B2810
MANUAL

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B281059074

FACILITY: DTE Electric Company - River Rouge Power Plant		**SRN / ID:** B2810
LOCATION: 1 BELANGER PARK DRIVE, RIVER ROUGE		**DISTRICT:** Detroit
CITY: RIVER ROUGE		**COUNTY:** WAYNE
CONTACT: Tanecia Wilson , Associate Engineer - Environmental		**ACTIVITY DATE:** 07/09/2021
STAFF: C. Nazaret Sandoval	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FY 2021 Scheduled Inspection		
RESOLVED COMPLAINTS:		

Source: DTE Electric Company, River Rouge Power Plant
SRN: B2810
Address: 1 Belanger Park Drive, River Rouge, Michigan 48218-2601
Subject: Scheduled Inspection
Inspector: Nazaret Sandoval, Air Quality Division (AQD), Detroit Office

1 - SAFETY EQUIPMENT/SAFETY TRAINING/SECURITY

Hardhat, safety glasses with side shields and steel-toed boots are required throughout the plant; hearing protection is required in some areas. One must sign in at the guardhouse and allow security to notify plant staff of your arrival prior to entering the plant grounds beyond the guardhouse. Visitors can park in the contractor/employee lot in the foreground of the guardhouse.

2 - FACILITY BACKGROUND AND PROCESS DESCRIPTION

DTE Electric Company River Rouge Power Plant (DTE River Rouge or DTE RR), formerly known as the Detroit Edison River Rouge Power Plant, was constructed in the 1950s to generate electricity. The original plant comprised three large steam boilers identified as Unit 1, Unit 2, and Unit 3 and its associated turbines, a smaller auxiliary steam boiler, coal and ash handling equipment, and four diesel turbine peakers. Unit 1 was a natural gas fired unit owned by DTE River Rouge Unit 1 LLC, a subsidiary of DTE Energy, and operated by DTE River Rouge. Units 2 and 3, owned and operated by DTE River Rouge, fired primarily western subbituminous coal with additional amounts of eastern bituminous coal, natural gas, coke oven gas, blast furnace gas, and dried paint solids.
Over the years, with the changes in air regulations and new emission standards, equipment aging and business trends, there have been modifications in the plant equipment and operations which included changes in the fuels used in the boilers, the addition of treatment processes for air pollution controls, the retirement of boilers, etc. More details of those changes will be presented later in this report.
One of the major additions to the plant was completed in mid-2015 with the installation of a modular Dry Sorbent Injection (DSI) and Activated Carbon Injection (ACI) system to comply with the Mercury Air Toxic Standards (MATS) for coal-fired electric utility steam generating units. The project included the installation of equipment to serve both boilers, Units 2 and 3. The DSI/ACI system was installed to treat HCl, PM and Hg in the flue-gas before it entered to the electrostatic precipitators (ESP) that controlled the particulate emissions from the boilers.

Most of the equipment above identified were not in operations on the date of the inspection (7/9/2021) because they had been shut down permanently. The only active operations were those associated with coal transfer and pulverized coal injection and the diesel turbine peakers. However, since the investigation period for this site inspection is from June 1, 2020 to May 31, 2021, and during that period one of the boilers was still operating, I will describe the operations that took place at DTE River Rouge before the last boiler at the plant (Unit 3) ceased its operations and officially retired on June 1, 2021. In addition, on 7/9/2021, the active AQD permit regulating the emission units at the facility did not reflect the retired emission units and its associated equipment. The permit modifications were still in the review stages from EPA and AQD authorities.

When possible, I have included within the narrative, the facility's updates, as well as the permit actions that took effect after the inspection of July 2021 and during the writing/final posting of this inspection report. A summary of the changes and the most current status of the equipment and operations is listed in the last paragraphs of Section 4 on this report.

COAL TRANSFER AND Pulverized coal injection (PCI) OPERATIONS

DTE River Rouge offloads coal from railcars into an underground pit capped by a total enclosure known as the Rail Car Dumper House. The coal is lifted through a covered conveyor system comprising three primary transfer points (the Drive House, the Unloading House, and the Breaker House), stacking/stocking conveyors, and stockpiles for eastern, western, and PCI coal. All coal is eventually transported passing through additional transfer points (Transfer House No.1 and Transfer House No.2) to the boilers' bunkers or diverted for the PCI system, which utilizes the bunker formerly used for Unit 1. Particulate emissions at the Rail Car Dumper House and at the coal bunkers are controlled by fabric filters; particulate emissions along the conveyors and at the transfer points are controlled through enclosures and through the application of a dust suppressant. The usage of dust suppressant has diminished over time and has been discontinued after the cease in operations of the boilers. According to DTE, the "metallurgic coal" (as DTE calls it) which is the type of coal used for the PCI operations, does not generate much dust and they never needed to use dust suppressant for PCI coal transfers and conveying.

DTE River Rouge acted as an intermediate coal processer for the U.S. Steel blast furnaces on Zug Island and AK Steel (acquired by Cleveland Cliffs in 2020) blast furnaces in Dearborn. This coal, known as the PCI coal, is pulverized in one of four coal mills. Mills number 1, 2, 5 and 6 are used to pulverize the coal sold to U.S. Steel and the product is piped across the Rouge River to Zug Island. The coal processed at the Alstom Mill is sent to an on-site Silo and trucked to Cleveland-Cliffs. Particulate emissions from the PCI coal mills and PCI handling equipment are controlled by fabric filters. There are two stacks, one for each coal mill operation. During the inspection on 7/9/2021 I was informed that US Steel PCI system stopped operating in April 2020.

BOILERS AND ACI/DSI SYSTEM

DTE River Rouge was designed to house three electric utility steam boilers; from east to west the boilers were named Unit 1, Unit 2, and Unit 3. Unit 1, the 2400 million British thermal unit (MMBtu) per hour boiler that was originally designed to fire coal, switched to burn oil in the early 1970s, and finally converted to combust natural gas, exclusively, in 1999.

Unit 1 was used for backup or peaking power, and it was rarely in service; it was last operated in 2005. Unit 2, a 2280 MMBtu per hour tangentially fired boiler, operated with coal and equipped with gas burners, generated electricity for the last time on November 16, 2015, after a forced outage from July 2015 to October 2015 due to a damaged turbine that was beyond a cost-effective repair. Unit 2 was only used "intermittently" to generate steam until December 11, 2015, during the periodic winter outage of Unit 3, to ensure none of the equipment in the plant froze during the outage. Units 2 and 3 were permitted to combust up to 10,000 tons of residual paint solids (RPS) from auto assembly plants. However, the usage of RPS as an alternative fuel was discontinued in late 2015. Unit 2 was officially shutdown in late March 2016 and formally retired on April 16, 2016.

Unit 3, the wall-fired, 2670 MMBtu per hour coal-fired unit, also equipped with gas burners, is the only boiler that remained in operation. The unit operated with low-NOx burners for NOx control, SO2 emissions were limited by the sulfur content of the fuel, and no add-on controls for SO2 were installed at the plant. Unit 3 was equipped with continuous emissions monitors (CEMS) for NOx and SO2 and with a continuous opacity monitor (COMS) for visible emissions. Boiler ash was wetted and discharged to trucks for transport to the Sibley Quarry; these operations were conducted in partial enclosures underneath the overhang of the ESPs.

Flue-gas from Unit 3 was treated by the DSI/ACI system to control HCl, PM and Hg emissions before entering the electrostatic precipitators (ESP) and being discharged vertically to the ambient air through a 425 feet high stack. First, the DSI, the acid gas powdered sorbent injection system controlled the HCl emissions using a sodium carbonate compound that was injected into the flue gas ductwork upstream of an air heater. The air heater kept the flue gas temperature below 350 °F to effectively capture Hg with the ACI System. The ACI system injected sorbent into the flue gas downstream of the air heater and prior the ESP. The activated carbon, stored in Silo 2, reacted with or absorbed Hg, capturing it as particulate matter in the ESP. The comingled fly ash and sorbent reaction products were removed for proper disposal utilizing the existing fly ash collection and disposal system.

Particulate emissions were controlled by electrostatic precipitators (ESP) before venting through the stack. The ESP were constructed of four parallel chambers identified as A & B (East Module) and C & D (West Module). Each chamber had six fields (1 to 6). Therefore, there were a total of 24 ESP fields for the unit boiler. Flue gas was apportioned among the chambers to achieve the best performance. Most particles were collected at the first two fields. Sparking rates of "zero" were expected at field 6. Also, for adequate performance, a minimum of three fields per chamber were to function.

Unit 3 had a circular ash silo installed between the boiler and the ESP. The silo stored fly ash from the ESP hoppers. DTE River Rouge took the wet bottom ash from the ash hoppers in the plant, and it was transferred to the silo through a different system. It was dewatered, added to the silo, and then both the fly ash and the bottom ash were rehydrated when loaded into trucks and taken offsite. The ash loading area was a partial enclosure allowing for truck traffic but with flaps extending down at the truck entrance and exit points. The ESP and associated supports overhang the area to the north and the boiler house located to the south. Particulate emissions from Unit 3 silo to exit the area was to the west.

According to the semiannual reports, Unit 3 stopped burning coal at the end of May 2020. The ACI/DSI ceased its operations when Unit 3 boiler stopped burning coal. In July 2020 and August 2020, the boiler only fired natural gas and coke oven gas, and it did not operate from September to December 2020. Therefore, the boiler only ran for a total of 125 days in year 2020. That's approximately 1/3 of the calendar year 2020. In 2021, Unit 3 operated 44 days; 17 days in February (from 2/12 to 2/28) and a total of and 27 days in March (from 3/1 to 3/25) and (from 3/30 to 30/31).
On July 9, 2021, all three boilers, the ancillary equipment and the stacks associated with their operations were still at the plant; but they were all disconnected and inoperable.

DTE River Rouge requested the exclusion of Unit 2 and the applicable requirements from the current permit in 2016 (see details in Section 4 of this report).
Unit 1 has not been in operations for more than 14 years; however, DTE River Rouge had not requested to remove Unit 1 from the permit because that boiler is owned by DTE River Rouge Unit 1 LLC.
Just recently, in 2021, DTE River Rouge got permission to permanently retire Unit 1 (see details in Section 4 of this report).
Unit 3 officially retired on June 1, 2021and DTE River Rouge requested the exclusion of Unit 3 and the applicable requirements from the current permit. (see details in Section 4 of this report).

