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

A515951184

FACILITY: INDUCTOHEAT INC.		SRN / ID: A5159
LOCATION: 32251 NORTH AVIS DR, MADISON HTS		DISTRICT: Southeast Michigan
CITY: MADISON HTS		COUNTY: OAKLAND
CONTACT: Mark Martin , Plant Manager		ACTIVITY DATE: 10/02/2019
STAFF: Joe Forth	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: On-site Inspection		
RESOLVED COMPLAINTS:		

On October 2, 2019, I, Joe Forth, from the Department of Environment, Great Lakes and Energy (DEQ), Air Quality Division (AQD), conducted a scheduled inspection of Inductoheat, State Registration Number (SRN): A5159, located at 32251 N. Avis Dr, Madison Heights, Michigan. The purpose of this inspection was to determine the facility's compliance with Permit to Install (PTI) No. 05-06, the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, and Michigan's Air Pollution Control Rules.

Facility Description

Inductoheat is a company that designs and builds induction heating equipment. An induction heater generally consists of an electromagnet, and an electronic oscillator that passes a high-frequency alternating current (AC) through the electromagnet. The quickly alternating magnetic field penetrates the object, generating electric currents inside the conductor called eddy currents. The eddy currents flowing through the resistance of the material heat it by Joule heating. They receive specifications and build customized equipment to fit the parameters. The permitted equipment at the facility is a burn-off oven. The oven is used for curing the coating on new induction coils as well as burning off the same coating for older coils that need repair. The facility also has a parts washer that utilizes a solvent free cleaning material. Run off from the washer and picked up from the facility and treated by Crystal Clean. The facility has no boilers or back up generators.

Facility Inspection

I arrived at the facility at 11 am. I was met by Mark Martin, Plant Manager. I explained to him the purpose for inspection and presented my credentials. I reviewed the conditions of the permit, and detailed what documents I would need to collect. Then we moved on to the facility walk through. Mr. Martin showed me the burn-off oven. The facility uses the oven for two purposes, curing and destruction of the protective material on the induction coils. The coating used on the coils is a reddish powdery coating that is applied to the coils and cured. When the facility has coils in need of repairs, they place the coils in the oven at a higher temperature to remove the coating. Safety Data Sheet (SDS) for the coating was provided (See Attachment A). Mr. Martin said the primary chamber will operate at a variety of different temperatures, but the secondary chamber/afterburner operates at greater than 1400 degrees Fahrenheit. The facility had resolved the violation from the previous year's inspection by removing the rain cap from the stack of the burn-off oven. Finally, Mr. Martin showed me to their parts washer. The device is more similar to a sink than a bath and it has a drain in the middle. No halogenated solvents are used in the parts washer. The cleaning material they use in the washer is Mirachem 500 Cleaner/Degreaser (See Attachment B). The air/vapor interface of the washer is less than 10 ft^2 therefore it is exempt from permitting per R 336.1281(2)(h).

I left the facility at 11:45 am.

Compliance

PTI No. 05-06

Special Conditions

1.1) There shall be no visible emissions from the burn-off oven exhaust. The oven was not operating at the time of inspection to verify visible emissions.

1.2) The permittee shall burn only natural gas in the burn-off oven. Mr. Martin confirmed that the only fuel used for the burn-off oven is natural gas.

1.3) The permittee shall not process any material in the burn-off oven other than cured paints, oil or

grease on metal parts, racks and/or hangers. The material that the facility burns-off in the oven is the powdery coating. (See Attachment A)

1.4) The permittee shall not use the burn-off oven for the thermal destruction or removal of rubber, plastics, uncured paints, or any other materials containing sulfur or halogens (chlorine, fluorine, bromine, etc.) such as plastisol, polyvinyl chloride (PVC), or Teflon. The only material that is destroyed in the oven is the powder-based coating mentioned in SC 1.3. (See Attachment A)

1.5) The permittee shall not load any transformer cores, which may be contaminated with PCB-containing dielectric fluid, wire or parts coated with lead or rubber, or any waste materials such as paint sludge or waste powder coatings into the burn-off oven. The facility does not load the waste coating into the oven. The coating on the coils is heated to a point it starts to degrade then the coils are removed from the oven and the coating is stripped manually from the coils.

