

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

N722854344

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: 07/29/2020
STAFF: Stephanie Weems	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Announced, scheduled inspection conducted virtually (due to COVID-19) as part of FCE.		
RESOLVED COMPLAINTS:		

Major / ROP Source. Full Compliance Evaluation (FCE) and Inspection (PCE) of FCA (Fiat Chrysler Automobiles) US LLC – Dundee Engine Plant (formally GEMA), located at 5800 North Ann Arbor Road, Dundee, Michigan 48131. SRN N7228

Facility Contacts

Chris Templeton

Chris.templeton@fcagroup.com

Purpose

On July 29, 2020, I conducted a virtual scheduled, announced 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. This inspection was announced and conducted virtually due to the ongoing COVID-19 pandemic and the need for exercising increased safety measures. 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-N7228-2018a, issued April 28, 2020. This facility was last inspected on March 22, 2018 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 / agricultural sources. See attached aerial photo.

Arrival & Facility Contacts

On 7/28 a Microsoft Teams meeting was held with Chris to test the software and check for any connectivity issues. Chris was able to connect to this meeting through his work laptop. Due to FCA's technology policies in regard to their work iPhones, Chris was not able to get the Microsoft Teams app on his work phone. We tried to troubleshoot the app on his person phone, but we were not able to get it to connect. Chris said he would discuss this issue with FCA – DEP's IT technicians, but he explained that if he could not get it to work on his phone, he would use his laptop for the inspection on 7/29.

The 7/29 virtual inspection was conducted using Microsoft Teams. Chris said that DEP's IT technicians were able to help him troubleshoot the app on his person phone, so he would be using his personal phone for the duration of the inspection. The meeting started at 9:30AM.

A pre-inspection conversation was held with Chris. Chris and I discussed what processes and information needed to be observed during this inspection. Chris extended his full cooperation during the inspection and fully addressed my questions.

Facility Background

Initially the plant was called the Global Engine Manufacturing Alliance (GEMA), and was a joint venture between Mitsubishi Motors Corporation, Hyundai Motor Company and DaimlerChrysler Corporation (groundbreaking occurred in 2003). In 2009 bankruptcy was declared and GEMA was partially acquired by FCA. Full acquisition by FCA has since occurred.

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.

During the last inspection it was noted that the North Plant assembles the Tigershark and World Gas engines; with each having several platforms/variations (e.g. 2.0-liter or 2.4-liter). In addition, on the North Plant side, DEP machines engine heads, cranks, and blocks and then assemble the engine components. It was also noted in the last inspection report that the

South Plant had been idle and awaiting new work. At that time, it was noted that ROP modifications would be required if the South plant were retooled if new work arrived.

However, since the last inspection, the facility was issued PTI 42-19 that has since been incorporated into MI-ROP-N7228-2018a through the ROP Modification process. Therefore, the ROP now includes processes that are housed in the South Plant. Chris explained that this South Plant has taken over production of engines that used to be processed at one of the Mack facilities.

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-N7228-2018a.

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.

On July 19, 2019, AQD received delegation of authority to implement 40 CFR Part 63, Subpart ZZZZ from the United States Environmental Protection Agency (USEPA). However, on December 20, 2019, AQD requested clarification from USEPA regarding this delegation of authority. In the clarification letter AQD stated, "It was the intent of both EGLE and the USEPA for delegation to implement NESHAPs for sources subject to the Title V Program to only include delegation for major sources subject to such standards unless EGLE promulgated a rule incorporating by reference such NESHAP." Therefore, it is still under review as to whether AQD has the delegated authority to implement this regulation for area sources.

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 2019:

- 58.4 tons of CO
- 4.3 tons of NOx
- 2.5 tons of VOC
- 2.7 tons of PM10

Pre-Inspection Meeting

The pre-inspection conversation was held with Chris to gain some background information and to discuss how the inspection would proceed.

During this conversation, Chris explained that the facility has approximately 700 employees currently. He said that, due to the recent events with COVID-19, some shifts aren't working, but when they have all shifts back to work, they will have approximately 11,000 employees. He also said that they usually run 3 shifts, but currently the North Plant is running at 1 shift and the South Plant at 2 shifts.

Chris confirmed that the 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.

Next, I inquired how the facility monitors natural gas usage in order to demonstrate compliance with the material limit imposed by FG-HEATERS and FG-HOT_TEST. Chris confirmed that natural gas meters are utilized, with data being sent and stored in an electronic database. This information is then reviewed and confirmed.

The facility also has six emergency RICE, which are on the mezzanine level, and are a part of FG-CIEMERG-RICE and FG-SIEMERG-RICE. A look at the recently supplied records confirmed that they are following and complying with the requirements of NESHAP subpart ZZZZ. They also noted they are complying with Title 40 of CFR, Part 63, Subpart CCCCC, NESHAP for Area Source Gasoline Dispensing Facilities which for them is just mostly very basic housekeeping practices.

Lastly, I asked Chris about the installation of EU-HOT_TEST3 and FG-HEATERS. A condition of PTI 42-19 was that notification of the completion of installation be supplied to AQD. DEP did supply a notice of completion for the other permitted processes, but EU-HOT_TEST3 and units in FG-HEATERS had not been installed at that time. Chris explained that these

units have still not been installed. They were supposed to have been installed earlier this year, but due to COVID-19 the installation of these units has been delayed.