PORTABLE BOILER, PEAKERS, AND EMERGENCY GENERATORS
DTE River Rouge operated a limited-used, 235 MMBtu per hour, natural gas-fired Auxiliary Boiler installed in 1987. The purpose of the Auxiliary Boiler was to provide steam to the plant and to other nearby customers when the main boilers were down. The Auxiliary Boiler was not connected to a turbine and generated no electricity for the grid. The repairs to maintain the Auxiliary Boiler in service appeared to be too costly and DTE River Rouge decided to shut it down in May 2013. Consequently, to comply with the contract steam supply to U.S. Steel during outages of the main boilers, DTE River Rouge leased a Portable Boiler. The leasing of the Portable Boiler became more frequent and DTE River Rouge decided to purchase the approximately 40-year-old Portable Boiler from the rental company during the fourth quarter of 2014. The unit is a natural gas-fired Portable Boiler nominally rated at 33.5 MMBtu per hour heat input and 150 psi. The equipment (located in a trailer) was brought to the plant on November 1, 2014, and it is permanently installed at the site, starting its operations on April 20, 2015. All the meters and monitoring system used with the former Auxiliary Boiler have been connected to the Portable Boiler.
There are also four 28.4 MMBtu per hour diesel fueled generators connected to the electrical grid and operate as peaking units (Peakers) for black start. No add-on emissions controls are associated with the Portable Boiler or Peakers; sulfur emissions from the Peakers are limited through the sulfur content of the fuel.
The facility has three diesel generators, each rated at 10 kW (or 13.4 hp), located in the coal yard to provide emergency lighting in the event of a blackout. There are four parts-cleaners, two located in the maintenance machine shop and the other two in the fuel supply area.

3 - REGULATORY BACKGROUND

The analysis of the regulations applicable to the operations at DTE RR was conducted when all the original equipment and processes were operating. Since then, there have been substantial changes to the operations and a reevaluation is pertinent. However, that won't be part of this report, but will be revisited during the ROP renewal process. For now, this section is limited to recap the historical regulatory information that has been presented in previous inspection reports.

DTE River Rouge is a New Source Review major source for carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO2), and particulate matter (PM). The source is also a Clean Air Act Section 112 major source for Hazardous Air Pollutants (HAPs), primarily due to emissions of hydrogen chloride (HCl). Therefore, the source is subject to the Title V program, known as the Renewable Operating Permit (ROP) program in Michigan. Unit 1 is subject to New Source Performance Standards (NSPS) at 40 CFR 60, Subparts Da and it is also subject to the National Emissions Standards for Hazardous Air Pollutants (or MACT) at 40 CFR 63, Subpart DDDDD. Unit 3 is subject to the MACT standards at 40 CFR 63, Subpart UUUUU, including the limits

for filterable PM, HCl and Hg. Unit 3 and its electrostatic precipitator (ESP) controls are subject to the federal Compliance Assurance Monitoring (CAM) regulation at 40 CFR 64. The newer portions of the coal handling system are regulated under the NSPS at 40 CFR 60, Subpart Y. The diesel peaking units and the emergency generators at the site are subject to the MACT standards at 40 CFR 63, Subpart ZZZZ. Fugitive dust emissions are regulated under State Implementation Plant (SIP) Order No. 9-1993, which has been incorporated into the ROP.

A Portable Boiler designed to burn natural gas is permanently located at the facility since 11/1/2014 and substituted the Auxiliary Boiler installed in 1987 (limited-used boiler regulated under 63.7499(o) of 40 CFR Subpart DDDDD) which operated until May 2013. DTE River Rouge submitted a notification letter to AQD indicating that the Auxiliary Boiler was permanently inoperable. Consequently, the requirements cited in the ROP for the Auxiliary Boiler (EU-AUX_BOILER) are no longer applicable.

The Portable Boiler, with 33.5 MMBtu per hour heat input, is exempt from the requirements of Rule 201 to obtain a PTI under exemption R336.282(2)(i) – indirect heating, natural gas firing equipment with heat input rate less than 50 MMBtu per hour. The Portable Boiler has a fabrication date of January 9, 1975, therefore; it is not subject to the New Source Performance Standards (NSPS) at 40 CFR 60, Subparts Dc. However, it is considered an existing source regulated under the National Emissions Standards for Hazardous Air Pollutants (or MACT) at 40 CFR 63, Subpart DDDDD. There are no emission limits or operating parameter limitations associated with MACT regulations applicable to the Portable Boiler. The only requirements are a one-time energy assessment and an annual tune-up.
Units 1 and 3 boilers were subject to the federal Acid Rain (AR) regulations and to the Cross-State Air Pollution Rule (CSAPR). CSAPR requires fossil fuel-fired EGUs at coal-, gas-, and oil-fired facilities in 27 States (Michigan is one of them) to reduce emissions to help downwind areas attain compliance with the ozone NAAQS. Starting on May 1, 2017, the CSAPR Update ozone season (May 1 through October 31) NOx program replaced the original CSAPR ozone season NOx program. The Acid Rain permit expires in conjunction with the facility's ROP, and the renewal is issued at the same time of the ROP renewal. CSAPR requirements of 40 CFR Part 97, Subparts AAAAA, BBBBB and CCCCC are incorporated as an appendix into the ROP during the renewal process. The compliance determination with the Acid Rain and CSAPR regulations is primarily performed by the US EPA at the end of every compliance period through the acceptance and evaluation of the data submitted directly by DTE River Rouge to the EPA Clean Air Markets program. This process is called annual reconciliation.

4 - AIR PERMITTING HISTORY AND ROP LATEST REVISIONS

The initial ROP for DTE River Rouge was issued on 9/22/2003. AQD issued the renewal MI-ROP-B2810-2012 on 4/1/2012. Since 2012, DTE River Rouge has received approval for ROP minor modifications to incorporate various Permits to Install (PTI) that have been issued after the renewal of 2012. The chronology of PTI issuance and ROP modifications is cited below. As of the publication of this report, the current permit is MI -ROP-B2810-2012c issued on August 18, 2021.

PTIs History
On 7/24/2015, AQD issued PTI 40-08G, which established new SO2 limits and recordkeeping for the coal fired Units 2 and 3, in support of 1-hr SO2 National Ambient Air Quality Standards (NAAQS). DTE River Rouge elected to establish lower pound per hour and pound per million Btu, federally enforceable SO2 emission limits by managing the sulfur content in the fuel concentrations and fuel consumption to achieve new unit specific SO2 limits. DTE River Rouge was required to comply with the new emission limits on and after January 1, 2017.

PTI 40-08G also retained special conditions and applicable requirements for the limited combustion of paint solids (RPS) in Units 2 and 3, as had been originally permitted under PTI 40-08C. PTI 40-08C allowed the combustion of RPS up to 40 tons per day and 1,000 tons per 12-month rolling time period. The issuance of PTI 40-08E on 2/14/2013 increased the annual amount to 10,000 tons. PTI 40-08E was voided on 7/24/2015 and the flexible group "FG-RPSProject" was incorporated into PTI 40-08G issued on 7/24/2015.

MI-ROP-B2810-2012a
On 12/1/2015, AQD issued MI-ROP-B2810-2012a, a minor modification to incorporate permit PTI 215-06B into MI-ROP-B2810-2012.
PTI 215-06B (issued on 5/30/2012) clarified and made corrections to the language within FG-PCI_COAL_HAND, a flexible group containing requirements for the pulverized coal injection (PCI) system at the plant.

Since issuance of MI-ROP-B2810-2012, the former Detroit Edison Company has been renamed "DTE Electric Company"; this change was incorporated into MI-ROP-B2810-2012a.

MI-ROP-B2810-2012b
On 11/1/2016, AQD issued MI-ROP-B2810-2012b, a minor modification to incorporate permits PTI 82-15A and 40-08H into Section 1 of the ROP.
AQD had approved modifications on 5/3/2016 under PTI 82-15A (the MATS Compliance Project) and PTI 40-08H (the SO2 1-hour NAAQS project). The amended permits reflected the shutdown of Unit 2 (formally retired on 4/16/2016), changes to Unit 3's SO_2 emission limits, and the removal of RPS as an alternative fuel in the boilers. PTI 82-15A replaced PTI 82-15 which had been issued on 7/24/2015 for the installation of air emission control systems, Dry Solvent Injection (DSI) and Activated Carbon Injection (ACI) on Units 2 and 3 to comply with the proposed Mercury and Air Toxics Standards (MATS) in accordance with 40 CFR Part 63, Subpart UUUUU. PTI 40-08H replaced PTI 40-08G issued on 7/24/2015.

After the ROP expiration date on 4/1/2017, DTE River Rouge submitted a renewal application on 8/22/2016 and the facility has been operating under permit shield since then. ROP renewal for this source has been put on-hold due to the continuous changes in their business operations.

MI-ROP-B2810-2012c
On August 18, 2021, AQD issued MI-ROP-B2810-2012c, a minor modification to remove Unit 1 and Unit 3 and all the associated equipment from ROP No: MI-ROP-B2810-2012b.
As a result of the shutdown of Unit 3 (officially retired on 6/1/2021) and the permanent retirement of Unit 1 on 6/7/2021, DTE River Rouge submitted two applications to AQD requesting ROP minor modifications under Rule 216(2) to remove both boiler units and the associated equipment from ROP No: MI-ROP-B2810-2012b. A cover letter dated May 21, 2021, addressed the minor modification request for Unit 3 and the associated equipment. A cover letter dated June 8, 2021, addressed the ROP minor modification request for the retirement of Unit 1 and its removal from the ROP. Both letters requested the removal of the Acid Rain Permit in Appendix 10-1 of Section 1 of the ROP, since the facility is no longer subject to the Air Rain Program. The proposed ROP minor modifications underwent the required 45-day EPA review ending on 8/16/2021 with no comments.

In conclusion, the most recent changes that have been incorporated into the ROP, which are reflected in MI-ROP-B2810-2012c, issued August 18, 2021, are summarized below.

