

M4734

MAJIL4

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

M473452753

FACILITY: FORD MOTOR CO AUTO TRANSMISSION NEW PRODUCT CENTER		SRN / ID: M4734
LOCATION: 35500 PLYMOUTH RD, LIVONIA		DISTRICT: Detroit
CITY: LIVONIA		COUNTY: WAYNE
CONTACT: Manny Kusi-Appiah, Environmental Compliance Engineer		ACTIVITY DATE: 03/09/2020
STAFF: Todd Zynda	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: March 9, 2020 Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: FY2019 Scheduled Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Emmanuel Kusi-Appiah, Senior Environmental Compliance Engineer; Tom Masacek, Facilities & Instrumentation Supervisor

FACILITY PHONE NUMBER: 313-805-9419

FACILITY FAX NUMBER: 734-523-6154

FACILITY BACKGROUND

The Ford Automatic Transmission New Product Center (Ford ATNPC) tests transmissions and transmission components in one of approximately 45 dynamometer test cells. Component test cells are electrical. However, transmission test cells consist of a dynamometer, internal combustion engine, and transmission. The dynamometer measures the mechanical performance of the attached transmission. Emissions result from the combustion of gasoline and diesel fuel in the engine. The facility also manufactures, assembles, and tests prototype transmissions and transmission components. The facility is open 24 hours a day, 7 days a week; tests are initiated during the day shift and monitored by the remaining shifts. Ford ATNPC is part of the complex that contains the Ford Livonia Transmission Plant (LTP) (A8645) which is considered a separate source for Title V purposes. However, HAP emissions from both facilities are aggregated per the major source definition in the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. The property is bounded by Plymouth Road to the south, Levan Road to the west, the Chesapeake & Ohio railway to the north, and a commercial/light industrial zoned complex immediately adjacent to the east. The nearest residential property is approximately 640 feet to the east.

SOURCE CLASSIFICATION

Ford ATNPC is considered a major Title V Part 70 source due to the potential to emit of carbon monoxide and nitrogen oxides, each exceeding 100 tons per year. The facility is also considered a major source regarding Prevention of Significant Deterioration (PSD) (Michigan Administrative Code, Air Quality Division: Part 18) regulations due to the potential to emit of carbon monoxide and nitrogen oxides in excess of 250 tons per year. Subsequently, this facility was issued a renewable operating permit (ROP) in 1999 (ROP 199700002) which was renewed on September 28, 2006 (MI-ROP-M4734-2006). In the 2006 ROP renewal, the facility chose to incorporate hazardous air pollutant (HAP) opt out limits to avoid potential applicability of major source Maximum Achievable Control Technology (MACT) standards. The opt-out was obtained prior to the first compliance date for the Industrial Boilers and Process Heaters (40 CFR 63 Subpart DDDDD), Surface Coating of Miscellaneous Metal Parts (40 CFR 63 Subpart MMMM), and Engine Test Cells (40 CFR 63 Subpart P PPPP) standards. Note, HAP emissions from Ford ATNPC and Livonia Transmission are aggregated per the major source definition in the NESHAP regulations. The current ROP (MI-ROP-M4734-2011) was issued on September 27, 2011. On March 9, 2016 the facility submitted a ROP renewal application (No. 201600058). On March 31, 2017 the facility was issued Permit to Install (PTI) 68-12B for the installation of five dynamometers housed in the "Phase 3" building. On May 2, 2018, the facility was issued PTI 32-18 for HAP opt-out limits that replace the limits issued as part of the MI-ROP-M4734-2006.

Previously, EU-UST1 at the stationary source was subject to the New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels promulgated in 40 CFR, Part 60, Subparts A and Kb. EU-UST1 and EU-UST2 have been removed from the facility and replaced with four 16,000 gallon tanks (EU-TANKFARMS6-12 in ROP application No. 201600058). The new fuel storage tanks are not subject NSPS Subpart Kb (see discussion below). EU-GASDISPENSING, EU-VEHICLEREFUEL, EU-EEF1, EU-EEF2, EU-EEF3, EU-EEF4,

EU-PHASE3 and EU_TANKFARMS6-12 at the stationary source are subject to the area source Maximum Achievable Control Technology Standards for gasoline dispensing facilities promulgated in 40 CFR, Part 63, Subparts A and CCCCCC.

INSPECTION NARRATIVE

On March 9, 2020 AQD inspector, Mr. Todd Zynda, conducted a targeted inspection of Ford ATNPC. The purpose of this visit was to determine the facility's compliance with state and federal air quality regulations as well as the conditions of MI-ROP-M4734-2011, PTI 68-12B, and PTI 32-18. At approximately 12:00 PM, the AQD entered the facility, and was greeted by Mr. Emmanuel (Manny) Kusi-Appiah, Senior Environmental Compliance Engineer.

