

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

N779530552

FACILITY: ZF Axle Drives Marysville		SRN / ID: N7795
LOCATION: 2900 Busha Highway, MARYSVILLE		DISTRICT: Southeast Michigan
CITY: MARYSVILLE		COUNTY: SAINT CLAIR
CONTACT: Brian Miller		ACTIVITY DATE: 07/30/2015
STAFF: Sebastian Kallumkal	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Onsite Inspection		
RESOLVED COMPLAINTS:		

On July 30, 2015, I conducted a targeted annual inspection at ZF Axle Drives Marysville, LLC. located at 2900 Busha Highway in Marysville, Michigan. The purpose of the inspection was to determine facility's compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Rules; Permit-To-Install (PTI) Number 147-07A for various metal working machinery, natural gas burning ovens and furnaces, and three heat treating lines equipped with oil quench tanks.

I arrived at the facility at about 11:10 AM. At the site, I met Mr. Brian Miller, Environmental Specialist. Thomas Collins, Maintenance Manager [(810) 989-8742, cell: 734-780-5794], AQD contact, was not available. I introduced myself and stated the purpose of the visit. I provided him the DEQ Environmental Inspections: Rights and Responsibilities Brochure.

During the pre-inspection meeting we discussed facility's operations. ZF Axle Plant is involved in the building and assembling of the front and rear axles for the light duty trucks and cars. Chrysler owns the heat treating lines and the building, but ZF Industries has been contracted to build and assemble the axles for Chrysler. ZF Industries has also assumed environmental compliance responsibilities for the facility. It also makes axles for some of the General Motors vehicles.

The facility currently has three heat treating lines: North, South and East. These heat treating lines are grouped under FG-HEATREAT in the permit. Each heat treating process includes carburizing in the carburizing furnace, oil quenching in the quench oil tank, parts washing and rinsing, and tempering in the tempering furnace. In the carburizing furnace ammonia and Endo Gas (heated natural gas) are used to give the parts the desired properties. Natural gas is used for heating the furnace and to produce Endo Gas.

Initially teeth are cut into blank metal cylinders using dry CNC machines to make pinions and rings. The parts undergo carburizing, oil quenching, cleaning and tempering. The tempered parts are assembled in to axles. Before tempering isolation paste is coated on the end or inside of parts in order to avoid carburizing on those areas. The facility has a Safety Kleen parts washer using water based cleaners, welding, LASER cutting machines, a phosphate coating line, one natural gas fired emergency generator, and two diesel fired water pumps, etc.

He also informed me that the facility currently has 4 carburizing furnaces and is installing the fifth carburizing furnace; has 2 tempering furnaces and is installing the third tempering furnace; has 3 endo gas generators and is installing the 4th endo gas generator. All these new additions would be a part of the EU-EAST-HT.

He told me that they have a natural gas fired emergency generator and two diesel fired water pumps which were installed after 2007. I informed him that the emergency generator would be subject to 40 CFR 63, Subpart ZZZZ-National Emission Standards for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines and 40 CFR 60, Subpart JJJJ-NSPS for stationary natural gas fired reciprocating internal combustion engines and the diesel fired water pumps would be subject to 40 CFR 63, Subpart ZZZZ and 40 CFR 60, Subpart IIII-NSPS for diesel fired reciprocating internal

combustion engines. I informed him that the facility needs to verify compliance with these regulations.

After the pre-inspection meeting, he accompanied for an inspection of the facility. We visited the dry machines which perform various machining operations to convert metal parts into ring and pinion gears. Facility has four ring gear CNC machines and 4 pinion gear CNC machines. They are self contained and have no exhaust. The metal shavings are collected and sent offsite for recycling. These machines do not use any coolant.

We also inspected the pasting stations. Five robotic arms apply paste to pinions and rings before carburizing. I requested MSDS and usage information for the pasting. This process appears to be exempt from Rule 201-permit to install requirements pursuant to Rule 287(a).

