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

F743442200

FACILITY: JONES ELECTRIC CO.		**SRN / ID:** F7434
LOCATION: 1965 SANFORD ST., MUSKEGON		**DISTRICT:** Grand Rapids
CITY: MUSKEGON		**COUNTY:** MUSKEGON
CONTACT: Rod Dobb , Owner		**ACTIVITY DATE:** 10/17/2017
STAFF: Chris Robinson	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: FY'18 on-site inspection to determine the facility's compliance status with General PTI No. 197-05 and any other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

Jones Electric (SRN F7434) is located at 1965 Sanford Street, in Muskegon, Michigan. AQD staff Chris Robinson (CR) arrived at this location at approximately 9:00 am on Wednesday October 17, 2017 to conduct a scheduled unannounced site inspection to determine compliance with the facility's Permit to Install (PTI) No. 197 -05 and any other applicable air quality rules and regulations.

Weather conditions were approximately 66°F sunny with SSW winds. CR met with Mr. Mike Passage, Manager, announcing intent to inspect and providing proper identification. Mr. Passage generously provided a tour of the facility as well as pertinent information. CR also met with Mr. Rod Dobb, owner, on November 2, 2017 to follow-up on necessary record keeping and monitoring. No visible emissions or odors were observed during either site visit; however, the burn-off oven did not operate.

FACILITY DESCRIPTION

This facility reconditions and repairs electrical motors. Per Mr. Dobb, there has not been any changes since the last inspection conducted on February 22, 2006. The facility employs approximately 9 staff and operates one shift.

COMPLIANCE EVALUATION

The facility operates under a General PTI for "Batch Type Natural Gas-Fired Burn-off Ovens".

Electrical motors contain "windings" consisting of coiled electrical wire, which are typically coated with a resin based insulator (varnish). As part of the motor reconditioning process, the facility must remove the old varnish and unwind/replace the wire windings. To remove the old varnish, the motors are disassembled, and then heated to approximately 600°F in the burn-off oven. EU-BURNOFF Special Condition (SC) VI.5 requires the facility to maintain a listing from the manufacturer of the chemical composition of each cured material, oil and grease processed in the burn-off oven. The burn-off oven is primarily used to remove varnish which is later reapplied. Therefore the varnish (Sterling Y-210 Black Therm) MSDS provided in **Attachment A** also serves as the manufacturers list of processed material. Per discussions with Mr. Passage, the burn-off oven is set up to fire natural gas only and is not used to burn any materials other than what is specified in EU-BURNOFF SC II.2 which consists of cured paints, oil and grease on metal parts.

Once the motors are re-wound, they are dipped in one of two varnish tanks and placed into a curing oven, which operates at approximately 160°F. Per discussions with Mr. Passage, the facility uses approximately one 55-gallon drum of varnish per year. Mr. Dobb provided the most recent invoice, which is included in **Attachment A**. The attached varnish MSDS is dated 2007 so CR informed Mr. Dobb that a current SDS should be obtained and kept on file. The varnish tanks appear to be exempt per Rule 287(2)(c) and the curing ovens appear to be exempt per Rule 282(2)(b)(i).

Process/Operational Restrictions

The burn-off oven is equipped with an automatic temperature controller and interlock system as well as an afterburner which typically operates at a temperature of 1,400°F while in use. Per EU-BURNOFF SC IV.1 the facility also performs maintenance as needed to keep the oven in good operating condition. A maintenance list is kept on-site.

Temperature displays for both oven chambers are located on the outside of the unit and are used by staff to aid in maintaining the 1,400°F afterburner temperature requirement. The unit is equipped with a data logger which continuously records temperatures for the both the main chamber and afterburner.

Temperature and maintenance records were reviewed on-site with Mr. Dobb. Records from approximately September 4, 2016 through November 2, 2017 were missing, possibly due to a faulty recorder. Available temperature data indicated that the oven was operated with an average temperature of approximately 1,200°F from approximately November 2014 through January 12, 2015 and at a temperature of less than 700°F from January 12, 2016 through September 4, 2016. Per Mr. Dobb, the low (<700°F) temperatures were due to a malfunctioning thermocouple. A violation notice will be sent for the missing temperature records (PTI EU-BURNOFF SC IV.4 & VI.1) and for operating the afterburner below 1,400°F (PTI EU-BURNOFF SC IV.1).

Special Condition No. VI.2 requires the permitee to calibrate both thermocouples annually. Based on discussions with Mr. Dob, except for the most recent November 2017 calibration (**Attachment C**), the thermocouples were last calibrated in 2015. A violation notice will be sent for failure to conduct required calibrations.

Immediately following the November 2, 2017 visit, Mr. Dobb replaced the faulty recorder and thermocouple. Data from 11/2/2017 was provided to the AQD (**Attachment B**) which indicates that data is now being recorded and the oven appears to be operating properly with a minimum temperature of 1,400°F. Temperature was confirmed with a Fluke meter.

The following records as required in EU-BURNOFF SC VI.1-4 were provided.
1) Temperature Records (**Attachment B**)
2) Maintenance records (Reviewed on-site)
3) Current listing from the manufacturer of the chemical composition of each material processed in the burn-off oven (**Attachment A**, Varnish MSDS)

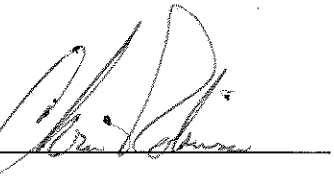
The exhaust stack is equipped with a rain cap. Rain caps are not allowed per EU-BURNOFF SC VIII.1, which states that "*the exhaust gases from EU-BURNOFF shall be discharge unobstructed vertically upwards to the ambient air*". Rain caps promote horizontal discharge, not vertical, and prevent proper exhaust dispersion. Rain caps may be subject to dispersion modeling which is NOT taken into consideration in the general PTI. Therefore, the facility will need to either apply for a new PTI or remove the existing rain cap. A violation notice will be sent.

The facility conducts metal machining operations such as drilling and turning. These processes appear to be exempt per Rule 285(2)(l)(vi). A small non-heated non-agitated parts washer is utilized on site and contains mineral spirits. Instructions were posted and the lid is kept closed when not in use. This washer appears to be exempt per Rule 281(2)(h).

COMPLIANCE DETERMINATION

As discussed above, the facility operated the afterburner below 1,400°F, necessary maintenance was not conducted in a timely manner, data was not recorded every 15 minutes and thermocouples were not calibrated annually. These are violations of PTI EU-BURNOFF SC IV.1, IV.4, VI.1, VI.2 and Rule 910. Rule 910 requires an air cleaning device to be installed, maintained, and operated in a satisfactory manner. The afterburner is considered an air cleaning device. In addition, PTI EU-BURNOFF SC VIII.1 requires exhaust gases to be discharged unobstructed vertically upwards to ambient air. Rain caps are considered an obstruction. A violation notice will be issued.

Attachments
A) Varnish MSDS and Invoice
B) Temperature Records
C) Calibration Correspondence

NAME  DATE 11/14/2017 SUPERVISOR