During the opening meeting, facility operations and required records were discussed. Records were provided via email on March 26, 2020.

Ford ATNPC is divided into the following phases:

- Phase 1 - Prototype operations (machining, assembly, testing) which are exempt per Rule 285(l)(vi)(B) or (C). Operations in Phase 1 are either released to the general in-plant environment, or if released to outside ambient air are controlled by an appropriately designed fabric filter.
- Phase 2 - Approximately 21 dynamometer cells and 6 chassis rolls that are exempt per Rule 285(g) and were installed before the promulgation of Rule 278. Phase 2 cells are uncontrolled and vent to one of 4 stacks. The combustion engines used have less than 10,000,000 BTU per hour heat input.
- Phase 3 – 20 cells that are permitted under PTI 68-12B.
- Phase 3A – 5 cells that are permitted under PTI 68-12B. The installation has not been completed (two of the five cells have been installed).

The facility tour began with observation of the Phase 1. The Phase 1 area consists of prototype operations, consisting of machining, assembly, and testing. Various areas in this section include: buildup/teardown, machine shop, component testing, and the garage. Emissions are released to the general in-plant environment. Within Phase 1, the installation of a battery testing area was observed. While battery testing is not in operation yet, Mr. Kusi-Appiah stated that the testing will include the use of an epoxy. Mr. Kusi-Appiah stated that any potential VOC emissions would be released to the in-plant environment and use the Rule 290 PTI exemption. Based on visual observation and the description provided by Mr. Kusi-Appiah it appears that the new installation will meet a PTI exemption.

The tour continued with observation of the facility paint booth. During the inspection filters were in place and visual observation was made of the daily paint log. The facility cold cleaner is located in the paint booth area. During the inspection the cold cleaner was empty with lid closed. According to Mr. Kusi-Appiah, the facility may replace the solvent based cold cleaner with an aqueous based cold cleaner.

The tour continued with observation of Phase 2, Phase 3, Phase 3A.

Phase 2 is divided into 4 sections (EEF1, EEF2, EEF3, and EEF4). The cells are uncontrolled but may be equipped with a catalytic converter depending on the testing requirements. Phase 2 also includes the chassis rolls where fully assembled vehicles are tested for the purposes of vehicle certification required under Title II of the Clean Air Act.

Phase 3 cells are divided into Banks A, B, and C (sometime referred to as 5, 6, and 7). Each group of cells that comprise a bank vents to a common header and then to one of three, 3 stage Regenerative Thermal Oxidizers (RTOs) that were installed in July 2006 to replace the aging catalytic oxidizers. The catalytic oxidizers were permanently shut down in 2011. The number of RTOs in service at one time depends on the flow rate of exhaust gas into the header. In general, one RTO is in use at all times with a second RTO online (i.e. heated up to temperature) and idling. The idled RTO will come online automatically and process the exhaust stream if there is a temperature issue with the RTO in use without shut down of the dynamometer cells. Otherwise, if an RTO with sufficient afterburner temperature is not available, the entire system (including the dynamometers) will shut down.

Each test cell is connected to a control system that monitors parameters such as torque, RPM, gear, and temperature. A "stoplight" indicating the operating status of each cell (red, yellow, green) is also present above the cell number. The length of time and type of test performed on each transmission is variable and depends on

the customer request; some tests run 8 hours while others can take up to 3 months.

During the inspection, the Phase 3A cells were observed. According to correspondence from Mr. Rob Streight on September 24, 2020, the three cells under Phase 3A which were not installed as of the 2017 inspection, were completely installed on June 11, 2019 and began operation on October 14, 2019.

During the inspection, the following information was recorded from the RTOs' control panels at roof level.

RTO 1 (operating)

Tower #1 (purge) – 1534 °F
Tower #2 (inlet) – 1544 °F
Tower #3 (exhaust) – 1521 °F
Inlet Temperature - 107 °F
Exhaust Temperature – 39 °F
Delta P – 4.48 in. wc
O2 – 25.0 %

RTO 2 (idle)

Tower #1 (inlet) – 1536 °F
Tower #2 (purge) – 1541 °F
Tower #3 (exhaust) – 1539 °F
Inlet Temperature - 40 °F
Exhaust Temperature – 63 °F
Delta P – 0.0 in. wc
O2 – 20.1 %

RTO 3 (Off) – During the inspection Unit 3 was down for maintenance.

There is a backup strip chart temperature recorder as required by the permit which appeared to be functioning properly for the RTOs in operation. The recorder was monitoring average chamber temperature (15 min), RTO inlet temp, RTO exhaust, and RTO inlet damper.

