N7641
MANILA

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

N764140736

FACILITY: MONARCH ELECTRIC APPARATUS		SRN / ID: N7641
LOCATION: 18800 MEGINNITY AVE, MELVINDALE		DISTRICT: Detroit
CITY: MELVINDALE		COUNTY: WAYNE
CONTACT: Todd Steinberg , Plant Manager		ACTIVITY DATE: 07/17/2017
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: Minor
SUBJECT: Burn-off oven		
RESOLVED COMPLAINTS:		

markings

SCHEDULED INSPECTION: Integrated Power Systems (aka Monarch Electric Aparatus)

Address: 18800 Meginnity Drive, Melvindale, MI 48122

SRN: N7641

Present: Eric Beleski (Manager)

Inspector: Terseer Hemben (AQD)

Phone: 313-388-7800; Fx: 313-388-3235; Cell 734-673-2303

Background:

Integrated Power Systems (IPS) acquired Monarch Electric Apparatus is located in the City of Melvindale, Michigan at 18800 Meginnity. IPS relocated the burn off equipment used for removing windings from coatings and plastic sheath from the 31301 Mally Drive, Madison heights, Michigan under the SRN: N7023 to the 18800 Meginnity Drive, Melvindale under the SRN: 7641. The permit for new location was modified under (PTI) Permit# 103-98B.The new permit covers two 2-Chamber Burn-Off Ovens. The Burn-Off oven/stack system is described as EU-BURNOFFBAYL/SV-BURNOFFSTL. The PTI# 103-98B covers two main emission units: the EU-BURNOFFBAYS and EU-BURNOFFSTL.

The EU-BURNOFFBAYS is a Bayco Model BB56 burn-off oven consisting of a 350,000 Btu per hour gas fired pyrolysis furnace and a 350,000 Btu per hour direct flame afterburner used to remove epoxy and varnish coatings from electric motor windings. The oven is associated with the exhaust stack: SV-BURNOFFBAYS. The oven is vented through an exhaust stack that discharges unobstructed vertically upward to the outdoor air at a minimum height of 36 feet.

The EU-BURNOFFSTL is a Steelman burn-off oven equipped with natural gas fired 860,000 Btu per hour primary oven burner and 1,100,000 Btu per hour afterburner; and primary and secondary water spray temperature control system in oven used to remove epoxy and varnish coatings from electric motor windings. Exhaust stack associated with the emission unit is SV-BURNOFFSTL. The oven gases are vented through an exhaust stack that discharges unobstructed vertically upward to the outdoor air at a minimum height of 36 feet. The IPS uses only natural gas for heating the ovens. Records of fuel usage are attached (Pgs. 49-61).

Inspection Narrative:

I arrived at the facility address on July 18, 2017 at 1300 hours. Purpose of the visit was to conduct a scheduled compliance inspection of the operation of the FG-2CHAMBER oven. Temperature at the hour was 82 F with wind speed 7 mph coming from the SE, and humidity was 54%. I met with Mr. Eric Beleski, the process manager, who welcomed my visit. We settled down to a pre-inspection interview. Mr. Beleski informed Integrated Power Systems had merged the Monarch Electric Apparatus into one operation and is operating under the SRN: N7641. We inspected the equipment. At the time of inspection all processes were shut down for a turnaround maintenance that involved calibrations. We went outside and inspected the stacks structural compliance, and concluded my visit with a post inspection conference. Mr. Beleski informed that Mr. Todd Steinberg who was out of the office at time of the inspection shall forward all copies of requested records to the Detroit AQD office. The records were sent timely to AQD office via email attachments. I left the area at 1420 hours.

Process Description:

The FG-2CHAMBER equipment was installed under PTI 103-98B and calibrated, maintained and operated in a satisfactory manner. The equipment has a device to continuously monitor the temperature in each FG-2CHAMBER oven secondary chamber (afterburner) and record the temperature at least once every 15 minutes consistent with Rule 224, Rule 225, Rule 301, Rule 702(a), Rule 901, and Rule 910. All gaseous effluent is discharged through the stacks.

Equipment Controls:

The process is controlled by inbuilt devices that monitor and shut down equipment automatically when the set parameters such as temperature and residence time are programmed. The equipment shuts down until technicians manually reset after calibration. The equipment is monitored using charts and maintained regularly. Records of these activities are attached.

Compliance History:

There has not been any complaint attributed to Integrated Power Systems -Monarch since operations commenced.