- The following EUs & FGs (retired with Unit 3 boiler on 6/1/2021) were removed from the ROP: EU-BOILER#1, EU-BOILER#3, EU-AUX_BOILER, EU-DSI_METERTRLR, EU-ACI_SILO1, EU-ACI_SILO2, EU-FLYASH_SILO#1, EU-FLYASH_SILO#2, FG-DSI/ACI, FG-MODULAR, and FG-FLYASH-HANDLG.
- The only equipment that remains operational at the site are the ones associated with the following Flexible Groups (FG) listed on the revised permit, MI-ROP-B2810-2012c: FG-PCI_COAL_HAND, FG-FUGITIVEDUST, FG-EMERDG_FSUPPLY, FGCOLDCLEANERS, FGRULE290
- In addition to the FGs listed above, the following emission units and its associated equipment are operational onsite and will be added to the ROP during the ROP renewal: EU-PORTBOILER and EU-FIREPUMP.
- With Unit 1 and Unit 3 officially retired, the Acid Rain Program (ARP) rules and regulations are no longer applicable. Therefore, DTE River Rouge no longer has a NOx Compliance Plan or NOx Averaging Plan.
- PTI 40-08I, which established new lower SO2 hourly limits for EU-BOILER#3, became obsolete after the retirement of the boiler. Therefore, PTI 40-08I was voided by AQD on 8/24/2021.

5 - FACILITY INSPECTION

Overview
This section identifies the areas of the plant that were visited during the walkthrough and defines the scope of this inspection. A more detailed description of the unit operations, as well as the data collected, has been included in the section titled "Observations and Updates".

On 7/9/2021 I arrived at Belanger Park Drive at about 10:30 AM and signed in at the DTE River Rouge security gate. I met with Ms. Tanecia Wilson, Environmental Engineer at DTE River Rouge.

At the opening meeting, Ms. Wilson arranged a meeting with the following staff from DTE River Rouge: Mr. Nader Rajabian, Plant Manager; Mr. Greg Brant, Supervisor Plant Operations; Mr. Michael Krapp, Maintenance /Work Management, and Alisar Fawaz, Student Co-Op.
After the introductions, I stated the objective of the inspection, and I gave them a brief overview of the main topics to be discussed as part of the AQD compliance evaluation.

The purpose of the inspection was to evaluate the facility's compliance with respect to the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), and the conditions of Renewable Operating Permit (ROP) number MI-ROP-B2810-2012b.

After the opening meeting, Ms. Wilson and Ms. Fawaz remained in the room and the rest of the DTE River Rouge staff left and offered to provide help with any question during the inspection.

Before the plant walkthrough, I discussed the relevant ROP provisions and recordkeeping requirements with Ms. Wilson.

We started the plant tour at about 11:30 AM until approximately 1 PM. We met at the conference room to finish our discussions. In our discussions, I reviewed some of the records that Mr. Wilson had put together, and I requested additional information. At the closure meeting I indicated that the final status of compliance would be determined after conducting further evaluation of the records. I left the facility at about 2:00 PM.

I observed a low level of activity at the conveyor/transportation system that transfers the coal to the bunkers, and the amount of coal piles was drastically reduced compared to what I have observed in past inspections. This is a result of the reduction in coal usage after May 2020, when Unit 3 stopped burning coal.

I asked Ms. Wilson to walk me to Unit 3 and ESP control rooms. There was no operational data showed on the screens confirming the shut-down of Unit 3 and the associated equipment and controls.

We met plant personnel knowledgeable of the PCI system and the coal supply and discussed the parameters that are regularly monitored and recorded at the facility. Mr. Mike Krapp, Supervising Operator; explained the PCI coal process and the control variables. He used a flow diagram (which I have used in the past) to show me the transport overview depicting the filters, silos, and the mills for US Steel. Mr. Arthur Cross, Fuel Supply Foreman; provided an update on coal consumption and coal blending.

In this inspection I did not visit the north side area of the plant where the ACI/DSI equipment operated. I was told that the modular system was still standing but it was permanently shut down when Unit 3 ceased operations. The activated carbon storage and the silos are still located near the abandoned rail-road track facing the River Rouge Canal.

We stopped at the trailer that houses the portable boiler and the auxiliary boiler. I confirmed that the auxiliary boiler remains disconnected, and the portable boiler is connected and ready to be used when needed it. The previous inspection report noted that the auxiliary boiler was last used before May 2013 and the portable boiler was installed on 11/1/2014, starting operations on 4/20/2015. Refer to the compliance evaluation for details about the temporary boiler operations within the recent years.

Since the PCI unit was not in operation at the time of the inspection, I did not conduct visual observations on the two PCI coal mill stack.

The emergency generators were inspected, and the hourly meters were checked as we drove by the locations where they are installed. After this final drive, we proceeded to the meeting room for the records evaluation/discussion and closure meeting.

Observations, Updates and Records Review/Analysis:
For ease of documentation, I have combined the observations that relate to one another or that are common to an emission unit or group of emission units. The information included below was either gathered the day of the on-site visit, updated from past description, and/or provided via email by DTE River Rouge on 7/7/2021, 7/8/2021 and 7/21/2021.

When Units 2 and 3 were both in operation, DTE River Rouge used to run them primarily on the lower sulfur, lower Btu content Western Coal, and occasionally, to maximize the load, the fuel supply to the boilers was a mixture of 30% Eastern Coal with 70% Western Coal. The trains delivered coal at the plant two to three days per week. However, since April 16, 2016, after Unit 2 was shut down, DTE River Rouge operated Unit 3 mostly with Western Coal only, and coal delivery in year 2017 decreased to four trains per month. Two years after, during the inspection of 7/19/2019, a monthly report provided for the month of June 2019 showed that there were only two coal deliveries per month. In 2019 the plant received two trains per month of the Western Coal for Units 3, each carrying about 15,800 tons of coal. Unit 3 stopped burning coal in May 2020 and since that date it was in operation burning coke oven gas and blast furnace gas until March 31, 2021. Unit 3 officially retired on June 1, 2021, and coal is only used for PCI operations. Unit 1 has been non-operational for several years.

Currently, coal is received by railcar at the southwestern edge of the plant, and it is loaded into the bunkers Monday to Friday between 6:30 to 9:00 AM. This represents a shorter loading period compared with the information reported in past inspections, which indicated a loading period from 7 to 11 am. According to the 2019 inspection report, the PCI bunkers used to hold 3,000 tons total: 2,000 for the U.S. Steel system and 1,000 for the AK Steel system. Typically, the PCI system consumed 700-900 tons per day per system. A maximum of 700 tons / day for the AK Steel system and 900 tons / day for the U.S. Steel system. However, after U.S. Steel PCI system ceased operations in April 2020, the only coal usage is by the AK Steel PCI System and coal consumption dropped to 400 – 700 tons per day. According to the most recent records for the period 2020 – 2021 the average day PCI total coal processed at Alstom Mill was around 550 tons.

According to the information provided by Greg Bryant during the initial meeting at DTE RR, AK Steel PCI system currently receives one train of coal per month of about 13,000 tons. The operators work two hours per day to completely unload the train in about 3 to 4 days.

According to AK Steel monthly records, from June 1, 2020 to May 31, 2021, the maximum coal throughput was reported for the month of Jan 2021 as 16,095 tons. The maximum 12-month rolling was reported at the end of June 2020 as 196,433 tons per year.

Particulate control in the coal yard is accomplished through preventive measures, except at the Rail Car Dumper House. The Rail Car Dumper House consists of an enclosed structure overtop an excavated pit. A railcar charged with coal enters the Rail Car Dumper House, is secured, and then revolved to discharge coal into the pit below. The air within the structure is filtered through baghouses and vented vertically to ambient air through two stacks. Collected coal particles are returned to the coal pit below. An underground riser lifts the coal to the aboveground enclosed conveying system and the Drive House, where an enclosed stacker diverts the coal to the stockpile. As indicated earlier, the application of the dust suppressant Benetech onto the coal, at various stages in the conveying process and transfer points, (which supplanted the old filtering systems as particulate control system) has been suspended because PCI coal doesn't need it. At the time of the plant walkthrough on July 9, 2021, there were no process operation activities at the fuel supply area. Therefore, observations of the unloading of railcars at the Rail Car Dumper House and visible emissions from the baghouse stacks and/or from other activities (i.e. stockpiles, transportation conveyors, etc.) were not conducted.

The paved areas of the plant were swept, and traffic produced minimal localized dust. Signs denoting a speed limit of 15 miles per hour were noted along traffic routes.

I requested CEMS data printouts from the computerized data acquisition and handling system (DAHS) for the last day of operation of Unit 3 (March 31, 2021). The information was provided by Ms. Wilson via email on July 7, 2021. The minute-by-minute log for the operation of Unit 3 on March 31, 2021, is filed with the report in AQD files. The records showed that the boiler operated for 7 hours and 43 minutes and at 7.44 AM the process was off (indicated by the "P" status – per status legend).
It is important to note that Unit 3 stopped burning coal and switched to coke gas burning around June 2020. Therefore, the emission data for 2021 seems to reflect that change in the type of fuel. The information collected showed lower concentrations of SO2, and NOx compared to the emissions collected during the inspection of 2019. For instance, on March 31, 2021, the maximum instantaneous reading for SO2 emissions was 46.6 PPM and 53 PPM for NOx, whereas on July 19, 2019, the maximum concentrations were around 113 ppm for SO2 and 93 PPM for NOx. DTE River Rouge continued recording opacity in non-overlapping six-minute block averages. The computerized data acquisition system tracked opacity by the instantaneous reading, the current six-minute average, and the previous six-minute average. The values recorded for opacity showed negative values because the opacity was "zero". Utilizing the CEMS SO2 ppm and exhaust flow data,

the computer system tracks the tons of SO2 emitted thus far that calendar day and extrapolates to predict a calendar day total.

Most of the PCI coal processing equipment is installed on the level of the former CEMS shelter. PCI coal is stored in the former Unit 1 coal bunker and then pulverized in the Alstom mill for AK Steel. AK Steel PCI coal is transferred to a stand-alone silo at the northeastern end of the plant and then drop loaded into trucks for transport to AK Steel. The operator indicated that about 20 trucks a day of pulverized coal are loaded to send to AK Steel.
The Zug Island PCI coal system which used to transfer coal to one of the two 75-ton silos and then piped across the Rouge River, is no longer operating, As indicated earlier, the system ceased operations around April 2020.

