

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

P041250305

FACILITY: Power Solutions International		SRN / ID: P0412
LOCATION: 32505 Industrial Drive, MADISON HTS		DISTRICT: Southeast Michigan
CITY: MADISON HTS		COUNTY: OAKLAND
CONTACT: Don Kniesteadt , Senior Test Engineer		ACTIVITY DATE: 08/28/2019
STAFF: Kaitlyn Leffert	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2019 Scheduled Inspection		
RESOLVED COMPLAINTS:		

On August 28th, 2019, I conducted a scheduled inspection at Power Solution International, located at 32505 Industrial Drive, Madison Heights. Power Solutions International is permitted to operate three engine dynamometer test cells. The purpose of this inspection was to determine the facility's compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the administrative rules; and Permit to Install (PTI) Number 76-13A.

I first visited the facility on Friday, August 23rd, but the building was locked. I departed the location and decided to come back when staff were available on site. On August 28th, I called Sam Rains, Facility Manager, Power Solutions International, to confirm that they were operating prior to going out for my inspection. I arrived at the facility and met Sam Rains and explained the purpose of my inspection.

Sam initially walked me through the facility, where we then met up with Don Kniesteadt, Senior Test Engineer, Power Solutions International. Don then led me through the remainder of the inspection and provided the records overview.

Inspection

Power Solutions International, previously Powertrain Integration, is an engine manufacturer that designs, manufactures, and tests emissions-certified alternative-fuel power systems. This location does not manufacture any equipment but is instead used for testing and servicing engines and prototype parts. The facility is permitted to operate three engine dynamometers test cells, which are used for development testing of internal combustion engines. The facility is an opt-out source for carbon monoxide (CO) emissions.

During my inspection, one testing cell was operating, while another was in the process of being set-up for a test and the third was in between runs. The test cells are equipped with a catalytic converter that controls emissions from all engine testing done at the site. The facility does not do any uncontrolled testing.

The facility is permitted to burn gasoline, natural gas, and LPG in the test cells. During my inspection, I observed a natural gas pipe on the exterior of the building that had been recently installed but was not yet hooked up to the testing cells. I was informed that the facility has not yet begun testing with natural gas and that Test Cell #1 would test using natural gas once the connection is complete.

In addition to emissions from the dynamometer test cells, the facility also services and modifies engines and prototype engine parts. The tools used onsite include welding equipment and metalworking equipment such as a mill machine, bandsaw, and hand brake press. The metalworking and welding machinery all vent to the in-plant environment and were previously determined to be exempt per Rule 285. The facility has three storage tanks located on the exterior of the building used for storing LPG and gasoline. According to Mr. Kniesteadt, the tanks each store approximately 1,000 – 2,000 gallons of fuel. The tanks are considered exempt under Rule 284(2)(g) (iii).

Previously, during the permitting process, it was identified that there were not any dynamometers that were currently exempt, but that the facility may in the future decide to claim a Rule 285(2)(g) exemption on future testing cells. I inquired about whether any exempt dynamometers were operated on site or whether any were planned. I was informed that the only dynamometers are the three that are permitted and that there are not any known plans to install additional engine testing equipment.

When departing the facility, I observed the stack to confirm whether it complied with the dimension restrictions in the permit. Per S.C. VIII, the stack is to have a maximum diameter of 14 inches and a minimum height of 45 feet. The stack appeared to meet these specifications.

Recordkeeping

Mr. Kniestadt provided an overview of a spreadsheet where he tracks fuel usage and emission calculations. During the inspection, we went over the required recordkeeping to ensure everything was properly being tracked. A printout of the summary page of the spreadsheet is attached.

Emissions Limits

Power Solutions has an emission limit for Carbon Monoxide of 84.8tpy from the three permitted test cells, as well as a facility-wide CO limit of 89 tpy. The additional allowed tonnage in the facility-wide limit includes the natural gas used for heating the facility. Compliance with these emissions limits is met through recordkeeping of fuel usage and calculation of CO emission rates on a monthly and annual basis. The source has emitted 1.98 tons of CO thus far in 2019. In 2018, annual emissions of CO were 10 tons. The emissions calculations indicate that Power Solutions is well under the allowed permitted emission limits for carbon monoxide.

Fuel Usage

I reviewed the fuel usage records for LPG, gasoline, and natural gas. As was noted during the inspection, the facility is in the process of setting up a natural gas hookup for testing but does not yet have this capability. Therefore, there was no natural gas used in the test cells. There were records available for monthly natural gas used for facility heating.

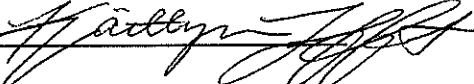
FG-FACILITY S.C. II.2 limits total fuel usage in the dynamometers to 105,000 gallons gasoline equivalent (GGE). The rolling 12-month total fuel usage, including fuel used thus far in August 2019 was 96,772 gallons, which represents a usage of 92% of the total allowed by their permit. Within the total 105,000 gallon limit, the facility is permitted to use a maximum of 17,000 gallons of uncontrolled unleaded gasoline and 5,000 GGE of LPG (uncontrolled). The facility does not do any uncontrolled emissions testing, which was confirmed by the fuel usage records. The facility appears to be in compliance with the facility-wide fuel usage limits.

Emission Factor

FG-FACILITY S.C. II.1 limits the CO emission factor of any fuel burned on site to 3.94 lb/gallon or lower. I reviewed the records of emission factors used by the facility in their calculations and found that they are using 3.94 lb/gallon as the emission factor in their calculations.

Conclusion

Based on my inspection and review of the required records, the facility appears to be in compliance with PTI No. 76-13A and all applicable air quality rules and regulations.

NAME  DATE 9/27/19 SUPERVISOR SK