assume if the unit is meeting the SO2 limit, it is meeting the HF limit	Yes
EU-UNIT3	PM10/0.024 lbs/MMBtu	R 336.2810, 40 CFR 52.21(j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT3	PM10/183.0 pph	R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT3	Lead/1.69 x 10 ⁻⁵ lb/MMBtu heat input	R 336.1901, R 336.2810, 40 CFR 52.21(j)	ESP, FGD	40 CFR Part 63, Subpart UUUUU allows the use of a PM CEMS to provide continuous monitoring of PM as a surrogate for HAP metals and will assume if the unit is meeting the PM	Yes

Emission Unit ID	Pollutant/ Emission Limit	UAR(s)	Control Equipment	Monitoring	Presumptively Acceptable Monitoring?
				limit, it is meeting the lead limit	
EU-UNIT3	HF/0.00023 lb/MMBtu heat input	R 336.1224, R 336.1225, R 336.2810, 40 CFR 52.21(j)	FGD	40 CFR Part 63, Subpart UUUUU allows the use of a SO2 CEMS to facilities with a FGD provide continuous monitoring of SO2 as a surrogate for acid gases and will assume if the unit is meeting the SO2 limit, it is meeting the HF limit	Yes
EU-UNIT4	PM10/0.024 lbs/MMBtu	R 336.2810, 40 CFR 52.21(j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT4	PM10/183.0 pph	R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)	ESP, FGD	PM CEMS will provide continuous monitoring and will assume if the unit is meeting the PM limit, it is meeting the PM10 limit	Yes
EU-UNIT4	Lead/1.69 x 10 ⁻⁵ lb/MMBtu heat input	R 336.1901, R 336.2810, 40 CFR 52.21(j)	ESP, FGD	40 CFR Part 63, Subpart UUUUU allows the use of a PM CEMS to provide continuous monitoring of PM as a surrogate for HAP metals and will assume if the unit is meeting the PM limit, it is meeting the lead limit	Yes
EU-UNIT4	HF/0.00023 lb/MMBtu heat input	R 336.1224, R 336.1225, R 336.2810, 40 CFR 52.21(j)	FGD	40 CFR Part 63, Subpart UUUUU allows the use of a SO2 CEMS to facilities with a FGD provide continuous monitoring of SO2 as a surrogate for acid gases and will assume if the unit is	Yes

Emission Unit ID	Pollutant/Emission Limit	UAR(s)	Control Equipment	Monitoring	Presumptively Acceptable Monitoring?
				meeting the SO2 limit, it is meeting the HF limit	

In the preamble for MATS (77 FR 9304), EPA states that they were finalizing a requirement to use filterable PM as a surrogate for the nonmercury metallic HAP and HCl as a surrogate for the acid gas HAP for all subcategories of coal-fired EGUs (77 FR 9369). They also stated those EGUs with installed FGD systems “are required to comply with the HCl limit as a surrogate for all the acid gas HAP or the SO2 limit as an alternate equivalent standard” (77 FR 9396). Therefore, DTE will be using a currently installed and certified PM CEMS as a continuous monitor of filterable PM as a surrogate for lead. They will also be using a currently installed and certified SO2 CEMS as a continuous monitor of SO2 as a surrogate for HF.

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-B2816-2009 are identified in Appendix 6 of the ROP.

PTI Number			
7-76	95-77	222-77	535-84
841-80	843-77	151-68	92-70
119-79	168-94A	925-78	185-84
349-00	375-00	376-00	377-00
68-05	222-05	330-05	194-06

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.