The vertical PCI transfer stacks and the horizontal stacks were observed to be clear at the time of the inspection. The PCI silo was observed to be clear, though no truck loading was occurring at the time. No visible emissions were observed exhausting out of the Alstom mill stack (silver-colored).

Pressure drop gauges are installed across the dust collectors at the mills. Daily records of pressure drop values for the various PCI dust collectors and vent filters (in inches of water column) are maintained by DTE River Rouge. Examples of these records were provided by Ms. Wilson via email received on 7/7/2021.
The Alstom Mill does not require calibrated temperature monitors. That requirement was only required for EU-PCI_CoalMills (US Steel), which shut down. The annual calibration of the temperature monitors was completed on April 1, 2019, and the records were supplied during the 2019 inspection.

The PCI computer displays are in the "former Unit 2" control room, and they are also in the office of the PCI leader, Mr. Mike Krapp, which were the ones I checked in this inspection. Alarms and broken bag detectors are incorporated into the software as required.

The facility has four parts cleaners, I did not inspect them during this inspection. However, Ms. Wilson indicated that there have not been changes in the size or type of part-cleaners; they are all "Zep Dyna 143" cold cleaners. Two of them are in the maintenance machine shop, and two in the fuel supply tractor house.

Three diesel generators are in the coal yard to provide emergency lighting in the event of a blackout. Non resettable hourly meters are installed on each generator with operational hours displayed. Two of the generators were inspected, Generac 2 and Generac 3. I read the meters and recorded the values. The Generac 2 reading was 1,222.0 hours at 12:20 PM and Generac 3 was 782.6 hours at 12:45 PM. Log-records were also collected for two different dates, 6/29/2020 and 5/25/2021. The information is summarized and analyzed later in this report under compliance evaluation. Each generator is equipped with a tank capable of holding about 40 gallons of diesel fuel. The generators are run for 20 to 30 minutes each week to ensure reliability.

No underground fuel tanks remain at the site. There are two (2) - 1,000-gallon above ground diesel tanks behind the Tractor House and one (1) - 1,000-gallon above ground gasoline tank by the Dumpster House for fueling plant vehicles. Two open-topped storage tanks are installed near the western edge of the boiler house. The northern tank is for the storage of liquid wastes from boiler blowdowns; the southern tank is for the storage of wastewater having contacted an oil or lubricant, such as from the maintenance shop floor drains. The tanks are rarely used.

6 - ROP CONDITIONS AND COMPLIANCE EVALUATION

General Provisions: MI-ROP-B2810-2012b, General Conditions
In general, this evaluation covers the evaluation of records for the period from June 1, 2020, to May 31, 2021. However, there are instances where historical data, or other periods (annual, semiannual etc.) are evaluated.

9, 10 – Compliance – Collected air contaminants shall be removed to maintain controls at required collection efficiency; air cleaning devices installed and operated in a satisfactory manner – The controls are installed, and they seem operate properly. Dust suppressants are utilized in addition to add-on particulate controls.

11 – Compliance – Visible emissions limited to 20% opacity over a six-minute average, except for one six-minute period per hour where the average may not exceed 27%, unless otherwise specified in the ROP or in a federal NSPS. This limit applies to point source (non-fugitive) emission units at the plant – All boilers were permanently shut down and there were not any coal transport activities at the plant site at the time of the visit on 7/9/2021. I did not observe visible emissions exceeding 20% opacity.

12 – Compliance – Nuisance emissions prohibited – During the evaluated period, the AQD Detroit Office did not receive any citizen complaints related to fallout or odors attributed to DTE River Rouge operations.

19 through 23, 25 (and under individual EU/FG tables at SCs VII.1 through 3) – Compliance – Semiannual deviation reports, Rule 912 reports, compliance certifications and report certifications – For both sections of the ROP (1 and 2), the semiannual deviation reports and annual certifications were timely submitted in accordance with the terms and conditions cited on the ROP. For compliance details, please refer to the Full Compliance Evaluation (FCE) summary for the specific semiannual and annual reports received by AQD Detroit District Office.

24 – Compliance – Submissions to the Emissions Inventory – The 2020 estimated emissions from DTE River Rouge were reported online through the Michigan Air Emission Report System (MAERS). The information was timely submitted and received by AQD on 3/8/2021. The ROP MAERS report certification was received (or postmarked) on 3/15/2021. AQD audited the report and approved it on 5/25/2021. For details of the audit please see compliance activity report CA_B281058198.

UNIT 1: MI-ROP-B2810-2012b, EU-BOILER#1

Installed in 1953, Boiler No. 1 (or Unit 1) is a 2400 MMBtu per hour natural gas-fired unit equipped with Low-NOx burners and flue gas recirculation. Modified in 1999 through a conversion to natural gas-fire, Unit 1 is subject to NSPS Da, MACT DDDDD, the federal Acid Rain program, and CAIR regulations).

Unit 1 has not operated since 10/22/2005 but the Unit is still listed on the ROP as active source. DTE River Rouge submitted quarterly reports to show compliance with the reporting requirements for EU-BOILER#1.

Due to the inactivity of Unit 1, no further discussion will be presented in this report regarding the ROP special conditions and requirements. If interested in the evaluation and/or the applicability of the above cited regulations to Unit 1, when the boiler was active, please refer to the inspection report dated 9/17/2013, under the sections labeled "UNIT 1: MI-ROP-B2810-2012, EU-BOILER#1". Also read "MACT DDDDD for Steam Boilers and Process Heaters" in this report.

Auxiliary Boiler: MI-ROP-B2810-2012b, EU-AUX_BOILER

A 235 MMBtu per hour natural gas-fired Auxiliary Boiler, without add-on air pollution control equipment was installed in 1987. This unit, subject to NSPS Db and MACT DDDDD, operated infrequently and provided steam to customers in the event the boilers in the main plant were down. The unit remains on-site but has been nonoperational since May 2013. According to the 2013 quarterly CEMS/COMS reports submitted for Units 2 and 3, the Auxiliary Boiler only operated one (1) hour in the second quarter and one (1) hour in the fourth quarter, for testing purposes. A rented portable boiler operated 108 hours for steam production. DTE River Rouge submitted a notification letter to AQD indicating that the Auxiliary Boiler was permanently inoperable. Starting 2014, the terms and conditions cited on the ROP for EU-AUX_BOILER are no longer applicable and are not discussed in this report. EU-AUX_BOILER was replaced with a Portable Boiler. Off-permit changes were introduced by DTE River Rouge on September 30, 2015 for the Portable Boiler and its MACT requirements. The minor modification approved on 8/18/2021 removed the EU-AUX_BOILER requirements from the ROP. The compliance requirements for the Portable Boiler will be discussed under section "MACT DDDDD for Steam Boilers and Process Heaters".

PORTABLE Boiler: NSPS Db for Steam Boilers – Not applicable

The federal New Source Performance Standards (NSPS) at 40 CFR 60, Subparts A and Db regulates industrial, commercial, and institutional steam generating units that commenced construction, reconstruction, or modification after 6/19/1984 and have a maximum heat input capacity greater than 100 MMBtu per hour. For the period between May 2013 and November 2014 DTE River Rouge leased a "Portable Boiler". The Portable Boiler was subsequently installed at DTE River Rouge on 11/1/2014 and it started normal operations on 4/20/2015.The Potable Boiler has a fabrication date of January 1, 1975, and a 33.5 MMBtu per hour heat input; therefore, the unit is not subject to the NSPS regulation.

PORTABLE Boiler: MACT DDDDD for Steam Boilers and Process Heaters – In Compliance

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and DDDDD (MACT DDDDD) regulates hazardous air pollutants (HAP) emissions from boilers and process heaters installed at major sources of HAPs. DTE River Rouge is a major source of HAPs.

MACT DDDDD applies to industrial boilers, commercial boilers, institutional boilers, and process heaters (40 CFR 63.7490(a) through (e)). An "industrial boiler" is defined at 40 CFR 63.7575 as "a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity." Both Unit 3, and the Portable Boiler produce steam or electricity and therefore are considered industrial boilers. However, Unit 3 is an electric utility steam generating unit (EGU) regulated by MACT UUUUU and therefore, by 40 CFR 63.7491(a), is not subject to regulation under MACT DDDDD (please see report B281018764). Per 40 CFR 63.9981 and 40 CFR 63.10042, the Portable Boiler is not subject to MACT UUUUU because it does not produce electricity for sale and therefore it does not meet the definition of an EGU under the standard. Excluded from regulation under MACT UUUUU, the Portable Boiler thus default to regulation under MACT DDDDD.

Construction on the Portable Boiler commenced prior to 6/4/2010 and therefore is considered "existing" industrial boilers (40 CFR 63.7490(d)). It combusts natural gas, so fall within the definition of a "unit designed to burn gas 1 subcategory" at 40 CFR 63.7575. At 40 CFR 63.7490(a)(1).

DTE River Rouge also operates natural gas fired-coal mill heaters within the PCI process. The combustion gases directly contact the coal within these units and therefore this equipment does not meet the definition of "process heater" at 40 CFR 63.7575: "process heaters are devices in which the combustion gases do not come into direct contact with process materials." These units are regulated as thermal dryers under the NSPS Y for Coal Preparation Plants.

Compliance with MACT DDDDD is required not later than 1/31/2016 for existing boilers and process heaters (40 CFR 63.7495(b)). An Initial Notification dated May 30, 2013, post marked by AQD on June 3, 2013, was received from DTE River Rouge for this standard as it applied to the former Auxiliary Boiler (EU_AUX_BOILER). In January 2015, DTE River Rouge submitted an amendment to the 2013 Initial Notification requesting the revision of the classification for EU_AUX_BOILER to the limited use subcategory as defined in 40CFR 63.7545. However, later in the year, DTE River Rouge dismissed the request due to the replacement of the existing Auxiliary Boiler with the Portable Boiler.

