

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

N722867197

FACILITY: FCA US LLC - Dundee Engine Plant		SRN / ID: N7228
LOCATION: 5800 N. ANN ARBOR RD, DUNDEE		DISTRICT: Jackson
CITY: DUNDEE		COUNTY: MONROE
CONTACT: Chris Templeton ,		ACTIVITY DATE: 04/25/2023
STAFF: Stephanie Weems	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled FY23 inspection conducted unannounced.		
RESOLVED COMPLAINTS:		

Major Source. Full Compliance Evaluation (FCE) and Inspection (PCE) of FCA US LLC – Dundee Engine Plant SRN N7228

Facility Contacts

Chris Templeton

Chris.templeton@stellantis.com

Purpose

On April 25, 2023, I conducted an unannounced inspection of the FCA (Fiat Chrysler Automobiles) US LLC – Dundee Engine Plant (DEP) facility located in Dundee, Michigan (Monroe County) at 5800 North Ann Arbor Road. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules, and the conditions of DEP's Renewable Operating Permit (ROP) number MI-ROP-N7228-2023, issued March 1, 2023. This facility was last inspected on January 27, 2022 and found to be in compliance.

Facility Location

The facility is located within the city limits of Dundee. It is immediately surrounded by commercial, industrial, and agricultural sources. See attached aerial photo.

Arrival & Facility Contacts

I arrived in the area of FCA around 8:45AM. No odors or visible emissions were observed on my drive around or approach to the facility.

Upon entering the facility, I checked in with security. The security guard informed me that I was not on the list of visitors so I would need to call my contact to add me to the list. I proceeded to call Chris Templeton and he met me in the lobby.

Chris extended his full cooperation during the inspection and fully addressed my questions.

Facility Background

The facility consists of two parallel engine manufacturing plants (North and South) with engine assembly occurring in the middle of the facility. The engine parts are machined, processed, etc. along the facility's perimeter and gradually move towards the center. The finished engines are loaded on racks and are shipped by truck or rail to the designated automotive assembly plant. The aluminum engine blocks, engine heads, and crank shafts arrive pre-cast. These components are machined and assembled with other prefabricated engine components to complete an engine.

A sample of the different engine types are tested on the onsite dynamometers. The hot test engine test stands are designed to complete more intrinsic testing of the engines. Engines that are marked as at more risk during the assembly are generally the ones being tested.

Regulatory Applicability

The facility is a Major / ROP source because the facility has the potential to emit CO emissions over 100 tons per year. The facility is regulated by ROP number MI-ROP-N7228-2023.

The facility is considered a minor source of Hazardous Air Pollutant (HAP) emissions because the potential to emit of any single HAP is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

Therefore, DEP is subject to Title 40 of the Code of Federal Regulations (CFR), Part 63, Subparts A and ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (RICE) and is regulated as an area source under the standard.

DEP is also subject to 40 CFR, Part 63, Subpart CCCCC, NESHAP for Area Source Gasoline Dispensing Facilities.

The facility reports its emissions to the Michigan Air Emissions Reporting System (MAERS) and is designated as a Fee Category B source. The facility reported the following emissions for 2022:

- 87.65 tons of CO
- 5.34 tons of NOx
- 3.67 tons of VOC
- 2.13 tons of PM

Pre-Inspection Meeting

A pre-inspection meeting was held with Chris, Chris McBee (Environmental Specialist), and Tom Zimmerman (UAW Environmental) to gain some background information and to discuss how the inspection would proceed.

During this conversation, Chris T explained that up until recently, the facility had approximately 1000 employees. He said that this number has gone down because the facility is currently retooling the North side for two new engines, as the two engines that they used to produce on that side are no longer being made. He also said that they usually run 3 shifts, 5 days a week (Monday-Friday) with the occasional Saturday if needed. He explained that if they do have to run on a Saturday it is typically just one line that will operate.

Preventative Maintenance Plans (PMPs) are used to maintain compliance with EU-DRYMACHINE and EU-WETMACHINE permit conditions. Additionally, the Malfunction Abatement Plan (MAP) (submitted 12/20/2019) is used to maintain compliance with FG-MACHINING-S permit conditions.

Chris also confirmed that DEP employs a central, computer-based system, Total Maintenance System, to track all maintenance related actions and records. He also explained that natural gas meters are utilized to demonstrate compliance with material limits imposed by FG-HEATERS and FG-HOT_TEST, with data being sent and stored in an electronic database.

I then asked Chris T if there have been any recent changes at the facility. He explained that they are in the process of retooling the North side, and that they should start using that side again in 2024/2025. They are currently in the process of removing machines that will no longer be used. Aside from that, he stated that there were no other changes.