During the inspection, RTO 1 was operating, RTO 2 was in idle mode, and RTO 3 was in down for maintenance.

A meeting was held with Mr. Tom Masacek, Facilities & Instrumentation Supervisor regarding maintenance and operation of the RTOs. The facility replaces thermocouples annually. During that time, the thermocouples are also calibrated. Records of the most recent calibration were provided. Mr. Masacek demonstrated that the interlock system is tested annually. The requested RTO records were discussed. Records were provided via email on March 26, 2020.

COMPLAINT/COMPLIANCE HISTORY

There have not been any complaints about this facility since the last inspection. No violation notices have been issued since the last inspection.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VNs

None

APPLICABLE RULES/PERMIT CONDITIONS

ROP MI-ROP-M4734-2011

All conditions regarding the catalytic oxidizers (CTOs) are no longer applicable as those are no longer in service. All exhaust is routed to the RTOs and ductwork has been removed to the CTOs.

Conditions for FG-RULE290 were not evaluated as the facility does not operate any Rule 290 equipment at this time.

Note: Permit conditions have been paraphrased for brevity. Please see ROP for conditions in their entirety.

Source Wide Conditions – PTI 32-18

The Source Wide Conditions (HAP opt-out conditions) under MI-ROP-M4734-2011 have been replaced with the conditions included in PTI 32-18.

SC I.1 and 2, SC VI. 2.d and e. **COMPLIANCE.** Emissions of each HAP less than 8.9 tons and aggregate HAPs less than 22.4 tons per year. Individual and aggregate HAP records to be maintained. Highest 12 month rolling aggregate HAP emissions from January 2018 through March 2020 occurred during October 2018 at 6.48 tons for both facilities combined. This indicates compliance with both aggregate and individual HAP limits. Records are maintained.

SC V.1. **COMPLIANCE.** Shall determine the HAP content of any material as applied and as received, using manufacturer's formulation data. Upon request of the AQD District Supervisor, shall verify the manufacturer's HAP formulation data using EPA Test Method 311. The facility maintains the HAP content from manufacturer's formulation data or SDS (AQD accepted). At this time the AQD has not requested EPA Test Method 311 analysis.

SC VI.1. **COMPLIANCE.** Shall keep all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in special conditions. The facility appears to be meeting this requirement.

SC VI.2.a through c. **COMPLIANCE.** Shall keep the following on a monthly basis: gallons or pounds of each HAP containing material used; HAP content, in pounds per gallon, or pounds per pound, of each HAP containing material used; fuel usage for all fuel-burning equipment in FG-FACILITY and equipment-specific emission factors for each fuel. The records provided by the facility appear to satisfy these requirements.

FG-PHASE2

Dynamometer testing at 21 engine driven dynamometer test cells and 6 chassis rolls. Equipment is exempt per Rule 285(g). Further discussion of Phase 2 is included following evaluation of ROP and PTI conditions.

SC II. 1 and SC VI. 1. **COMPLIANCE.** Fuel usage rate shall not exceed 1,750,000 gallons per year on a 12-month rolling basis. Records are to be maintained. The highest fuel usage from January 2018 through February 2020 occurred during October 2018 at 314,061 gallons.

FG-PHASE3 – PTI 68-12B

20 engine driven dynamometer test cells and 3 RTOs used to control hydrocarbon and carbon monoxide emissions from the test cells.

SC I. 1, 5, 7 and SC VI.5. **COMPLIANCE.** Prorated daily emissions shall not exceed the following on a calendar day basis: NO_x - 2027.5 lb/day, SO₂ - 507.1 lb/day, and VOC - 228.1 lb/day. The facility maintains records of the days of operation for each month. The maximum NO_x, SO₂, and VOC reported lb/day emissions from January 2018 through February 2020 occurred during February 2018 (NO_x = 149.77 lb/day, SO_x = 0.73 lb/day, VOC = 0.52 lb/day).

SC I. 2, 6, 8, 10, 12, 13 and SC VI.4. **COMPLIANCE.** 12-month rolling emissions shall not exceed the following: NO_x - 52.2 tpy, SO₂ - 10.8 tpy, VOC - 5.9 tpy, CO - 128.5 tpy, PM₁₀ - 11.7 tpy, and PM_{2.5} - 11.7 tpy. The maximum reported tpy emissions from January 2018 through February 2020 occurred as follows: SO_x = 0.10 tpy (October through December 2018), NO_x = 20.99 tpy (November 2018), CO = 2.93 tpy (November 2018), PM₁₀ = 1.43 tpy (July 2018 and November 2018), PM_{2.5} = 2.05 (November 2018), and VOC = 0.07 tpy (May 2018 through January 2019).