The 33.5 MMBTU/ hr. portable boiler is capable of firing 30,000 scf of natural gas per hour at the boiler's maximum steady state design capacity. DTE River Rouge has demonstrated compliance with the applicable work practice standards requirements cited under 40 CFR 63.7499 (l) as described below:

On March 9, 2021, AQD received (via email) a copy of the 40 CFR Subpart DDDDD tune-up compliance report as it was submitted by DTE River Rouge on the Compliance and Emissions Data Reporting Interface (CEDRI). The report was submitted in compliance with 63.7550(c)(1) for existing Units in the 63.7499 (l): Unit designed to burn gas 1 fuels. It covered the period from January 1, 2020, to December 31, 2020, and it was timely submitted in the reporting year immediately following the tune-up. The report contains information required under 63.7550 (c)(5) (ii to iii); as well as 63.7550 (c)(5) (xiv) and 63.7550 (c)(5) (xvii). According to the report, the most recent tune-up and burner inspection per 63.7550 (c)(5) (xiv) was on 10/22/2020, which is in compliance with the required annual tune up frequency. Based on the information submitted on the IB-MACT Tune-up report, all components listed on the regulatory requirements were inspected and the equipment is maintained following the work practice standards for this type on units. The report also stated the usage of pipeline quality natural gas. DTE River Rouge compliance certification signed on 2/25/2021, was also submitted. There are no emission limitations associated with 40 CFR 63 Subpart DDDDD.
In addition, for this inspection I asked for the Portable Boiler run hours and natural gas usage for the period 6/2020 to 5/2021. According to the records, in a 12-month period, the equipment operated for 2,924.5 hours or 122 days (24-hr average) and the natural gas usage was 75,282 thousand cubic foot total.

PORTABLE Boiler: Part 8 Rules for NOx Sources

Michigan's Part 8 rules were promulgated in response to interstate ozone transport issues identified under Section 110(a)(2)(D)(i)(I) of the Clean Air Act. The Part 8 rules incorporate requirements imposed first by the federal NOx Budget Program and by the former CAIR program with some additional provisions. Broadly, the Part 8 rules apply to fossil fuel-fired steam generating units producing electricity for sale while serving a generator with a nameplate capacity of 25 MW or more (e.g. Rules 801(2), 802(1)(a), 821(1)(a), 821(1)(b))

and any other source of NOx with a heat input capacity greater than 250 MMBtu per hour (e.g. Rules 801(4), 802(1)(b), 821(1)(c)). The Portable Boiler does not qualify under either category.

UNIT 3: MI-ROP-B2810-2012b, EU-BOILER 3, DSI/ACI SYSTEM, FG-FLYASH-HANDLG

Installed in 1955, Boiler No. 3 (or Unit 3), a 2670 MMBtu per hour coal-fired unit equipped with Low-NOx burners and an electrostatic precipitator (ESP). Unit 3 was subject to the federal Acid Rain Program and to the Mercury Air Toxic Standards (MATS) for coal-fired electric utility steam generating units.

Unit 3 and all associated control equipment had permanently shut down. The final reports on the boiler performance and operation (e.g., ROP Semiannual and Annual Deviation Reports, Excess Emissions and Downtime Quarterly Reports, Semiannual CAM Excursion/Exceedances Report, MATS Semiannual Reports, PM CEMS Certification Reports, Hg Sorbent Trap System Certification Reports, Quarterly Reports for HCl testing, etc.) were timely received and reviewed by AQD. They showed substantial compliance with the applicable requirements. The submittals are documented in the Full Compliance Evaluation (FCE) summary prepared for the 2021 inspection and will not be further discussed in this report. On August 18, 2021, after the permanent shut down of the emission units and subsequent to the inspection of July 9, 2021, the ROP modifications were finished to reflect the permanent retirement of the cited emission units and MI-ROP-B2810 -2012c was issued.

During the inspection, I asked for records associated with Unit 3 and ESP routine maintenance for optimal performance. DTE River Rouge provided the following information:
The last inspection to test and tune Unit 3's Low-Nox burners was completed 2/17/2019 and that report was provided during the previous inspection in 2019. DTE's engineering team has performed post tune-up activities to ensure the boiler is performing as optimally as possible and those activities included visual inspections of the boiler and inspection of the boiler's furnace for plugging and tube leaks. In addition, the boiler underwent an explosive cleaning to ensure its performance. The most recent activities took place in June 2020 and work orders were provided for reference.

The ESP was inspected during the last outage in April 2019. At that time, the ESP underwent a series of in-depth inspections and repairs such as testing and inspecting grounding issues in low performing precipitation sections, replacing breakers, performing explosive cleanings and performing field inspections. The Spring-2019 report highlights the work done for both the ESP and the boiler. Work orders highlight work done on ESP in 2019. The ESP went out of service in June 2020 shortly after the plant stopped burning coal.

COAL HANDLING EQUIPMENT: MI-ROP-B2810-2012b, FG-PCI_COAL_HAND

FG-PCI-COAL_HAND is a flexible group containing requirements for the pulverized coal injection (PCI) system - the equipment for the handling and processing of PCI coal.

I.1 and 2, II.2 and 3, V.1, VI.1 and 3 – Compliance – Nitrogen oxides from each coal mill heater not to exceed 0.12 pounds per MMBtu heat input; nitrogen oxides from the coal mill heaters, collectively, not to exceed 48.1 tons per 12-month rolling time period; stack test upon AQD request; NOx emission rate through test or emission factor maintained on file; collective natural gas usage limited to 76.3 million cubic feet per month and 801 million cubic feet per 12-month rolling time period; natural gas usage records required. Please see Appendix A to the submittal of 11/14/2003, where it is reported NOx emissions were measured at 0.095 pounds per MMBtu during a stack test of 1/9/1997 on the heaters for the four B & W coal mills. AQD has not requested a test on the Alstom coal mill heater, however, in the supplement to the 9/19/2013 submittal received 1/21/2014 DTE River Rouge reports a stack test of 7/29/2008 measured NOx emissions at 0.006 pounds per MMBtu.
The NOx annual emission limit is correlated to the pound per heat input limit and annual natural gas usage. Sample of natural gas monthly records for period June 2020 to May 2021 were received via email and indicated a monthly maximum of approximately 5.36 million cubic feet recorded at the end of January 2021 and a maximum of 43 million cubic feet of natural gas for the 12-month rolling time period recorded at the end of June 2020. The maximum NOx emissions per 12-month rolling time period showed values of 2.2 tpy at the end of June 2020.

I.3 – Compliance – Particulate matter limited to 0.031 grains per dry standard cubic foot for each coal mill pursuant to the thermal dryer requirements within NSPS Y, Standards of Performance for Coal Preparation Plants, at 40 CFR 60.252(a)(1). Please see section below on NSPS Y relating to the initial performance tests on each coal mill dryer; no subsequent tests have been requested by the AQD.

I.4 through 18, VI.4 – Compliance – Particulate matter limits for PCI equipment expressed in grains per cubic foot (gr/cf) of exhaust air corrected to 70°F and 29.92 inches Hg, in pounds per hour (pph), and tons per year (tpy): B & W coal mill stack (0.002 gr/cf, 1.83 pph, 8.03 tpy); Alstom mill stack (0.003 gr/cf, 1.58 pph, 6.90 tpy); each transfer system stack (0.006 gr/cf, 0.33 pph, 1.43 tpy); transport vessel stack (0.01 gr/cf, 0.025 pph, 0.11 tpy); truck loading and coal silo vent filters (0.005 gr/cf, 0.30 pph, 1.30 tpy). Records of test data to be maintained; if test data is not available, emission factors utilized for compliance, shall be maintained.
Stack tests conducted on 1/9/1997 (please see Appendices A and B of the 11/14/2003 submittal) measured particulate emissions in the following concentrations: 0.0016 grains per dry standard cubic foot (gr/dscf) from the B & W coal mill stack, 0.0007 gr/dscf from the North Bag Filter House (a transfer system emission point), 0.0007 gr/dscf from the South Bag Filter House (a transfer system emission point), and 0.00033 gr/dscf from the Area 3 Fine Coal 75-Ton Silo Baghouse (the transport system emission point). A stack test conducted on 7/29/2008 (please see submittal of 3/22/2010) at the Alstom mill measured particulate emissions at 0.001 gr/dscf. Compliance with the concentration, pound per hour, and ton per year limits for the truck loading/coal silo vent filters are assumed at this time; no stack tests have been conducted on these vents.
Each pound per hour limit is based on the concentration limit and the maximum exhaust gas flowrate; each ton per year limit is based on pounds per hour limit and the maximum 8760 hours of operation in a year. Therefore, compliance with the pounds per hour and tons per year limits is presumed based on stack test compliance with the concentration limits.
For the inspection of 7/9/2021 AQD evaluated the emissions records corresponding to a 12-month rolling period from 6/1/2020 to 5/31/2021 for each regulated PCI equipment/emission point. For each PCI emission point, PM emissions for the evaluated period showed values below the ROP tons per year (tpy) limits, ranging from 0.01 tpy to 0.02 tpy.

I.19, VI.7 and 8 – Compliance – Visible emissions limited to 5% over a 6-minute average from any stack within the flexible group; daily non-certified Method 22 visual observations on the PCI stacks; if opacity is noted conduct a certified Method 9 or shut down the process; conduct inspection on dust collector following visible emission observation and log observations, shutdowns, results of inspections, and corrective actions.
The PCI equipment was not operating during the inspection of 7/9/2021, visible emissions observations from the operations or associated stack, were not pertinent. Sample records of visible emissions observations for 5/24/2020 through 5/30/2020 were provided for this inspection; observations are made twice a day at 7:00 AM and 7:00 PM. The operators did not report visible emissions during the cited dates.
At 60.252(a)(2) and 60.254(a), each thermal dryer, coal processing and conveying equipment, coal storage system, and coal transfer and loading system that is an affected facility under the standard is prohibited from emitting gases which "exhibit 20 percent opacity or greater." For PCI equipment subject to the NSPS Y visible emissions standard compliance with the 5% opacity limit also demonstrates compliance with the less than 20% standard. Please see section below on NSPS Y relating to the initial performance tests conducted on the PCI equipment.