The facility also has emergency RICE, which are on the mezzanine level, and are a part of FG-CIEMERG-RICE and FG-SIEMERG-RICE. During the last inspection, FCA had indicated that they had discovered an issue with these units tripping on. In their notification to EGLE they stated that they had contacted the manufacturer to fix the issue. I proceeded to ask Chris if they have had any further issues with the emergency generators. He said that the manufacturer did come out and fix the issue and they have not had any further issues.

I then outlined the various locations that I wanted to see. Chris T explained that a safety presentation would need to be viewed to enter the North side of the plant. He then presented the safety presentation.

Onsite Inspection Narrative

High-visibility vest, steel-toed shoes, hard hat, and eye protection were required during the inspection today.

FG-MACHINING-S

We began by touring the South Plant section. Chris and Chris began by showing me through the machining area that makes up FG-MACHINING-S. This area consists of machining operations used for engine manufacturing and assembly. These units are vented to the in-plant environment.

In this area Chris showed the Filter Gallery. This houses coolant filtration equipment that purifies and recirculates the coolant utilized by EU-WETMACH-S. Chris showed me a few of the control devices in this area and the associated gauges. We viewed the following mist collectors: AAA3594, AAA3569, and AAA3568. I was able to see that there is a pressure gauge and hour meter on the device. All of the units appeared to be operating according to the manufacturer's guidelines.

NORTH PLANT – EUDRYMACHINE & EUWETMACHINE

Next, we observed the North Plant. Upon entering this side of the facility, it was evident that nothing was operating. No employees were seen in this area, and many of the machines had been removed or were in the process of being removed. We viewed a few of the control devices to show that they were installed, but since this area is currently out of operation, nothing was running.

FG-DYNOS

Next, we observed the area where FG-DYNOS are housed. These emission units are individual test cells where engines are tested for performance under controlled

operating scenarios. There are a total of six engine dynamometers and unleaded gasoline is used to fuel the engines. The emissions are calculated based on the pound per gallon emission factors and the amount of fuel combusted. Each test lasts for about 40 minutes. None of the dynos were active during the inspection.

The gasoline used in the dynos is stored outside in two adjacent tanks that share a common sealed enclosure. One tank is 1700 gallons in size while the other is 550 gallons. It is referred to as FG-GASDISPENSE. Each dyno has a separate usage meter that records the data electronically. From there, Chris is able to go in to monitor and review the gas usage for FG-DYNOS.

FG-HOT_TEST

Next to the dyno cells are the hot test stand cells. These emission units are used to perform intrinsic diagnostic engine testing beyond what can be accomplished in the engine dynamometers. Natural gas is used for the fuel in these two test stations. Each test stand has its own natural gas meter, and the data is recorded and stored electronically. Just as with FG-DYNOS, Chris is able to go into the system to review and monitor the natural gas usage.

Chris explained that these units were used to test the World Gas engines, but since they don't make World Gas engines anymore, they currently don't use FG-HOT_TEST. Therefore, these units were not in operation at the time of this inspection.

FG-CIEMERGE-RICE and FG-SIEMERG-RICE

I did not observe these units during this inspection. From previous inspections, it appears that two of the FG-CIEMERGE-RICE units are located on the mezzanine level in the North plant and 2 more are located on the mezzanine level in the South plant. It was confirmed during previous inspections that these units were in equipped with a non-resettable hour meter.

Overall, the facility appeared well-kept with all control devices and process units appearing well-maintained.

Post-Inspection Meeting

After the tour of the facility was done, I held a brief post-inspection meeting with Chris and Chris. I informed them that I did not have any immediate concerns at that time. I thanked Chris for his cooperation and assistance and departed the facility at approximately 10:50 am.

Recordkeeping Review

During the inspection I provided Chris the following record request:

SOURCE-WIDE

- Monthly and 12-month rolling total Source-Wide NOx mass emissions.
- Monthly and 12-month rolling total Source-Wide CO mass emissions.

EUDRYMACHINE

- Record indicating the particulate control device name and manufacturer's recommended filter change schedule
- Records of the control equipment identification, date of inspection, and maintenance activities conducted

EUWETMACHINE

- Record indicating the particulate control device name and manufacturer's recommended filter change schedule
- Records of the control equipment identification, date of inspection, and maintenance activities conducted

FG-MACHINING-S

- Records required by the approved MAP for FG-MACHINING-S.