I outlined the various locations that I wanted to see. Chris then proceeded to use his phone to conduct an onsite tour to observe the overall facility process (the machining of engine parts and engine assembly) and specific EUs covered by their ROP.

Onsite Inspection Narrative

FG-MACHINING-S

We began by touring the South Plant section. 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. The first, unit AAA233594, was not operating at the time of the inspection. However, I was able to see that there is a pressure gauge and hour meter on the device. The second control device observed was operating. Chris was able to show me the gauge, and the unit appeared to be operating properly. The third unit was connected to a washer machine, and I was able to see that it vented internally. I was able to see the pressure gauge that showed that the unit appeared to be operating according to the manufacturer's guidelines.

Chris explained that this Filter Gallery is a mirror image of the North Plant Filter Gallery. The South Filter Gallery, however, has one less coolant system than the North Plant Filter Gallery.

WEARHOUSE

Chris then walked out to the new warehouse area. It is currently incomplete, but it should be finished within a month or so. Chris explained that this is where they will store many of the parts that are currently being stored on the plant floor. This is also where some of the new units for FG-HEATERS will go.

EUDRYMACHINE

Next, we observed the machining processes in the North Plant. This emission unit entails the dry machining of the major engine components. The "dry" reference is due to the permit-specified air pollution control equipment required to control the PM, which is generated during the grinding, boring and drilling processes. The actual activity is enclosed in a booth to improve PM capture and to maintain the controlled environmental conditions within the plant. The particulate emissions are captured and ducted to one of the central PM filtration systems. The emissions are calculated based upon the number of hours of operation, the airflow exhausted through the system and the emission factor in the permit.

I observed dust collector AAA184310, which has an alarm set point above 4 inches of water, which sounds an alarm to indicate the need to replace the filter bags. Chris was able to pan around the unit, and during this time I tried to look for any possible visible emissions. Based upon what I could see, I observed no visible opacity from any interior components or evidence of air leaks from this unit or from any of the remaining dust collectors that were observed during the inspection. In addition, all of the observed dust collectors operated within the set points indicated on the static pressure gauge.

EUWETMACHINE

We then observed the North Plant Filtration Gallery, which houses coolant filtration equipment that purifies and recirculates the coolant utilized by EUWETMACHINE. Mist eliminators that vent to the outdoors are used to control emissions from this process. They are spread out across the facility but are mainly concentrated in both the South and North Plant Filtration Galleries. Several oil mist collectors that vent to the interior of the plant are also utilized by EUWETMACHINE but are exempt because they do not vent to the outdoors / atmosphere, per Rule 285(2)(l)(vi)(B).

This emission unit covers the wet machining of the major engine components, where coolant is centrally plumbed to enclosed stations where grinding, boring or drilling occurs. The emissions are calculated based upon the number of hours of operation, the airflow exhausted through the system and the emission factor in the permit. Chris confirmed that the shavings and liquid are collected and transported via underground piping to one of the two Filtration Galleries. Purified coolant is plumbed back to the wet machining stations. The collected coolant sludge is transported offsite for processing, while the metal shavings are collected and sent offsite for recycling, etc.

While in the North Plant Filtration Gallery, I observed a few of the oil mist collectors (AAA192138, AAAA192139, AAA192140, and AAA192141). I observed set points for the alarm to activate when the second and third stage filtration static pressure is above 3 or 4 inches of water ranges, respectively. (Actual readings were between 0.7" and 1.5".) In addition, I observed no visible opacity from any interior components or evidence of liquid leaks from this unit or from any of the other oil mist collectors that were observed during the inspection. I was also able to see that each control device was equipped with an hour meter.

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. Chris asked the dyno operator about the cells being inactive and the operator explained that it was about to be lunch break, so all of the tests had been completed until after lunch.

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.

Currently, there are only two test stands installed. 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 each test lasts about 13 minutes. He said they currently test the World Gas engines in these cells, but since they don't make as many World Gas engines there are fewer tests conducted in FG-HOT_TEST than for FG-DYNOS.

Neither of these units were in operation at the time of this inspection.

FG-RULE 290

Chris then brought us around to a few of the units covered by FG-RULE290.

These emission units are robotic adhesive application stations, where depending upon the type of engine, a specific adhesive is applied in very small quantities.

Chris explained how the adhesive is piped to the robotic arm and applied to the part. I was able to see that it only takes a very small amount of adhesive for each part.

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 the last inspection that these units were in excellent condition and 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 virtual tour of the facility was done, I held a brief post-inspection conversation with Chris. I informed him that I did not have any immediate concerns at that time. I thanked Chris for his cooperation and assistance and ended the Microsoft Teams meeting at approximately 11:00 am.

Recordkeeping Review

Due to COVID-19 precautions, the recordkeeping review was conducted as a separate PCE. The full review of the required recordkeeping can be found in the report dated 06/29/2020. Overall, the records appear to show compliance.

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(1) : Aerial view

NAME John W.

DATE 8-14-2020

SUPERVISOR [Signature]