II.1, VI.2 – Compliance – Coal throughput in PCI pulverizers limited to 1,091,160 tons per 12-month rolling time period as determined at the end of each calendar month; monthly and 12-month rolling coal throughput records required – Monthly records of collective PCI Coal throughput for a 12-month period from June 1, 2020 to May 31, 2021 were provided for this inspection. Records for the 12-month rolling period, reported 196,432 tons of coal throughput in the PCI pulverizers at the end of June 2020. AQD reviewed historical records submitted for the past two inspections. For a similar 12-month period the coal processed was 298,525 tons in 2019 and 290,934 tons in 2016. There is a significant reduction in the PCI coal processed due to the cessation in operations of the US Steel PCI Coal Mills.

III.1 through 3, VI.5 and 6 – Compliance – Air pollution control equipment to be installed and operated properly; broken bag detectors and pressure drop gauges with alarms to be installed on all PCI dust collectors/vent filters and daily readings taken, when coal is transported; maximum pressure drop values are as follows, in inches of water column: B & W coal mills = 8; transfer systems =8; transport system =12; Alstom mill = 6; coal silo =6; truck loading = 6.
DTE River Rouge has indicated in the past that alarms and broken bag detectors are incorporated into the PCI software, though this was not confirmed for every dust collector/vent filter. PCI pressure drop records for the period 5/9/2021 through 5/15/2021 were provided. Measured pressure drops are within the ROP required ranges.

VI.9 – Compliance – Exhaust temperature from each coal mill to be continuously monitored; monitoring devices to be certified accurate to within 3°F and recalibrated annually –
According to Ms. Wilson (DTE RR), EU- PCI_Alstom Coal mill does not require calibrated temperature monitors. That requirement is only for EU-PCI_CoalMills. The calibration is valid for a year and the last

calibration of the monitoring device was completed on April 1, 2019. The work order was supplied during previous inspection in July 2019.

VIII.1 through 7 – Compliance – Stack maximum diameters (inches) and minimum exhaust heights (feet) as follows: coal mills (63", 200'), transfer system #1 (18", 145'), transfer system #2 (18", 145'), transport vessel (12", 176'), Alstom mill (63", 200'), coal silo (8", 157'), truck loading (8", 12'). Exhaust gases must vent unobstructed vertically upwards except for the transport vessel, the coal silo, and the truck loading system, each of which may vent horizontal – Visual observation of the stacks during the inspection of 7/9/2021 did not raise a question of non-compliance with stack specifications, though stack height and diameter measurements were not performed.

IX.1 – Compliance – Comply with all applicable requirements of NSPS A and Y – Please see section related to NSPS Y.

COAL HANDLING EQUIPMENT: NSPS Y FOR COAL PREPARATION PLANTS

The federal New Source Performance Standards, Subparts A and Y (NSPS Y), regulates affected facilities at coal preparation and processing plants processing greater than 200 tons per day of coal that commenced construction or modification after October 27, 1974. NSPS Y was last amended on October 8, 2009. A coal preparation and processing plant is defined at 40 CFR 60.251(e) as a facility that "prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying." The installation dates for the Zug Island (10/24/1996) and AK Steel(7/31/2007) PCI equipment postdates the original applicability date (10/27/1974) and predates the applicability date (4/28/2008) for the NSPS revisions (60.250(b)). From the coal data given in the 8/25/2011 submittal, both processes utilized greater than 6200 tons of coal in nearly every month of operation from 7/2010 through 6/2011 (60.250(a)) and therefore exceed the 200 ton per day threshold.

The coal grinding mills reduce the size of the coal and therefore qualify as coal processing and conveying equipment (60.250(b) and 60.251(f)), and thus likewise the transfer, transport, and storage equipment are also subject (60.250(b), 60.251(h) and (s)). In addition to grinding the coal, the heaters within the mills dry the bituminous coal via direct heat and therefore qualify as thermal dryers under the standard (60.250(b) and 60.251(r)(1)).

60.8, 60.252(a)(2), 60.254(a)(2), 60.254(a) – Compliance – Emission limits and initial performance tests. At 60.252(a)(1), the owner/operator of a coal preparation plant "shall not cause to be discharged into the atmosphere from any thermal dryer gases which contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf)." At 60.252(a)(2) and 60.254(a), each thermal dryer, coal processing and conveying equipment, coal storage system, and coal transfer and loading system that is an affected facility under the standard is prohibited from emitting gases which "exhibit 20 percent opacity or greater." Under 60.8, initial performance tests are required for applicable emission limits and visible emissions not later than 180 days after initial startup.

On 1/25/2010, DTE River Rouge submitted a 2/17/1997 report of particulate matter tests conducted on 1/9/1997 at the four original coal mills. On 3/22/2010, DTE River Rouge submitted a 9/8/2008 report of a particulate matter test conducted on 7/29/2008 at the Alstom mill. On 5/17/2010, DTE River Rouge submitted a report of visible emissions observations conducted in February and March of 2010 on the PCI equipment. The AQD accepted the results of each as a successful initial compliance test, despite noting certain deficiencies in the tests. Please see reports B281010158, B281009871, and B281009405 for AQD's review of the initial performance tests.

COAL HANDLING EQUIPMENT: MI-ROP-B2810-2012b, FGRULE290

R 336.1290 exempts from R 336.1201 those sources with limited emissions. The rule is divided into three general sections and further divided into subsections, depending on the type of emission (VOC, particulate, etc.), the carcinogenicity of the emissions, and the health-based screening level(s) of the emissions.

I.2 and 3, III.1, VI.1 through 3 – Compliance – Emissions less than 1000 pounds per month uncontrolled, and 500 pounds per month controlled; 0.01 lbs. particulate per 1000 lbs. gas; controlled by dust collector or equivalent installed and maintained; 5% opacity limit and monthly visible emission observation; description on file and records maintained.

DTE River Rouge claims the Rule 290 exemption for the coal handling transfer points in the coal yard and in the coal bunkers. These are coal processing emission units with the potential to emit particulate. Each emission point is controlled with either a dust collector or with the application of a dust suppressant. There were not coal handling/transfer activities occurring at the time of the plant tour during the inspection of 7/9/2021; therefore, no visible emissions were observed on viewing at any of the coal transfer points.

Required records are as follows for each emission unit: written description of the emission unit and control device, including the design control efficiency and exhaust gas flowrate; identify air contaminants emitted, carcinogenicity, screening level, and level of control; monthly emissions calculations; record of monthly visible emission readings.
Records collected in this inspection listed the estimated PM10 emissions from each dust collector unit for the month of May 2021. The PM10 uncontrolled emissions from each emission unit in the coal handling equipment area showed values ranging from 151.15 pounds to 302.30 pounds.
AQD noticed that the emission factor EF (0.013 lb/ton) and the control efficiency (50%) used in the calculations to estimate PM10 emissions for the month of May 2021 differs from the values used by DTE River Rouge in the MAERS emission estimates for year 2020. In the 2020 MAERS report the controlled emissions were calculated based on 99% control efficiency and the EF was 0.006 lb./ton. However, even when the calculations provided used a higher EF (compared to the MAERS EF), the PM10 emissions from each emission unit of the flexible group FGRULE 290, ranged from 76 to 151 pounds per month, which are still below the limit of 500 pounds per month for controlled emissions.
Visible emissions records are kept electronically, and the paper records are discarded once the information is entered in the computer. The logs titled "Fuel Supply Environmental Log" showed no visible emissions. These logs contain diverse type of information, involving activities related to the implementation of the Fugitive Dust Management Plan (i.e. water wagon usage, truck wheels washed, etc.).

FUGITIVE DUST SOURCES: MI-ROP-B2810-2012b, FG-FUGITIVEDUST
Comprises the collection of fugitive dust sources at the site.

I.1 and 2, V.1 – Compliance – Visible emissions not to exceed 5% opacity from any lot, storage pile, or material handling activity, and not to exceed 20% opacity otherwise; opacity to be determined by the average of 12 consecutive readings recorded at 15-second intervals in accordance with Test Method 9D; visible emissions readings to be conducted upon request of AQD.
At the time of the plant tour on 7/9/2021, there was no activity taken place at the coal handling operations including the conveyors, front end loaders, ash loading, and vehicular traffic; no opacity observations or Method 9D readings were conducted from any of these operations.

III.1, VI.1, VII.4, IX.1 – Compliance – Fugitive dust plan in Appendix 9-1 shall be implemented and maintained, and required records kept; quarterly report required within 30 days after the calendar quarter identifying each day an emission limit, operational requirement, or recordkeeping requirement was not met, the reason why, and the remedial action taken; conditions that are solely from the SIP Consent Order 9-1993 are void upon the termination of the order.
Please see section below on Appendix 9-1. SC VII.4 requires a quarterly report detailing instances of non-compliance with the provisions of the SIP Order. The SIP Order pre-dates the ROP for the source and the semiannual deviation reports attendant to it. While DTE River Rouge has not been submitting quarterly reports, the SIP Order has been incorporated into the ROP and the facility is required to report deviations with ROP requirements on a semiannual basis. Therefore, AQD considers DTE River Rouge to be in compliance with this requirement.

FUGITIVE DUST SOURCES: MI-ROP-B2810-2012b, APPENDIX 9-1 AND SIP CONSENT ORDER 9-1993
Appendix 9-1 includes the fugitive dust provisions of SIP Consent Order 9-1993, revised and reissued on 9/9/1994.