FG-DYNOS

- Test reports for FG-DYNOS, as required by SC V.1.
- The following daily records for FG-DYNOS **for the 15th day of each month**
 - a. Hours of operation in an operating day
 - b. Daily gallons of unleaded gasoline used in FG-DYNOS
 - c. Hourly gallons of unleaded gasoline calculations based upon the daily gallons of unleaded gasoline divided by the number of hours FG-DYNOS operated during the calendar day.
- The following monthly records for FG-DYNOS (SC. VI.4):
 - a. Days of operation
 - b. Gasoline usage calculations determining the monthly usage rate in gallons per calendar month
 - c. Gasoline usage calculations determining the annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month

- d. CO emission calculations determining the monthly emission rate in tons per calendar month
- e. CO emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month
- Fuel supplier certification records or fuel sample test data, for unleaded gasoline used in FGDYNOS, demonstrating that the fuel meets the requirements of SC II.3.

FG-HEATERS

- Monthly records of the natural gas usage for FG-HEATERS.
- Previous 12-month rolling natural gas use records for FG-HEATERS.
- Manufacturer documentation showing that each piece of equipment in FG-HEATERS has low NOx burner installed.

FG-HOT_TEST

- The following daily records for FG-HOT_TEST **for the 15th day of each month:**
 - a. Hours of operation in an operating day
 - b. Daily natural gas used in FG-HOT_TEST
 - c. Hourly natural gas usage calculations based upon the daily natural gas usage divided by the number of hours FG-HOT_TEST operated during the calendar day
- The following monthly records for FG-HOT_TEST:
 - a. Days of operation
 - b. Natural gas usage calculations determining the monthly usage rate in MMcf per calendar month.
 - c. Natural gas usage calculations determining the annual usage rate in MMcf per 12-month rolling time period as determined at the end of each calendar month

FG-CIEMERG-RICE

- Records of the occurrence and duration of each malfunction of operation or the air pollution control monitoring equipment for each engine in FG-CIEMERG-RICE
- Records of performance tests and performance evaluations
- Records of all required maintenance performed on the air pollution control and monitoring equipment
- Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunction process and air pollution

control and monitoring equipment to its normal or usual manner for each engine in FG-CIEMERG-RICE

- Records of the total hours of operation for each engine in FGCIEMERG-RICE on a monthly basis, and the hours of operation during emergency and non-emergency service that are recorded through the non-resettable hour meter for each engine in FGCIEMERG-RICE on a calendar year basis. These records should document how many hours were spent for emergency operation, including what classified the operation as emergency.
- Fuel supplier certification records or fuel sample test data, for diesel fuel oil used in FGCIEMERGE-RICE, demonstrating that the fuel meets the requirements of SC II.1.

FG-SIEMERG-RICE

- Records of the occurrence and duration of each malfunction of operation or the air pollution control monitoring equipment for each engine in FG-SIEMERG-RICE.
- Records of performance tests and performance evaluations
- Records of all required maintenance performed on the air pollution control and monitoring equipment
- Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunction process and air pollution control and monitoring equipment to its normal or usual manner for each engine in FG-SIEMERG-RICE
- Records of the total hours of operation for each engine in FG-SIEMERG-RICE on a monthly basis, and the hours of operation during emergency and non-emergency service that are recorded through the non-resettable hour meter for each engine on a calendar year basis

FG-RULE290

- Records of the following information for each emission unit of FG-RULE290 for each calendar month:
 - a. Records identifying each air contaminant that is emitted
 - b. Records identifying if each air contaminant is controlled or uncontrolled
 - c. Records identifying if each air contaminant is either carcinogenic or non-carcinogenic
 - d. Records identifying the ITSL and IRSL, if established, of each air contaminant that is being emitted under the provisions of Rules 290(a)(ii) and (iii)

- e. Records of material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions in sufficient detail to demonstrate that the actual emissions of the emission unit meet the emission limits outlined in this table and Rule 290.
- Inventory of each emission unit that is exempt pursuant to Rule 290. This inventory shall include the following information:
 - a. A written description of each emission unit as it is maintained and operated throughout the life of the emission unit.
 - b. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(2)(a)(iii), a written description of the control device, including the designed control efficiency and the designed exhaust gas flow rate
- Monthly records of the Method 9 visible emission observations conducted for each stack or vent during routine operating conditions for each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(2)(a)(iii).

FG-GASDISPENSE

- Records of gasoline throughput to demonstrate that monthly throughput is less than 10,000 gallons.

On May 4, Chris McBee sent the requested records by email.

This submission includes the monthly and 12-month rolling records for the facility-wide CO and Nox emissions. As of March 2023, the facility reports their 12-month rolling Nox emissions are 4.87 tons per year (tpy) and their 12-month rolling CO emissions are 64.0 tpy. These are well below the permitted limits of 40.4 tpy for NOx and 224.9 tpy of CO.