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
092-019	Heater in Reclaim Tunnel	R 336.1212(4)(c)	R 336.1282(2)(b)(ii)
092-022	Heater in Reclaim Tunnel	R 336.1212(4)(c)	R 336.1282(2)(b)(ii)
092-036	Heater in Transfer House 4	R 336.1212(4)(b)	R 336.1282(2)(b)(ii)
092-037	Heater in Transfer House 4	R 336.1212(4)(b)	R 336.1282(2)(b)(ii)
096-011a	Motor Pool four (4)0.20 mmBtu/hr propane radiant heaters with individual vent to outdoor air	R 336.1212(4)(b)	R 336.1282(2)(b)(ii)
110-129a	Vent - PropaneHeating Furnace-Gibbco Warehouse	R 336.1212(4)(b)	R 336.1282(2)(b)(i)
110-129b	Gibbco Warehouse, 3 Propane Radiant Heaters with individual vents to outdoor air	R 336.1282(2)(b)(ii)	R 336.1212(4)(c)
110-106	Heating Furnace, Drain Cell Building	R 336.1212(4)(b)	R 336.1282(2)(b)(ii)
110-028a	1/2 Slurry House Pump Room, 0.95 mmBtu/hr, Wacker-Neuson, Indirect-fired Heater (no vent, combustion air ducted into Slurry house)	R 336.1212(4)(b)	R 336.1282(2)(b)(ii)
110-056a	3/4 Slurry House Pump Room, 0.95 mmBtu/hr, Wacker-Neuson, Indirect-fired Heater (no vent, combustion air ducted into Slurry house)	R 336.1212(4)(b)	R 336.1282(2)(b)(ii)

Draft ROP Terms/Conditions Not Agreed to by Applicant

The following table lists terms and/or conditions of the draft ROP that the AQD and the applicant did not agree upon and outlines the applicant's objections pursuant to Rule 214(2). The terms and conditions that the AQD believes are necessary to comply with the requirements of Rule 213 shall be incorporated into the ROP.

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant's Objection
EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4	SC VII.5 – the inclusion of requiring RATAs being submitted to AQD	DTE states "including RATA reports" is optional language in ROP template and unnecessary because RATA results are provided with the Quarterly Electronic Data Reports (EDRs). It is available to AQD via the EPA ECMPS website. While AQD agrees that DTE is required to submit these reports to EPA in accordance to Part 75, PTI No. 27-13C requires that DTE to submit these reports also to AQD.

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant's Objection
EU-CASCADES, EU-TRANSFERHS, EU-DUMPERHS, EU-CRUSHERHS	SC V.3 and V.4 for PM and PM ₁₀	DTE states that these conditions are unnecessary as it just reiterates General Condition 13. AQD believes that these conditions are necessary to show compliance with the PM and PM10 emission limits in Section 1 of the respective tables. Even though that these conditions are similar to General Condition 13, AQD feels that it is important to specify the conditions that the possible stack tests may be done under.

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 EGLE, 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 Scott Miller, Jackson 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.

State Registration Number

B2816

RENEWABLE OPERATING PERMIT

AUGUST 5, 2019 - STAFF REPORT ADDENDUM

ROP Number

MI-ROP-B2816-
2019

Purpose

A Staff Report dated May 13, 2019, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. 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 Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official Section 1:	Michael Twomley, Plant Manager 734-384-2207
Responsible Official Section 2:	Margaret Guillaumin, Plant Manager 313-701-3383
Responsible Official Section 3:	Katherine Panczak, Vice President 734-302-8235
AQD Contact:	Brian Carley, Environmental Quality Specialist 517-416-4631

Summary of Pertinent Comments

The U.S. Environmental Protection Agency (EPA) had the following comments:

1. Staff Report, Compliance Assurance Monitoring (CAM) applicability for EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4. The Staff Report describes several exemptions from CAM on the basis that the units are subject to the National Emission Standard for Hazardous Air Pollutants for Coal- and Oil-Fired Electric Utility Steam Generating Units (40 CFR Part 63 Subpart UUUUU) and the Title IV Acid Rain Program. In accordance with 40 CFR §64.2(b), please address the CAM non-applicability analysis for the emission limits in EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 (i.e., those limits not required by Subpart UUUUU and Title IV). For example, it appears that the relevant exemption may be 40 CFR §64.2(b)(1)(VI)- emission limitations for which the title V permit specifies a continuous compliance determination method.
 - AQD Response: For the SO₂ and NO_x emission limits, they would be exempt per 40 CFR 64.2(b)(1)(iii), 40 CFR 64.2(b)(1)(iv), and 40 CFR 64.2(b)(1)(vi). DTE Monroe is required to submit all their SO₂ and NO_x CEMS data to EPA Clean Air Markets Division (CAMD) as required by the Acid Rain (Title IV) and the emissions trading program Cross State Air Pollution Rule (CSAPR). This data is the same data that would be used to show compliance with the SO₂ and NO_x emission limits. On the CAMD Air Market Program Data website (<https://ampd.epa.gov/ampd/>), the data is posted on-line and lists the SO₂ in pounds or tons, NO_x in pounds, tons, and pounds per mmBtu (lb/mmBtu), operating hours, and heat input for each unit and can be shown for annual, quarterly, monthly, daily, and hourly emissions. You can see the SO₂ emissions in pounds per hour or dividing the SO₂ pounds emitted per hour by the heat input for that hour you can get the lb/mmBtu. For PM, SO₂, and HCl, they would be exempt as 40 CFR Part 63 Subpart UUUUU (a.k.a. MATS) has continuous monitoring required for these pollutants in the form of CEMS. Because DTE Monroe has a wet FGD installed on each boiler, they are allowed to monitor SO₂ as a surrogate of HCl. According to MATS, if a facility can comply with the SO₂ emission limit in MATS,

then they are complying with the HCl emission limit in MATS, which is more stringent than the HCl emission limit in SC I.16 in tables EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4.

2. FG-COALBLRCAM. The Staff Report indicates that EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 are subject to CAM for PM-10, lead, and hydrogen fluoride. However, FG-COALBLRCAM only includes excursion levels for PM-10 and hydrogen fluoride. Please revise FG-COALBLRCAM as necessary to include the excursion level for lead, in accordance with 40 CFR §64.6(c)(2).
 - AQD Response: Special Condition (SC) VI.3 was modified to include lead along with PM10.
3. EU-UNIT1, EU-UNIT2, EU-UNIT3, EU-UNIT4, and FG-COALBLRCAM. Although the Staff Report indicates that the PM-10, lead, and hydrogen fluoride limits in EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 are subject to CAM, these respective Emission Unit and Flexible Group sections of the permit do not associate these emissions limits with the CAM requirements. Please revise the permit as necessary to identify which pollutant specific emission units (i.e., PM-10, lead, and hydrogen fluoride limits for EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4) are subject to CAM, in accordance with 40 CFR §64.2(b). For example, the Monitoring/Testing Method column in the EU emissions tables could reference the applicable CAM requirements in FG-COALBLRCAM, and/or the applicable emission limits could be directly identified in FG-COALBLRCAM.
 - AQD Response: References to specific special conditions in FG-COALBLRCAM have been inserted into the appropriate Monitoring/Testing Method column in Section 1 of EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4.
4. EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4. As drafted, many of the emission limitations in the table reference only performance testing provisions in the Monitoring/Testing Method column and do not identify monitoring requirements necessary to assure compliance on an ongoing basis, as required by 40 CFR 40 CFR §§70.6(a)(3) and (c)(1). Please review the Monitoring/Testing Method column in the emissions tables and update the permit as necessary to assure that the permit includes and identifies all associated monitoring requirements.
 - AQD Response: Added references to MAP have been inserted into the Monitoring/Testing Method column in Section 1 for VOC and H2SO4 in Tables EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4. Also were added in the Monitoring/Testing Method column for lead (lb/mmBtu emission limit) and arsenic (lb/mmBtu emission limit) reference to the continuous emission monitoring requirements for PM in FGMATS. For HCl, in the Monitoring/Testing Method column, reference to the continuous emission monitoring requirements for SO2 was added. For lead, arsenic and HCl, MATS has more stringent emission limits than those in Tables EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 and has continuous monitoring methods for those pollutants. For lead and arsenic, PM is a surrogate and the facility uses a PM CEMS to show compliance with the MATS PM emission limit. For HCl, SO2 is a surrogate and the facility uses a SO2 CEMS to show compliance with the MATS SO2 emission limit.
5. EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, sections I.2. The particulate matter Monitoring/Testing Method in each of these sections incorrectly refers to SC VI.3. Please revise the citation to refer to SC VI.2., the particulate matter continuous emission monitoring provisions.
 - AQD Response: The requested change was done.
6. EU-CRUSHERHS. The unit description in the draft permit states: "The dust collectors (DC05) in this area have been decommissioned." Additionally, this section of the permit includes some limits which apply after a dust collector has been recommissioned, and other limits which apply until a dust collector has been recommissioned. In the Staff Report, please clarify the status of the dust collectors, relative to the applicable emission limit requirements in the permit.
 - AQD Response: In PTI No. 93-09 and carried over into PTI Nos. 93-09A, 93-09-B, 63-11, 27-13, 27-13A, 27-13B, and 27-13C (the most current PTI that is being incorporated into this ROP) the dust collectors for this unit were permitted with PM limits once the new dust controls were installed. Since then, DTE has