SC I. 3, SC V. 1. **COMPLIANCE.** NO_x emissions shall not exceed 84.5 pph. The most recent stack test was conducted May 31, 2017 and June 1, 2017 on RTO #2. The average NO_x emission rate for diesel fuel was 1.40 pph and gasoline at 4.37 pph. Please see facility file for stack test report.

SC I. 4, SC V. 2, SC VII 1. **UNKNOWN.** NO_x emissions shall not exceed 544.0 lb/MMcf when combusting natural gas. According to Mr. Kusi-Appiah, natural gas has not been used a fuel. Therefore, an evaluation of compliance with the emission limit has not been conducted.

SC I. 9, SC V.1. **COMPLIANCE.** VOC emissions shall not exceed 93.5 pph. The most recent stack test was conducted May 31, 2017 and June 1, 2017 on RTO #2. The average VOC emission rate for diesel fuel was 0.0 pph and gasoline at 0.02 pph. Please see facility file for stack test report.

SC I. 11, SC V.1. **COMPLIANCE.** CO emissions shall not exceed 208 pph. The most recent stack test was conducted May 31, 2017 and June 1, 2017 on RTO #2. The average CO emission rate for diesel fuel was 0.01 pph and gasoline at 0.70 pph. Please see facility file for stack test report.

SC II. 1, 2, 3, 4. **COMPLIANCE.** Fuel usage shall not exceed 12,675 gallons per day and 652,500 gallons per year on a 12-month rolling basis. Diesel and diesel-like fuels shall not exceed 500,000 gallons per year on a 12-month rolling basis. Shall only burn gasoline, alcohol blends, diesel etc. as specified by SC II. 4. Based on records provided, the facility calculates daily fuel usage using the fuel usage for the month divided by the number of operating days. The highest daily fuel usage from January 2018 through February 2020 occurred in February 2018 at 832.07 gallons. The highest 12-month rolling fuel usage occurred in November 2018 at 233,184 gallons. The highest 12-month rolling diesel or diesel-like fuel usage occurred during July 2018 at 41,839 gallons. Based on records provided as part of the inspection it appears that the facility only uses fuels specified in SC II. 4.

SC II. 5. **COMPLIANCE.** Shall not use leaded gasoline. The SDS and certification provided indicates that gasoline does not contain lead.

SC III. 1. **COMPLIANCE.** Shall not operate unless malfunction abatement plan (MAP) is implemented and maintained. The MAP (dated July 24, 2019) was updated to include Compliance Assurance Monitoring (CAM) requirements.

SC IV. 1, 2, 3, SC VI. 2, 3, and 6. **COMPLIANCE.** Shall not operate Banks 5, 6, or 7 unless RTO is installed and operating satisfactorily. Shall maintain a minimum temp of 1400 °F. A temperature monitoring device and natural gas usage device shall be used. Records are to be maintained. During the inspection, RTO #1 was in operation. The facility provided records of thermocouple calibration (see attached). According to Mr. Masacek the facility replaces thermocouples annually. During that time, the thermocouples are also calibrated. RTO temperature interlock system is tested annually. Temperature readings for February 27, 2020 through March 4, 2020 indicate that RTO temperatures are recorded above 1400 °F. As described in the "Inspection Narrative" above, a strip chart is used as back up for RTO temperatures. In addition, the facility demonstrated maintenance records for the RTOs, indicating that the RTO are maintained in a satisfactory manner.

SC VI. 1. **COMPLIANCE.** Calculations shall maintain records in an acceptable format. Records provided appear to meet this requirement.

SC VI. 7. **COMPLIANCE.** Shall determine the maximum sulfur content in fuel using fuel supplier certification. The facility provided the fuel supplier certification for sulfur content for diesel and gasoline fuels.

SC VIII. **COMPLIANCE.** Exhaust stacks for RTOs shall have a maximum diameter of 44 inches, and minimum height of 68.5 feet above ground. During the inspection exhaust stacks appeared to meet these requirements. Measurements were not collected.

FG-PHASE3A – PTI 68-12B

Five dynamometers housed in the same building as the Phase 3 dynamometers. Emissions are controlled by the 3 RTOs. At the time of inspection, five test cells were installed at Phase 3A. Two cells were installed and began operation in June 2017. According to correspondence from Mr. Rob Streight on September 24, 2020, the remaining three cells under Phase 3A were completely installed on June 11, 2019 and began operation on October 14, 2019.

SC I.1 and 2, VI.3 and 4. **COMPLIANCE.** 12-month rolling emissions shall not exceed the following: NO_x – 35.5 tpy, CO – 58.1 tpy. The maximum reported tpy emissions from January 2018 through February 2020 occurred as follows: NO_x = 0.14 tpy (February 2020), CO = 0.02 tpy (November 2019 through February 2020).