A through F – Compliance – General provisions for paved roads, unpaved roads, storage piles, and materials handling, as specified below, with recordkeeping requirements.
Paved roads: (i) speed limit of 15 mph posted and enforced; (ii) paved roads to be swept or flushed in the spring, summer, fall, and winter when freezing is not a concern. In general, a semimonthly frequency is required for travel lanes and a monthly frequency for non-travel lanes; at a minimum, all non-travel portions of paved lots must be treated once each spring, once each summer, and once each fall.
Unpaved roads: (i) sprayed with suppressant at rate of 0.1 gallons per square yard at a frequency of either once per year or three times per year, depending on location; (ii) additional control measures to be taken to reduce fugitive dust.
Storage piles: (i) compacted and configured to reduce emissions; (ii) pile height a maximum of 50 feet; (iii) haul roads watered weekly unless recent rain or unless freezing is a concern; (iv) mobile equipment exhaust to be directed upwards; (v) excessive spillage removed within 48 hours; (vi) additional control measures taken as necessary.
Materials Handling: (i) rail delivery in enclosed rotary dumper; (ii) pile unloading by underground reclaiming and surface conveyors; (iii) conveyors covered and maintained; (iv) dust collectors and physical curtains in

use when dry loading ash trucks; (v) ash to be wetted prior to loading in trucks leaving the site; (vi) ash truck wheels cleaned prior to leaving ash silo area; (vii) ash area flushed each day after loading is complete. Documentation of required activities to be kept in a log for a period of three years; information generally as follows: date of treatment or control activity, location of application, control measures used, quantity of control measures used, responsible person.
Speed limit signage was noted, and plant roadways were clean.
Due to inactivity in the area at the time of the plant tour, no emissions observations were conducted in the area of coal transfer and stockpiling operations. No visible emissions were observed exiting the Rail Car Dumper House since coal unloading was not occurring. Ash loading was not observed.
In general, the roads and storage piles are watered five times a week from April to June.
Sweeper is used quite frequently during the months of May and June, but not in April due to recurrent heavy rains.
Sample records in the form of "work orders" for the treatment of unpaved roads were provided for the work done in the following dates: 11/21/2020 and 5/8/2021. The information includes: the product name, the dilution ratio, the gallons of product used, the arrival time, departure time, and the completion date.

EMERGENCY GENERATORS: FG-EMERDG_FSUPPLY; MACT ZZZZ and NSPS IIII FOR ENGINES
Three emergency generators are installed at the plant: each 10-kW operating on diesel fuel and with an order date of 10/18/2006. Each generator is exempt from the requirements to obtain a permit to install. R 336.1285 (g) exempts internal combustion engines with a heat input capacity less than 10 MMBtu per hour. Assuming a thermal to mechanical conversion of approximately 33% a 10-kW output generator requires a fuel input of about 0.1 MMBtu per hour; each emergency generator qualifies for Rule 285(g) exemption.
The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP), Subparts A and ZZZZ (MACT ZZZZ) regulates hazardous air pollutants (HAP) emissions from reciprocating internal combustion engines (RICE) and these regulations integrate the requirements from within the NSPS Subpart IIII for stationary compression ignition (i.e. diesel fueled) internal combustion engines. The three emergency generators are each rated at 10 kW (or 13.4 hp) and were ordered from the manufacturer on 10/18/2006 (8/9/2011 submittal), therefore, each generator is classified as a new stationary RICE under 63.6590(a)(2)(ii) because each was constructed after 6/12/2006. Per 63.6590(c) and (c)(6), emergency generators such as these (less than 500 hp) need to comply only with the NSPS IIII requirements. Based on the order date, these generators are subject to the NSPS IIII through 60.4200(a)(2)(i). Part 60 and Part 63 requirements are incorporated into the ROP at FG-EMERDG_FSUPPLY.

I.1 through 3, VI.1 – Compliance – Per 60.4205(a), each generator is limited to 6.6 grams CO per kilowatt-hour, 9.5 grams NOx + NMHC per kilowatt-hour, and 0.80 grams PM per kilowatt-hour; tests, if conducted, to be performed in accordance with the procedures at 60.4212; compliance to be determined by one of the methods listed at 60.4211(b)(1) through (5).
Based on the 9/29/2015 submittal provided as part of the previous AQD facility inspection, DTE River Rouge chose to comply with the above cited requirements based on a manufacturer's certification per 60.4211(b)(1). From AQD's view of the Generac website, Generac publishes a warranty entitled "United States Environmental Protection Agency & California Warranty Statement (Stationary Compression-Ignition Generators)". The warranty states that for 1996 and later model year, non-road diesel engines; the engine was designed, built, and equipped to conform with all applicable regulations adopted by the EPA and CARB pursuant to their respective authority. The warranty expires after 5 years or 3,000 hours of use. All three emergency generators have run less 3,000 hours; nevertheless, it is presumed that the Generac model engines at DTE River Rouge were EPA certified at the time of purchase. AQD did not request the manufacturer certification during the inspection of 7/9/2021 because it should be on file from the previous inspection.

I.4, II.1.a, VI.2 – Compliance – Sulfur dioxide emissions from each generator not to exceed 120 parts per million by volume at 50% excess air – The ppmv emission limit correlates to a sulfur in fuel oil content of 0.30 percent by weight, or 3,000 ppmw. Marathon continues to provide DTE River Rouge with the diesel fuel, which complies with the sulfur limits (see next paragraph). Provided DTE River Rouge continues to demonstrate compliance with the 15 ppmw sulfur requirement for nonroad diesel fuel at SC II.1.a., AQD will presume the sulfur in exhaust gas concentration is achieved.

II.1.a and b, VI.2 – Compliance – Per DTE River Rouge's submittal of 8/11/2011, each generator has a displacement of 0.6 liters per cylinder, therefore by 60.4207(b) these units are required to use diesel fuel that meets the requirements at 80.510(b) for nonroad diesel fuel; 80.510(b) limits the fuel to a maximum sulfur content of 15 ppmw and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume; compliance demonstration is not required by the MACT or NSPS but is included as a condition of the

ROP– DTE River Rouge utilizes ultra-low sulfur diesel fuel from Marathon Petroleum which, by contract, meets the sulfur and cetane requirements. For the inspection of 7/9/2021 I requested records of certificate of analysis for the last three fuel deliveries to evaluate the sulfur content and the cetane or a copy of DTE River Rouge updated contract with Marathon. On 7/21/2021, Ms. Wilson indicated that they do not perform any sulfur sampling and/or analysis of the diesel fuel, but they purchase only certified ultra-low sulfur diesel (ULSD). She provided a copy of the most recent fuel supply agreement between Marathon and DTE River Rouge signed on 12/30/2020. The terms of the agreement are from January 1, 2021, to December 31, 2023. The "fuel oil purchase terms and conditions dated 1/1/2021" which are part of the fuel agreement, were attached and included in Exhibit A, the specifications (SDS) of the product sold by Marathon, "Ultra-Low Sulfur No.1 Diesel (No 1 MV15)". The product has a maximum sulfur content 15 ppmw and a minimum cetane index of 40; which satisfies the permit requirement.

III.1 through 2 – Compliance – Each generator to be operated and maintained according to manufacturer's instructions to achieve emission standards over the life of the unit (60.4206, 60.4211(a)(1) and (2)) – Each of the three Generac units were viewed during the inspection of 7/9/2021 and appeared well-maintained. An example of maintenance activities was provided in previous inspections.

III.3, IV.1, VI.3 – Compliance – Each emergency unit is limited to 100 hours per year of non-emergency use, including readiness testing and maintenance, and within the 100 hours, not more than 50 hours of unspecified use, though peak shaving or income generation is prohibited (60.4211(f)); there is no limitation on the use of the units in emergency situations; each unit is to be equipped with a non-resettable hour meter (60.4209(a)); records on reasons for use.
Samples records for the emergency generators 's hourly meters logs were requested and received via email on 7/7/2021. DTE River Rouge provided meter readings for the following dates 5/25/2021 and 6/29/2020. The running hour for each generator is presented below:

Generator (Location)	Hours recorded on 5/25/2021	Hours recorded on 6/29/2020	Hours of Operation 2020 - 2021
Generac 1 (Bunkers & Tractor Area)	785.7	762.3	23.4
Generac 2 (Unloading House)	1217.4	1181.5	35.9
Generac 3 (Dumper House)	780.4	764	16.4

For each generator I used the hours recorded on 5/25/2021 and subtracted them from the readings recorded for 6/29/2020.The results represent the numbers of hours each generator was operated during approximately a 12-month period.
Based on DTE River Rouge information, typically the generators are run for 20 to 30 minutes each week for readiness testing and maintenance to ensure reliability. DTE explained that when there are electrical issues at either the dumper house, bunker house, or unloading house, the generator associated with the specific area automatically powers on for lighting purposes. The hourly meters account for the total hours of operation and do not differentiate between the time the generators are used for emergency and non-emergency situations. Based on the records collected from the non-resettable hourly meters on the estimated calculations, the number of hours of operation per year for each generator do not exceed the 100-hour allowed for non-emergency use. Typically, the generators are only used for readiness test but there were instances where electrical failures occurred which caused the generators to auto run. Separate records were not collected at this time, but subtracting the time used for the routine readiness testing it is possible estimate the time they were used for power supply.

IX.1 and 2 – Compliance – Comply with all applicable requirements of NSPS IIII and MACT ZZZZ – Requirements are incorporated into the ROP and the facility appears to be in compliance.

COLD CLEANERS: MI-ROP-B2810-2012b, FGCOLDCLEANERS

This flexible group encompasses each cold cleaner currently installed or to be installed at the plant that is exempt from the requirement to obtain a Permit to Install requirements at Rule 201(1) pursuant to either the Rule 281(h) or the Rule 285(r)(iv) exemptions. As indicated earlier in the plant tour discussion, four cold cleaners are currently installed at the facility: two are in the boiler house maintenance machine shop, and two in the fuel supply maintenance shop. The part cleaners were not inspected on 7/9/2021, but according to the records provided by Ms. Wilson in 2019 all cold cleaners are alike in size and structure, and all use Zep Dyna 143 as the cleaning solvent.

II.1 – Compliance – Cleaning solvents shall not exceed more than 5% by weight in aggregate of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform; these are federal hazardous air pollutants (HAPs) – Section 15 of the SDS on file indicates no HAPs were found in the solvent.

III.1 and 2, IV.1 through 3, VI.3 – Compliance – Each cold cleaner must either have an air/vapor interface of not more than 10 square feet or, if cleaning metal parts, emissions only released into the general in-plant environment; cleaners to be equipped with a devices to drain parts and parts to be drained not less than 15 seconds or until dripping ceases; cover to be closed when not in use; written operating procedures posted near the cleaner; routine maintenance performed as recommended by manufacturer.
No changes from previous inspection. In the 7/19/2019 submittal, DTE River Rouge reported the air/vapor interface of each cold cleaner at 4.7 square feet. Emissions are released into the general in-plant environment. The cleaners were not inspected on 7/9/2021.