The phosphate coating line includes acid and alkaline clean tanks and rinse tanks.

Next we inspected the grinders which smoothens the surfaces of the gears. Similar to the CNC machines there are 8 grinders (4 pinions and 4 rings). The exhausts from the grinders are controlled by individual HEPA Hoffmann filters and the air is released into the general plant area. The coolant is filtered and reused. Next we inspected the heat treating lines.

Next we inspected the 1,000 gallon horizontal ammonia tank located outside. He informed me that the truck driver is loading the tanks and is using proper safety measures while loading. The facility provided the minutes of the L.E.P.C. meeting they attended in July 2014 regarding the approval of the emergency plan.

Next we visited the natural gas fired emergency generator. He told me it is tested 1 hour per week. We also visited the two diesel fired water pumps for the water suppression systems. He told me they test each pump every week for half an hour. I told him that they need to verify compliance with 40 CFR 60, Subpart JJJJ for emergency generator and Subpart IIII for the water pumps.

Compliance

EU-AMMONIA lists the requirements for ammonia delivery and storage. Mr. Miller told me that they are following the appropriate procedures for Ammonia loading. Ammonia is delivered once every 6 weeks. The facility also has a vertical nitrogen storage tank located near the ammonia tank. Nitrogen is added to the furnaces during non-production time.

FG-HEATTREAT includes 3 heat treating lines (EU-NORTH-HT, EU-SOUTH-HT, EU-EAST-HT).

SC I.1 limits volatile organic compounds (VOC) emissions to 1.9 TPY based on 12-month rolling time period as determined at the end of each calendar month. The submitted calculations show that the VOC emissions are 1.2 TPY as of July 2015.

SC II.1 limits ammonia usage to 20.2 TPY based on 12-month rolling time period as determined at the end of each calendar month. The submitted calculations show that the ammonia usage was 7.5TPY as of July 2015.

SC II.2 limits quench oil usage to 475 gallons based on 12-month rolling time period as determined at the end of each calendar month. The submitted calculations show that the quench oil usage was 326.5 gallons as of June 2015.

FGFACILITY

SC I.1 limits the NOx emissions from FGFACILITY which includes all process equipment at this source to less than 90 TPY based on 12-month rolling time period as determined at the end of each calendar month. The submitted calculations show that the NOx emissions were 42.96 TPY as of July 2015.

SC II.1 limits natural gas usage to 908MMCF based on 12-month rolling time period as determined at the end of each calendar month. The submitted calculations show that the ammonia usage was less than 192.21 MMCF as of July 2015.

He told me that they complete the required calculations timely. The facility has installed gas meters to monitor the natural gas usage.

Regarding the emergency generator and the water pumps, Mr. Miller later responded that "The Subpart IIII applies but Subpart JJJJ does not:

- a. Fire Pump Engines:
 - i. Manufactured date 4/2008
 - ii. Horse Power = 290
 - iii. Both engines are EPA Certified: JDX-NRCI-09-14
 - iv. Monitor the engine run hours monthly
 - v. Maintain them per manufacturers requirements
 - vi. Maintenance is performed by Wolverine Fire Protection Company and we have the maintenance records
- b. Emergency Generator:
 - i. The generator engine was manufactured in 2008. According to §60.4230(4) 40 CFR 60, Subpart JJJJ applies to engines manufactured after 1/1/2009
 - ii. Horse Power = 225
 - iii. Monitor the engine run hours monthly
 - iv. Maintain them per manufacturers requirements
 - v. Maintenance is performed by PM Technologies and we have the maintenance records
 - vi. The average run time for the Emergency Generator is 2.5 hours per month

Conclusion: The facility appears to be in compliance with the PTI NO.: 147-07A and other applicable air quality requirements.

NAME Sebastian Kallunkal

DATE 8/20/15

SUPERVISOR CJE