SC II. 1, 2, 3, and 4. **COMPLIANCE.** Fuel usage shall not exceed 4,752 gallons per day and 295,000 gallons per

year on a 12-month rolling basis. Diesel and diesel-like fuels shall not exceed 120,000 gallons per year on a 12-month rolling basis. Shall only burn gasoline, alcohol blends, diesel etc. as specified by SC II. 4. Based on records provided, the facility calculates daily fuel usage using the fuel usage for the month divided by the number of operating days. The highest daily fuel usage from January 2018 through February 2020 occurred in February 2020 at 77.65 gallons. The highest 12-month rolling fuel usage occurred in February 2020 at 5,533 gallons. According to the records provided, diesel and diesel like fuels have not been used in Phase 3 A. Based on records provided as part of the inspection it appears that the facility only uses fuels specified in SC II. 4.

SC II. 5. **COMPLIANCE.** Shall not use leaded gasoline. The SDS and certification provided indicates that gasoline does not contain lead.

SC III. 1. **COMPLIANCE.** Shall not operate unless malfunction abatement plan (MAP) is implemented and maintained. The MAP (dated July 24, 2019) was updated to include Compliance Assurance Monitoring (CAM) requirements.

SC IV. 1, 2, 3, SC VI. 2 and 4, SC VIII. **COMPLIANCE.** Phase 3A cells are controlled by the same RTO as Phase 3. See above conditions under Phase 3.

SC VI. 1. **COMPLIANCE.** Calculations shall maintain records in an acceptable format. Records provided appear to meet this requirement.

SC VI. 5. **COMPLIANCE.** Shall determine the maximum sulfur content in fuel using fuel supplier certification. The facility provided the fuel supplier certification for sulfur content for diesel and gasoline fuels.

FG-COLDCLEANERS

The facility operates one cold cleaner in the Phase I paint booth area.

SC II. 1. **COMPLIANCE.** Based on a review of safety data sheet (SDS) submitted, solvents do not contain prohibited chemicals listed in this condition above 5 percent.

SC III. 1, 2, SC IV. 1, 2, 3, 4, 5. **COMPLIANCE.** (1) Each cold cleaner must either have an air/vapor interface of 10 square feet or less or the cold cleaner must vent to the in-plant environment; (2) be equipped with a device for draining cleaned parts; (3) be equipped with a cover and cover is closed when not in use; (4) the cover mechanically assisted if the solvent's Reid vapor pressure exceeds 0.3 pounds per square inch absolute (psia) or the solvent is heated or the solvent is agitated; (5) for new cold cleaners; special conditions that apply to Reid vapor pressure greater than 0.6 psia.

During the inspection it was observed that the cold cleaner vents to the in-plant environment and is equipped with a cover. According to Mr. Kusi-Appiah, the cold cleaner has been taken out of operation and is being evaluated to change over to an aqueous based cold cleaner. During the inspection the cover was closed and cold cleaner appeared empty. When in use, parts are left in the tanks to drain. The solvent is neither heated nor agitated during cleaning. The SDS provided indicates the vapor pressure is 0.2 mmHg (0.0039 psia) at 68 °F.

SC VI. 1, 2, 3, and 4. **COMPLIANCE.** (1) if solvent is heated, solvent temperature shall be monitored; (2) recordkeeping on the make/model, size, description, date of installation, air/vapor surface area, type of solvent for each cold cleaner; (3) written procedures posted; (4) waste solvent stored in closed containers unless a safety hazard. Records were not requested regarding the one cold cleaner at the facility. The facility maintains records demonstrating compliance with these conditions. Records provided indicate that the surface area of the solvent based cold cleaner is 5.83 square feet and is not heated or agitator equipped.

FG-RULE287(c)

The paint booth located in the Phase 1 are is subject to FG-RULE287(c).

SC II.1 and SC VI.1.a. **COMPLIANCE.** Coating limited to 200 gallons per month, as applied, minus water, per emission unit. Shall maintain documentation of volume of coating used. The facility provided paint use logs for October 2019 through December 2019. The highest paint usage occurred during November 2019 at 1 gallon.

SC IV.1. and SC VI.1.b. **COMPLIANCE.** Exhaust system shall be equipped with a properly installed and operating particulate control system. Shall maintain documentation of any filter replacements. During the inspection filter were in place. At this time the filters have not been replaced due to low paint usage since the paint booth resumed operation in October 2019.

FG-RULE290

The facility currently does not operate any Rule 290 exempt equipment. Conditions under this flexible group were not evaluated.