For EUDryMachine and EUWetMachine, DEP has included the filter change records and the control device ID information. Additionally, for FGMachiningS, the facility has included the operating hours and PM calculations for the control devices.

Furthermore, records for FGDYNOS was included. Monthly and 12-month rolling CO emissions were reported. As of March 2023, the facility reports 12-month rolling emissions of CO as 62.05 tpy. This is well below the permitted limit of 219.23 tpy. These records also include the run time hours for each dyno, the amount of gasoline used, and the fuel supplier records. It appears that the facility is well below the 30 gallons daily average gasoline usage as well as the 12-month rolling gasoline usage requirement. The facility reports a 12-month rolling usage of 39,777.1 gallons per year, and their limit is 137,850 gallons per year.

For FGHot_Test, the facility supplied the daily operation records, including the hours of operation, the daily natural gas usage, the hourly natural gas usage calculations, and the monthly and 12-month rolling natural gas usage calculations. These records show that FGHot_Test did not run during the requested reporting period.

For FGHeaters, the facility supplied documentation of the low Nox burners installed as well as the natural gas consumption for the facility. The facility reports a 12-month rolling total of 46.16 MMCF/year which is well below the 378 MMcf/yr permit limit.

For FGCIEMERG-RICE and FGSIEMERG-RICE, the facility supplied their PM records, the fuel supplier certifications, and run time records. Additionally, the facility reported that there had been no malfunctions of any of the units during the reporting period.

DEP also included their records to show compliance with Rule 290. These records include all of the necessary information for each component, as required in the rule. Overall, it appears that the facility is meeting this rule.

Lastly, the records include the gasoline usage required by FGGasolineDispense.

Overall, the records appear to show compliance with the emission limits, material limits, and monitoring and recordkeeping requirements outlined in the ROP.

Compliance Summary

Based upon the visual observations and the review of the records, DEP appears to be in compliance at the time of this inspection.

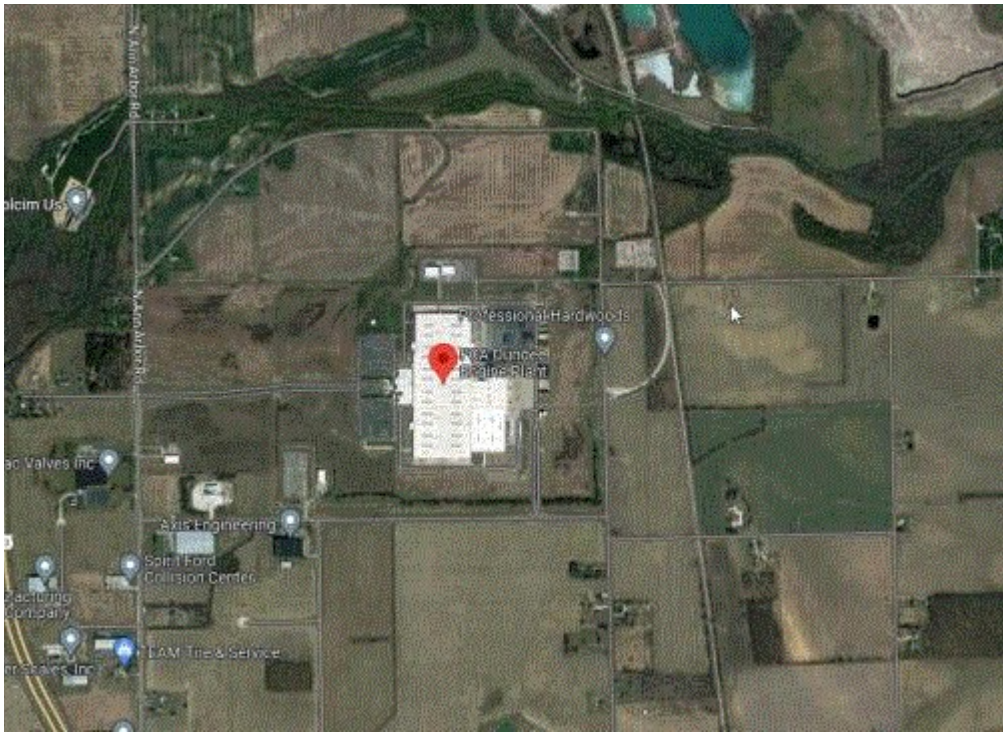


Image 1(Aerial) : Aerial view of facility taken from Google Maps.

NAME Stephen Weems

DATE 4/25/2023

SUPERVISOR [Signature]