IV.4 and 5, VI.1 – Not Applicable – Cover mechanically assisted if Reid vapor pressure greater than 0.3 psia or if solvent is heated or agitated; if solvent has vapor pressure greater than 0.6 psia or heated above 120°F additional controls and monitoring are required.
There are no changes in the size, type of cold cleaner, or the solvent used to clean the parts. The solvent is neither heated nor agitated, and according to the SDS the solvent (CAS number 64742-88-7) is a light aliphatic naphtha with a vapor pressure < 0.01 psia (0.5 mmHg) at 20°C. Therefore, the covers need not be mechanically assisted, and additional controls are not required.

VI.2 – Compliance – Required records include the date of installation of each cold cleaner, the identification number, the air/vapor interface area, and the type of solvent including the Reid vapor pressure and VOC content – Cold cleaner information was provided during the inspection of 7/19/2019 and there have not been changes.

VI.4 – Compliance – Storage in non-closed containers prohibited unless a safety hazard and then further requirements apply – DTE River Rouge reuses the solvent enclosed within the cleaner until evaporative loss requires addition.

PEAKING UNITS: MI-ROP-B2810-2012b, FG-DG_PEAKERS
This flexible group comprises four peaking units, each diesel fueled and each with a heat input of 28.4 million Btu per hour (2.75 MW). The peaking units were installed on or before 1/1/1967.

I.1, II.1, V.1, VI.2 – Compliance – Sulfur dioxide emissions from each peaker not to exceed 120 parts per million by volume at 50% excess air; verification by stack testing upon request of AQD; sulfur content of fuel oil not to exceed 0.30 percent by weight on the basis of an instantaneous sample; documentation to be maintained of sulfur content in fuel oil – Stack test for sulfur content in the exhaust have not been requested by AQD. However, the information of sulfur content in the fuel oil is always requested. Certificates of analyses were not provided in this inspection, but DTE provided the product specification for the diesel fuel sold to them by Marathon. The label identifies the product as "Ultra Low Sulfur No.2 Diesel" and the product specifications showed a maximum sulfur content of 15 ppm by weight.

VI.1 – Compliance – Monitor and record monthly fuel usage in gallons – Monthly fuel use records at each peaker are maintained by DTE River Rouge. During this inspection I requested the monthly records for the 12-month period from June 1, 2020, to May 31, 2021 and they were provided via email on 7/8/2021. For the cited period, the diesel fuel usage for all four peakers added up to 61,152 gallons, and the maximum monthly usage was in February 2021, for a total of 44,130 gallons.

IX.1 – Compliance – Comply with all applicable requirements of MACT ZZZZ – Please see section below on MACT ZZZZ.

PEAKING UNITS: MACT ZZZZ AND NSPS IIII FOR ENGINES

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP), Subparts A and ZZZZ (MACT ZZZZ) regulates hazardous air pollutants (HAP) emissions reciprocating from internal combustion engines (RICE) and these regulations integrate NSPS Subpart IIII for stationary compression ignition (i.e. diesel fueled) internal combustion engines.

The four-diesel fired peaking units were installed in 1967 and therefore prior to the 7/11/2005 applicability date in NSPS IIII (60.4200(a)). For MACT ZZZZ, each peaking unit is classified as an existing stationary RICE under 63.6590(a)(1)(i) because each is a 2.75 MW unit (3,683 hp) constructed prior to 12/19/2002 located at a major HAP source. These are non-emergency units and therefore the first compliance date for emissions and operating limitations is 5/3/2013 (63.6595(a)(1)). However, at 63.6590(b)(3) and (b)(3)(iv), an existing limited use stationary RICE of this type (i.e. greater than 500 hp at a major HAP source) "does not have to meet the requirements of this subpart [ZZZZ] and of subpart A of this part [63], including initial notification requirements". At 63.6675, a limited use stationary RICE is defined as "any stationary RICE that operates less than 100 hours per year".

For this inspection I requested the hours of operation for the peakers to verify that each peaking unit did not operate above the 100 hours per year limit. DTE River Rouge emailed me the information via email on 7/8/2021. The records show the hours of operation of each peaker in a 12-month period from 6/1/2020 through 5/31/2021, as follows: Peaker #1 (69.5 hrs), Peaker #2 (97 hrs), Peaker #3 (70 hrs), and Peaker #4 (94.3). Therefore, each peaker qualifies as a limited use stationary RICE and they are not subject to the requirements of MACT ZZZZ. However, the four peakers still remain a part of the affected source and will become subject to the requirements within the MACT standard if ever the operating hours exceed 100 per year.

PEAKING UNITS: PART 8 RULES FOR NOX SOURCES

Michigan's Part 8 rules were promulgated in response to interstate ozone transport issues identified under Section 110(a)(2)(D)(i)(I) of the Clean Air Act. The Part 8 rules incorporate requirements imposed first by the federal NOx Budget Program and by the federal CAIR program, with some additional provisions. Broadly, the Part 8 rules apply to fossil fuel-fired steam generating units producing electricity for sale while serving a generator with a nameplate capacity of 25 MW or more (e.g. Rules 801(2), 802(1)(a), 821(1)(a), 821(1)(b)) and any other source of NOx with a heat input capacity greater than 250 MMBtu per hour (e.g. Rules 801(4), 802(1)(b), 821(1)(c)). Each of the four peaking units is used to generate electricity for the grid, however, at 2.5 MW and 28.4 MMBtu per hour each unit does not qualify for regulation under either category.

Rule 818 regulates NOx emissions from certain internal combustion engines. Under R 336.1818(2), "the requirements of this rule apply to the owner or operator of a large NOx SIP call engine located in the Michigan fine grid zone defined in R 336.1803(1)." Wayne County is in the fine grid zone. A large NOx SIP call engine is defined at R 336.1818(1)(f) as "a stationary internal combustion engine emitting more than 1 ton of oxides of nitrogen per average ozone control period day in 1995."

On 4/5/2007 AQD-Detroit Office received from AQD's Emissions Reporting Unit a spreadsheet of the 1995 emissions inventory data supplied by DTE River Rouge. The peaking units are referenced as point source #4 on B2810_POINT_1995 and named River Rouge DG11. Four pieces of equipment are identified in this group. The capacity of each piece is given at 200 gallons of diesel fuel per hour (at 0.137 MMBtu per gallon of diesel fuel, this equates to 25.4 MMBtu per hour and approximates the 28.4 MMBtu per hour maximum rate given by DTE). DTE River Rouge reports the peaking units operated for 12 days in 1995 and combusted 48,240 gallons of diesel fuel (B2810_SEGMENT_1995). AQD estimated 11.312 tons NOx (B2810_SEGMENT_EMISSION_1995) were emitted due to this activity. In addition, DTE's 9/21/2007 submittal reports total NOx emissions from the peaking units at 0.91 tons for calendar year 1995.

The ozone season, for purposes of the Part 8 rules, extends from May through the end of September, or 153 days. To be regulated under R 336.1818 NOx emissions from an emission unit must exceed 153 tons during this time period. Based on the information from the 1995 emissions inventory and from the 9/21/2007 submittal, none of the peaking units emitted 153 tons or greater during the 1995 ozone season and therefore none of these four peaking units are regulated under Rule 818.

STORAGE TANKS: NSPS KB, R 336.1281(E), AND R 336.1281(M)

The federal New Source Performance Standards at Subparts A and Kb regulates volatile organic liquid storage tanks that commenced construction or modification after July 23, 1984. The affected facility is defined at 40 CFR 60.110b as storage vessels containing volatile organic liquids (as defined in the subpart) and with capacities greater than or equal to 75 cubic meters (19,813 gallons).

Two open-topped storage tanks are constructed on the western edge of the boiler-house. According to DTE (submittals of 8/26/2005 and 9/21/2007), the northern tank has a capacity of 590,000 gallons and is used to temporarily store boiler blowdown water. In the past, this northern tank was also used for the storage of a chemical waste generated from a solution used to de-rust the boilers every 10-20 years. However, in this inspection I was informed that they no longer perform that activity or used that solution.
The southern tank has a capacity of 237,000 gallons and is used to store "oily waste". DTE informs that the chemical waste is typically an aqueous solution with small amounts of ammonia and EDTA. The oily waste is typically a synthetic hydrocarbon with vapor pressure less than 0.1 mmHg. Therefore, DTE argues the materials stored in these tanks have vapor pressures less than the threshold limits of NSPS Kb (5.2 kPa) and the Part 6 rules (1.5 psia). DTE claims Rule 281(e) exempts the chemical waste tank and Rule 285(m) exempts the oily waste because "the oil is not a VOC".
Based on the vapor pressures of the materials, it appears these tanks are not subject to the NSPS K-series of storage tank regulations or the State Part 6 storage tanks regulations. Rule 281(e) applies, provided the vapor pressure of the VOC does not exceed 0.1 mmHg, as it appears not to. There is no minimum vapor pressure in Rule 285(m); however, wastewater tanks are exempt provided the primary purpose of the treatment is not for VOCs, and it appears not to be in this case.
Therefore, based on the information known at this time, these tanks appear to be exempt from the regulations mentioned above.

EPA NOV/FOVs

On 7/24/2009 and again on 3/13/2013, the U.S. EPA Region 5 issued a Notice of Violation and Finding of Violation (NOV/FOV) to DTE Energy for the Monroe, St. Clair, River Rouge, Belle River, and Trenton Channel power plants. EPA cites violations of Rule 301, major New Source Review, NSPS Da, and Title V at the DTE River Rouge Plant. The asserted violations have been resolved by the signing of a Consent Decree on 7/22/2020. The Decree mandates DTE amend its Title V permit incorporating a compliance program with specific requirements described in the Decree. To satisfy this requirement DTE applied for a ROP minor modification on 12/23/2020, to add a Schedule of Compliance to Appendix 2 of Section 1 of MI-ROP-B2810-2012b. However, on June 1, 2021, Unit 3 was formally retired, and the execution of this action was no longer needed. Therefore, the NOV/FOVs of 7/24/2009 and 3/13/2013, issued by the U.S. EPA's to DTE River Rouge, are considered resolved

7 - CONCLUSION

At the time of completion of this report, DTE River Rouge is substantively in compliance with the applicable state and federal requirements that were evaluated during the inspection period.

NAME Handoval DATE 5/24/2022 SUPERVISOR JK