FG-GASOLINE DISPENSING ≥10,000 AND ≤100,000/MONTH

EU-GASDISPENSING, EU-VEHICLEREFUEL, EU-EEF1, EU-EEF2, EU-EEF3, EU-EEF4, FG-PHASE3 and 3A, and EU_TANKFARMS6-12 appear to be subject to the area source MACT Subpart CCCCCC. However, equipment subject to this area source MACT were not evaluated during the inspection as the AQD has not accepted delegation for this MACT standard.

40 CFR Part 60 – Subpart Kb (Volatile Organic Liquid Storage Vessels)

EU-UST1 at the stationary source was previously subject to the New Source Performance Standards for Volatile Organic Liquid Storage Vessels promulgated in 40 CFR, Part 60, Subparts A and Kb. However, this tank has been removed from the facility and replaced with smaller capacity tanks (16,000 gallons) that are not subject to the regulation per §60.110b(a).

Non Applicable NESHAPS

During the ROP renewal process, it was determined the facility is not subject to the following NESHAPS:

EURTACU	40 CFR 63 – Subpart JJJJJJ NESHAPs for Industrial, Commercial, and Institutional Boilers	U.S. EPA promulgated Subpart JJJJJJ effective May 20, 2011. Those final rules exclude all gas-fired boilers at area sources. ATNPC does not have any boilers that would be classified as combusting a fuel (e.g., oil, coal, biomass) other than gas, therefore Subpart JJJJJJ does not apply to ATNPC.
EU-COLDCLEANERS	40 CFR 63 Subpart T – NESHAPs for Halogenated Solvent Cleaning	According to 40 CFR 63.460(a), this standard applies to units that use solvents with concentrations of 5% or more by weight of halogenated compounds. In the current ROP, there is a condition limiting halogenated compound concentrations to 5% or less by weight. Therefore, this standard does not apply.
SOURCE-WIDE	40 CFR Part 63, Subpart PPPPP – NESHAPs for Engine Test Cells/Stands	According to 40 CFR 63.9285(a), an engine test cell is any apparatus used for testing uninstalled stationary or uninstalled mobile engines. Engines are not tested at ATNPC; they are used to drive the transmissions for transmission testing. Therefore, this unit is not subject to the Engine Test Cell MACT standards. Also, this facility is considered an existing source under the MACT and according to 63.9285(b) "existing sources do not have to meet the requirements of this subpart or subpart A of this part."
	40 CFR Part 63, Subpart PPPPP – NESHAPs for Engine Test Cells/Stands	40 CFR Part 63, Subpart PPPPP establishes emission limits for new engine test cells at a source that is major for hazardous air pollutants (HAPs). ATNPC is not major for HAPs as constrained by the source-wide conditions contained in this ROP.
SOURCE-WIDE	40 CFR Part 63, Subpart ZZZZ – NESHAPs for Reciprocating Internal Combustion Engines, 40 CFR Part 60, Subparts IIII and JJJJ for Compression Ignition and Spark Ignition Internal Combustion Engines	The engines used in the test cells are used for research and developmental purposes and are not stationary internal combustion engines subject to the RICE MACT (40 CFR Part 63, Subpart ZZZZ) or the CI ICE NSPS (40 CFR Part 60, Subpart IIII) or the SI ICE NSPS (40 CFR Part 60, Subpart JJJJ). The facility does not operate emergency RICE or any other stationary RICE.
SOURCE-WIDE	40 CFR 63, Subpart HHHHHH	ATNPC does not use manual spray-application equipment to apply coatings to parts and products.
SOURCE-WIDE	40 CFR 63, Subpart XXXXXX	ATNPC is not one of the "Nine Metal Fabrication and Finishing Source Categories" identified in 40 CFR 63.11514 of Subpart XXXXXX as listed in Table 1 of the preamble. See Federal Register, Vol. 73, No. 142, July 23, 2008, p. 42979.

Phase 1 equipment are exempt from permit to install requirements per Rule 285(l)(vi)(B) or (C).

The majority of Phase 2 combustion engines are exempt from permit to install requirements per Rule 285(g) with the exception of test cell T2 which was modified in 2007 (see below discussion). Equipment was installed prior the promulgation of Rule 278.

Phase 2 Evaluation – August 29, 2019

On August 29, 2019, AQD staff, Mr. Todd Zynda, Ms. Becky Loftus, and Mr. John Harrison, conducted an onsite evaluation of Phase 2. The purpose of the visit was to evaluate the "PTI exempt" Phase 2 test cells. During the site visit, the AQD was accompanied by Ford employees, Mr. Manny Kusi-Appiah, Mr. Tom Masacek, and Mr. Kurt Cleveland.

The tour of the facility consisted of visiting each test cell in Phase 2 that was available for viewing. Cells that were undergoing active testing were observed from the control panel window only. Each cell was inventoried for operation, dynamometer plate information, and engine fuel type (please see attached spreadsheet). The engine size is dictated by the absorption capacity of the dynamometer.

