

M4734

MANILA

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

M473434501

FACILITY: FORD MOTOR CO AUTO TRANSMISSION NEW PRODUCT CENTER		SRN / ID: M4734
LOCATION: 35500 PLYMOUTH RD, LIVONIA		DISTRICT: Detroit
CITY: LIVONIA		COUNTY: WAYNE
CONTACT: Adam Albright, Environmental, Health & Safety Engineer		ACTIVITY DATE: 05/12/2016
STAFF: Todd Zynda	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: 2016 Scheduled Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: FY2016 Scheduled Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Adam Albright, Environmental Engineer H&S Coordinator; David Russell, Environmental Quality Office; 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 (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 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 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 15, 2015 the facility was issued Permit to Install (PTI) 68-12A to address remaining dynamometer installations that did not occur under the "Phase 3" installation.

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 CCCCC.

INSPECTION NARRATIVE

On May 12, 2016 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 and PTI 68-12A. At approximately 9:30 AM, the AQD entered the facility, and was greeted by Mr. Adam Albright, Environmental, Health & Safety Engineer, and Mr. David Russell, Ford Environmental Quality Office.

During the opening meeting, facility operations and required records were discussed. Mr. Albright provided required records or demonstrated that records are maintained via spreadsheet on the computer. Any records not provided at the time of inspection were provided via email on May 16, 2016.

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 68-12A.
- Phase 3A – 2 cells that are permitted under PTI 68-12A. The installation has not been completed.

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.

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 (RTO's) 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 on line 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 to be under construction. According to Mr. Albright, the cells are expected to be operational in June 2016.

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

RTO 1 (idle)

Tower #1 (purge) – 1512 °F

Tower #2 (exhaust) – 1515 °F

Tower #3 (inlet) – 1543 °F

RTO 2 (operating)
Tower #1 (inlet) – 1522 °F
Tower #2 (exhaust) – 1510 °F
Tower #3 (purge) – 1534 °F
Inlet Temperature - 132 °F
Exhaust Temperature – 193 °F
Delta P – 0.0 in. wc
O2 – 17.7 %

RTO 3 (idle)
Tower #1 (inlet) – 823 °F
Tower #2 (purge) – 824 °F
Tower #3 (exhaust) – 807 °F

There is a backup chart 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 2 was operating, with RTOs 1 and 3 in idle mode.

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 May 16, 2016.

The tour concluded with observation of the facility cold cleaner (located in the Phase 1 area). At the time of inspection, the cold cleaner lid was closed and appeared to meet Rule 707 requirements. A copy of the safety data sheet (SDS) for the material used was provided.

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

OPERATING SCHEDULE/PRODUCTION RATE

Ford ATNPC operates 24 hours a day, 7 days a week.

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 and FG-RULE 287(c) were not evaluated as the facility does not operate any Rule 290 equipment or a surface coating line subject to Rule 287(c).

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

Source Wide Conditions

The definitions of major source are different between Title V/Part 70 and the NESHAP definition. Based on the NESHAP definition, Part 63, Ford ATNPC and Livonia Transmission would be considered a single stationary source. As such, the HAP emissions must be aggregated to demonstrate that the facility can opt out of MACT.

SC I.1 and 2, SC VI. 1.a and b. **COMPLIANCE.** Emissions of each HAP less than 9 tons and aggregate HAPs less than 22.5 tons per year. Individual and aggregate HAP records to be maintained. Highest 12 month rolling aggregate HAP emissions from May 2014 through April 2016 occurred during May 2015 at 7.64 tons for both facilities combined. This indicates compliance with both aggregate and individual HAP limits. Records are maintained.

FG-PHASE2

Dynamometer testing at 21 engine driven dynamometer test cells and 6 chassis rolls. Equipment is exempt per Rule 285(g).

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 May 2014 through May 2016 occurred during May 2014 at 406,190 gallons.

FG-PHASE3 – PTI 68-12A

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 reported lb/day emissions occurred during December 2015 (NO_x = 200.10 lb/day and SO_x = 2.86 lb/day). VOC emissions are reported as 0.0 lb/day, based on emission testing conducted April 2013.

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 PM2.5 - 11.7 tpy. The maximum reported tpy emissions occurred either in February 2016 or March 2016 (SO_x = 0.28 tpy [February], NO_x = 25.81 tpy [March], CO = 0.58 tpy [February], PM10 = 4.93 tpy [February], PM2.5 = 2.27 [March]).

SC I. 3, SC V. 1. **COMPLIANCE.** NO_x emissions shall not exceed 84.5 pph. The most recent stack test was conducted April 2 and 3, 2013 on RTO #1. The average NO_x emission rate for diesel fuel was 3.2 pph and gasoline at 6.3 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. Albright, 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 April 2 and 3, 2013 on RTO #1. The average VOC emission rate for diesel fuel was 0.0 pph and gasoline at 0.0 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 April 2 and 3, 2013 on RTO #1. The average CO emission rate for diesel fuel was 0.0 pph and gasoline at 0.7 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 gas, 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 May 2014 through May 2016 occurred in December 2015 at 837.29 gallons. The highest 12-month rolling fuel usage occurred in February 2016 at 232,159 gallons. The highest diesel or diesel-like fuel usage occurred during March 2016 at 54,680 gallons. Based on records provided during 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 fuel certification provided during the inspection

indicates that gasoline does not contain lead.

SC III. 1. **COMPLIANCE.** Shall submit malfunction abatement plan (MAP). An updated MAP (dated August 21, 2014) was received September 22, 2014.

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 #2 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 (records were visually observed during inspection). Temperature readings for May 6 through May 13, 2016 indicate that RTO #2 was in operation and the temperature was 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 provided maintenance records (see attached) 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, catalyst aging, and 93 octane 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 68-12A

Two dynamometers housed in the same building as the Phase 3 dynamometers. Emissions are to be controlled by the 3 RTO's. At the time of inspection, the Phase 3A test cells were not fully installed or operational. According to Mr. Albright, Phase 3A test cells should be up and running in June 2016.

As such, applicable conditions were not evaluated.

FG-COLDCLEANERS

The facility operates one cold cleaner in the Phase I 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.

Observations indicate that the cold cleaner vents to the in-plant environment and is equipped with a cover. The cover was closed at the time of the inspection. 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,& 4. **NOT EVALUATED.** (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. These conditions were not evaluated at the time of inspection.

FG-RULE287(c)

The facility currently does not operate a surface coating line. Conditions under this flexible group were not evaluated.

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, EU-PHASE3 and EU_TANKFARMS6-12 appear to be subject to the area source MACT Subpart CCCCC. 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 JJJJJ NESHAPS for Industrial, Commercial, and Institutional Boilers	U.S. EPA promulgated Subpart JJJJJ 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 JJJJJ 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 PPPP – 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 PPPP – NESHAPs for Engine Test Cells/Stands	40 CFR Part 63, Subpart PPPP 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.

EXEMPT EQUIPMENT

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

Phase 2 combustion engines are exempt from permit to install requirements per Rule 285(g). Equipment was installed prior the promulgation of Rule 278.

MAERS REPORT REVIEW

Reporting year 2014 MAERS was submitted in a timely manner and reviewed by AQD staff. See facility file. The 2015 MAERS submittal has not been reviewed at the time of this report writing.

FINAL COMPLIANCE DETERMINATION

At this time, Ford ATNPC appears to be in compliance with applicable permit conditions as well as state and federal rules.

NAME 

DATE 5/25/16 SUPERVISOR JK