1.6) The permittee shall not operate the burn-off oven unless a secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the secondary chamber or afterburner includes maintaining a minimum temperature of 1400°F and a minimum retention time of 0.5 seconds. The oven is equipped with an afterburner. According to temperature records, the afterburner is operated at temperatures greater than 1400°F. Temperature data is recorded continuously at the facility, thus there is a lot of data just for one day. The facility sent a file detailing a whole day, but only one section of the data is included with this report. (See Attachment C)

1.7) The permittee shall not operate the burn-off oven unless an automatic temperature control system for the primary chamber and secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner. The oven is equipped with a digital automatic temperature control and monitor.

1.8) The permittee shall not operate EU-BURNOFF unless an interlock system that shuts down the primary chamber burner when the secondary chamber or afterburner is not operating properly, is installed, maintained and operated in a satisfactory manner. The oven is equipped with two properly maintained interlock systems. The first is a door interlock that will not let the oven turn on unless the door is closed, and the second prevents the main burner from turning on unless the secondary chamber is up to operating temperature (1400°F).

1.9) The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to continuously monitor the temperature in the burn-off oven secondary chamber or afterburner and record the temperature at least once every 15 minutes. The oven is equipped with a digital automatic temperature control and monitor.

1.10) The permittee shall calibrate the thermocouples associated with the primary and secondary chambers at least once per year. Another Inductoheat employee confirmed that the facility routinely calibrates the thermocouples yearly. A calibration report for the thermocouples was provided. (See Attachment C)

1.11) The permittee shall keep temperature data records for the burn-off oven secondary chamber or afterburner. The facility records and stores all afterburner temperature data digitally ready upon department request. A day's worth of temperature data was provided. (See Attachment D)

1.12) The permittee shall keep records of the date, duration, and description of any malfunction of the control equipment, any maintenance performed and any testing results for burn-off oven. The facility claimed that aside from the thermocouple calibration the oven has not required any maintenance. A calibration report for the thermocouples was provided. (See Attachment C)

1.13) The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material (cured coating, oil or grease) processed in burn-off oven, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both. The facility provided the SDS for the material that is processed in their oven. (See Attachment A)

1.14) The permittee shall maintain current information from the manufacturer that EU-BURNOFF is equipped with a secondary chamber or afterburner, an automatic temperature control system for the primary chamber and secondary chamber or afterburner, and an interlock system that shuts down the primary chamber burner when the secondary chamber or afterburner is not operating properly. The facility has the equipment manual which shows that the oven is equipped with an afterburner, temperature control system and an interlock system. I reviewed the manual on-site but did not request copies.

1.15) The exhaust gases from the burn-off oven shall be discharged unobstructed vertically upwards to the ambient air from a stack with an exit point not less than one- and one-half times the building height. The facility has removed the rain cap since the last inspection, the emissions from the process now discharge unobstructed.

1.16) The permittee shall not replace or modify any portion of the burn-off oven, including control

equipment, unless all of the following conditions are met: (R 336.1201)

a) The permittee shall update the general permit by submitting a new Process Information Form (EQP5784) to the Permit Section and District Supervisor, identifying the existing and new equipment a minimum of 10 days before the replacement or modification.

b) The permittee shall continue to meet all general permit to install applicability criteria after the replacement or modification is complete.

c) The permittee shall keep records of the date and description of the replacement or modification. All records shall be kept on file for a period of at least five years and made available to the Department upon request.

Mr. Martin claimed that there have been no replacements or modifications of the permitted equipment.

Conclusion

The facility appears to be operating in compliance with PTI No. 05-06, the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, and Michigan's Air Pollution Control Rules.

NAME Mgl M Ptn DATE 11-1-19 SUPERVISOR SK