The majority of the cells within Phase 2 use original dynamometers installed circa 1991 or 1992 and are engine driven. The 1991/1992 installations are considered "PTI exempt grandfathered" under Rule 285(g) as the installation occurred prior to promulgation of Rule 278 in 1993.

Within Phase 2 there are test cells that have always been used for electric testing as follows: S1, C1, C2, C3, C4, D1, D2, E1, and E2. Additional cells (A2, I4, and T1) that have previously been used for engine driven testing have been converted to electrical testing.

Test Cell T2 within Phase 2 has been modified since the original installation. The facility has installed a new dynamometer (see attached photo of dynamometer plate information). The plate indicates a manufactured date of 2008 and absorbing power of 600 kilowatts (KW) or approximately 804 horsepower (HP).

On August 12, 2019, Ford provided an exemption analysis dated February 11, 2007 for the new dynamometer installation in Test Cell T2. The exemption analysis includes potential to emit (PTE) calculations for both gasoline and diesel combustion using a total design capacity engine of 3,312,000 BTU/hour heat input (see attached).

The Ford exemption analysis uses a combination of AAMA, AP-42, and (then) MDEQ emission factors to estimate emissions. In reviewing the analysis, the AQD determined that the while 3,312,000 BTU/hour heat input is listed in the MI-ROP-M4734-2011, FG-PHASE2 description, the 3,312,000 BTU/hour heat input is not enforceable through a special condition of the permit. The 3,312,000 BTU/hour heat input equates to approximately 473 HP output, based on an average brake-specific fuel consumption of 7,000 BTU//hp-hr from Table 3.3.-1 of AP-42 used to convert fuel input to power output. The ROP application dated November 26, 1996 also includes a maximum design capacity of 3,312,000 BTU/hr heat input indicating the maximum sized engine at the time the Rule 285(g) exemption was applied (prior to Rule 278) was 473 HP output. By installing the new dynamometer in 2008, Ford has increased the engine capacity of the test cell from approximately 473 HP to 804 HP output.

The AQD evaluated the PTE increase for criteria pollutants for the increase in HP capacity, 473 HP to 804 HP (331 HP increase). See attached documents for calculations. Of significant note is the difference in the NOx emission factor for diesel combustion. Ford uses a NOx emission factor of 0.300 lb/gal with a footnote indicating "NOx emission factor provided by Mark Mitchell, MDEQ for diesel combustion." No other documentation (email correspondence, or other) supporting the NOx emission factor used was provided by Ford. As shown in the attached AQD calculations, when using the AP-42 emission NOx emission factor for diesel combustion in conjunction with the increase in HP (331 HP increase), the resulting increase in NOx emissions are greater than the NOx significant threshold (40 tons) at 51 tons. While the change in dynamometer to the larger engine capacity would result in NOx emissions of 109 tons per year on a project whole.

Based on the change of dynamometer in 2008, and the increase in engine capacity, test cell T2 is required to be reevaluated for a permit exemption R 336.1285(2)(g).

To apply the R 336.1285(2)(g) PTI exemption, a R 336.1278a test must be conducted.

"R 336.1278a. (1) To be eligible for a specific exemption listed in R 336.1280 to R 336.1291, any owner or operator of an exempt process or exempt process equipment must be able to provide information demonstrating the applicability of the exemption. The demonstration may include the following information:

- (a) A description of the exempt process or process equipment, including the date of installation.
- (b) The specific exemption being used by the process or process equipment.
- (c) An analysis demonstrating that R 336.1278 does not apply to the process or process equipment."

R 336.1278 reads as follows.

"R 336.1278(1) The exemptions specified in R 336.1280 to R 336.1291 do not apply to either of the following:

- (a) Any activity that is subject to prevention of significant deterioration of air quality regulations or new source review for major sources in nonattainment areas regulations.
- (b) Any activity that results in an increase in actual emissions greater than the significance levels defined in R 336.1119. For the purpose of this rule, "activity" means the concurrent and related installation, construction, reconstruction, relocation, or modification of any process or process equipment."

Per R 336.2801(cc)(ii), a major stationary source means any of the following: "Any stationary source not listed in the previous subdivision which emits, or has the potential to emit, 250 tons per year or more of a regulated new source review pollutant." The stationary source SRN M4734 is an existing major new source review source as defined under R 336.2801 as CO and NOx emissions are greater than 250 tons per year.