decommissioned the existing dust collectors and are now controlling PM emissions by using enclosures, wet sprays, and/or dust suppressants in lieu of the dust collectors. So, they are still required to comply with the PM emission limit that they were subject to per their ROP prior to PTI No. 93-09. If they ever recommission their current dust collectors or install new dust collectors, these devices would be subject to the PM emission limit in PTI No. 27-13C as they would, either way, be considered new dust collectors.

Section 2 DTE Electric Company – Monroe Peakers

7. FG-PEAKERS –What ongoing monitoring method to determine compliance was being used or if there none what is the justification.
 - AQD response: These engines are classified as limited use stationary RICE (i.e. they operate less than 100 hours/year) with SC III.1 limiting the operations to 99.9 hours. DTE's NOx limit of 90.2 pph was based on the PTE for each diesel generator (or maximum, which technically can't be exceeded). The emission limit was calculated using design fuel burning rate, a default fuel heat content and EPA's AP-42 NOx emission factor for large diesel internal combustion engines (uncontrolled). This emission limit is the worst case scenario and limiting each generator to 99.9 hours/year also allows it to meet the NOx NAAQS. Will add SC III.1 and SC VI.2 to Monitoring/Testing Method to ensure that they meet that requirement.

Section 3 Monroe Fuels Company, LLC

8. EU-REFHS&BL – EPA asked why there was no performance testing required and if there was a way based on the configuration of the activities and why the emission limits included test protocol language in the PTI.
 - AQD response: Since the control devices are not large enough to be stack tested without considerable difficulty, DTE has requested the Time Period/Operating Scenario in Section I be changed from "Test protocol will specify averaging time" to "Daily". Since the Monitoring/Testing Method is based on following the MAP and daily non-certified opacity observations, AQD has agreed with this request.

DTE Energy Company had the following comments:

1. Appendix 9-1 Acid Rain Permit – The NOx averaging plan is outdated and the newest plan, effective January 1, 2019, needs to be incorporated.
 - AQD response – the new NOx Averaging Plan has been incorporated into the Acid Rain Permit in Appendix 9-1 and in the Acid Rain Permit No. MI-AR-1733-20XX that is going through the public comment period at the same time as ROP No. MI-ROP-B2816-20XX.
2. AQD 5 year Test Language – DTE has not agreed with AQD Jackson District Office regarding this time frame of when stack tests should occur and are meeting with Chris Ethridge, AQD, Field Operations Supervisor through MMA on this language.
 - AQD response – Until we hear otherwise from Chris Ethridge, the language currently in the permit will stay.
3. CAM Monitoring Condition Language: The CAM section indicates a PM CAM, but there is only the need for a lead and hydrogen fluoride CAM plans. DTE submitted and AQD accepted CAM plans in October 2018. The plan defined DTE's CAM excursion indicator, including the use of 30-boiler operating day averaging (which is accordance to CAM rules). DTE has already configured the CEMS DAHS to monitor the CAM pollutants using that averaging period.
 - AQD response: The source description for FG-COALBLRCAM did not properly reflect what the table covered and has been updated. For a pollutant that a facility is using a presumptively acceptable monitoring (PAM), in this case PM10, lead, and HF, CAM still applies, and the CAM template language and conditions still need be added to the ROP table. Having a limit that defines an excursion with an emission limit from one table and a less stringent timeframe from another table is not acceptable and the emission limit that defines the excursion will remain unchanged. The requested change has been denied.
4. DTE requested that the CAM language in SC VI.1 and VI.3 be combined into one SC and in SC VI.2 and VI.4 be combined into one SC.

- AQD response: The request to combine the CAM language into one condition for the PM10 and lead and into one condition for the HF was approved.
5. DTE noted that in the source description in the staff report it was stated that they had sulfur trioxide (SO₃) and ammonia flue gas conditioning systems as two of the controls that were installed on each of the four boilers. These two controls had been removed as they became obsolete once the SCR and FGD were installed on each of the four boilers.
- AQD response: AQD agrees that it should not have been included in the source description. The description has been revised to reflect the current pollution control equipment at the Monroe Power Plant.

Changes to the May 13, 2019 Draft ROP

Changes per EPA comments

Section 1

- In FG-COALBLRCAM, SC VI.3 was modified to include lead along with PM10.
- References to specific special conditions in FG-COALBLRCAM have been inserted into the appropriate Monitoring/Testing Method column in Section 1 of EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4.
- In EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, SC I.2 - Monitoring/Testing Method, the citation was changed from SC VI.3 to SC VI.2.
- In EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, SC I.11 and I.12 - Monitoring/Testing Method, SC III.1 was added.
- In EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, SC I.13 and I.20 - Monitoring/Testing Method, references to FGMATS SC VI.3 was added.
- In EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, SC I.16 - Monitoring/Testing Method, references to FGMATS SC VI.5 was added.

Section 2

- FG-PEAKERS - Added SC III.1 to Monitoring/Testing Method in Section 1 for NO_x emission limit.

Section 3

- EU- REFHS&BL – Changed the Time Period/Operating Scenario in Section I for the PM, PM10, and PM2.5 emission limits be changed from “Test protocol will specify averaging time” to “Daily”

Changes per DTE comments

Section 1

- Changing the 40 CFR 60.4205(b) to 40 CFR 60.4205(c) as a UAR to SC III.2 in FG-WFGD-QP1&2 and FG-WFGD-QP1&2
- Adding 40 CFR 63.6590(c)(7) as a UAR to SC IX.2 in FG-WFGD-QP1&2 and FG-WFGD-QP1&2
- Updated the source description in FG-COALBLRCAM to specify the pollutants subject to CAM per PAM
- In FG-COALBLRCAM, combined SC VI.1 and VI.3 combined into SC VI.1 and in SC VI.2 and VI.4 combined into SC VI.2
- Changed the Acid Rain Permit by replacing the NO_x Averaging Plan in the permit with the updated NO_x Averaging Plan
- Changed the NO_x alternative emission limit and the year this limit went into effect in the NO_x limit portion of the tables for each unit in the Acid Rain Permit

Staff Report

- The Responsible Official for Section 2 has been changed to Margaret Guillaumin
- The list of pollution control equipment of the four boilers in the source description was modified to remove obsolete pollution control equipment (SO₃ and ammonia flue gas conditioning system)