The PTE of the installation of the new dynamometer at test cell T2 exceeds the significant threshold of R 336.1278(1)(b) for NOx when combusting diesel fuel and using the AP-42 emission factor. The AQD does not agree with use of the NOx emission factor for diesel combustion as proposed by Ford (Mark Mitchell emission factor with no supporting documentation). The PTE for the change in engine capacity due to the new dynamometer installation is 51 tons per year, which is greater than 40 tons, a significant emissions increase under R 336.2801(rr). "Significant" is defined under R 336.1119(e) as follows:

"Significant" means a rate of emissions for the following air contaminants which would equal or exceed any of the following:... (ii) Oxides of nitrogen - 40 tons per year.

As a result, there is insufficient evidence to demonstrate that R 336.1278(1)(a) or R 336.1278(1)(b) do not apply to the proposed modification, and therefore the analysis required under R 336.1278a(1)(c) has not been met. Consequently, the R 336.1285(2)(g) exemption is ineligible for use and the facility is in violation of R 336.1201(1) for modifying test cell T2 without having first obtained a Permit to Install. Additionally, under Part 18 of the administrative rules, a change in the method of operation appears to have occurred at Phase 2, Test Cell T2, and has resulted in a major modification to an existing major prevention of significant deterioration stationary source and is in violation of R 336.2802(3). The facility appears to have constructed and is operating a major modification, as defined at R 336.2801(aa), for NOx, without obtaining a permit to install.

This issue has been under discussion with Ford and the AQD for the last year. On September 21, 2020, Ms. Danielle Fenbert of Ford's U.S./Canada Compliance Group requested a meeting with the AQD to further discuss Phase 2, Test Cell T2. At this time, a formal compliance determination regarding Phase 2, Test Cell T2 is pending. Discussions between Ford and the AQD are tentatively scheduled to occur sometime after mid-October 2020.

MAERS REPORT REVIEW

Reporting year 2019 MAERS was submitted in a timely manner and reviewed by AQD staff. See facility file.

FINAL COMPLIANCE DETERMINATION

At this time, Ford ATNPC appears to be in compliance with MI-ROP-M4734-2011 and PTI 68-12B. A formal compliance determination regarding to the changes made at Phase 2, Test Cell T2 will be made following future discussions between Ford and the AQD.

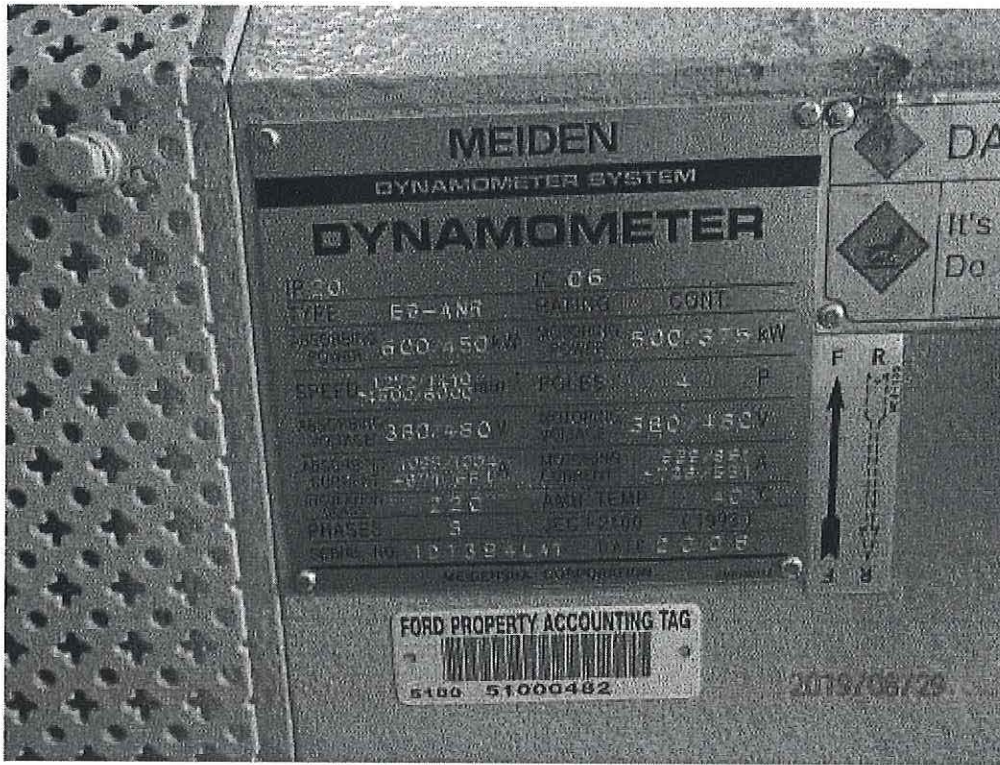


Image 1(Test Cell T2) : Phase 2, Test Cell T2 Plate

NAME *[Signature]*

DATE 10/15/20 SUPERVISOR *JK*