Permit (PTI) # 103-98B Conditions:

1. Rule 201(1): There has been no modification to the equipment since permitted and installed.

2. Condition SC. 1.1: There was no visible emissions from either FG-2CHAMBER oven at the time of inspection. [R336.1225, R336.1901, R336.1910] (SC. 1.1). IPS confirmed there had been no visible emissions during past operations [Attachment Pg. 2, item# 2]

3. Condition SC. 1.2: The permittee burned only natural gas in either FG-2CHAMBER oven. [R336.1901] (SC. 1.2). Records of fuel usage covering the last 12 months are attached [Pg. 41-61].

4. Condition SC. 1.3: Permittee stated the facility did not process any material in either FG-2CHAMBER oven other than coatings on electric motor parts and windings. [R336.1224, R336.1225, R336.1901] (SC. 1.3). Attachment Pg. 2, item# 4 confirmed that only coatings of electric motor windings were the items that were burned at the facility.

5. Condition SC.1.4: Permittee stated the facility did not use either FG-2CHAMBER 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. [R336.1224, R336.1225, R336.1901] Attachment Pg. 2, item# 5 stated any items such as rubber or plastics, PVC, or Teflon were removed during the disassembly process of the electric motor.

6. Condition SC. 1.5: Permittee did not load any transformer cores, which might 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 either FG-2CHAMBER oven. [R336.1224, R336.1225, R336.1901]. Attachment Pg. 2, item# 6 stated the facility does not repair transformers at this location.

7. Condition SC. 1.6: Permittee did not operate either FG-2CHAMBER oven for more than 12 hours per day, nor 2500 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. [R 336.1224, R 336.1225, R 336.1901]. IPS submitted operation time charts that indicate permittee did not operate either FG-2-CHAMBER for more than 12 hours per day [Attachment Pg. 10-40]. Addition of hours from time - stamp on the recorded chart from May 20, 2016 through January 8, 2017 showed the FG-2CHAMBER oven was operated for 322 hours and averaged out to 673 hours per year for the rolling time period. [Attachment Pg. 10 – 40] the last 16 months. The time chart recordings covered chamber preheating and cooling hours in addition to the actual burn off cycle hours.

8. Condition SC. 1.7: Permittee did not operate either FG-2CHAMBER oven unless a secondary chamber or afterburner was 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/residence time of 0.5 seconds. [R336.1224, R336.1225, R336.1301, R336.1702 (a), R336.1901, R336.1910]. The attached chart recorded temperature of the afterburner at an average run of 1500 F with an auto set controller for residence time of 0.5 seconds [Outer chart run profile, pg. 10-40].

9. Condition SC. 1.8: Permittee did not operate either FG-2CHAMBER oven unless an automatic temperature control system for the primary chamber and secondary chamber or afterburner was installed, maintained, and operated in a satisfactory manner. [R336.1224, R336.1225, R336.1301, R336.1702(a), R336.1901, R336.1910]. Chart recorders consisted two markings or line prints: the inner circle print and the outer circle print. The inner marking is the inner circle baseline tracer, whereas the outer print is the amplitude of measurements. Copies of data submitted by the IPS did not show complete outlines of the outer recorded markings at certain diametric points because of copier truncation, however, the inner print indicates the traceable path of desired data acquisition. Additionally, receipts submitted by IPS showed the FG-2CHAMBER was maintained regularly to keep in compliance with automatic controls that ensure fail-safe operation [Pgs. 3-9].

10. Condition SC. 1.9: Permittee did not operate either FG-2CHAMBER oven 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. [R336.1224, R336.1225, R336.1301, R336.1702(a), R336.1901, R336.1910]. Technical information and maintenance records for the operation of secondary or afterburner showed

compliance with this requirement is attached [Pgs. 41-47].

11. Condition SC. 1.10: Permittee did install, calibrate, maintain and operate in a satisfactory manner a device to continuously monitor the temperature in each FG-2CHAMBER oven secondary chamber or afterburner and record the temperature at least once every 15 minutes. [R336.1224, R336.1225, R336.1301, R336.1702(a), R336.1901, R336.1910]. The two cyclo-metric chart recordings submitted by IPS reflects compliance [Attachment Pgs. 10-40].

12. Condition SC. 1.11: Permittee calibrated the thermocouples associated with the primary and secondary chambers for each FG-2CHAMBER oven at least once per year. [R336.1201(3), R336.1224, R336.1225, R336.1301, R336.1702(a), R336.1901, R336.1910] (SC. 1.11). Maintenance records showing calibrations are inclusively related and located in attachment [Attachment Pgs. 3-9; 41-47].

13. Condition SC. 1.12: Permittee kept, in a satisfactory manner, temperature data records for each FG-2CHAMBER oven secondary chamber or afterburner. All records were kept on file for a period of at least five years and made available to the Department upon request. [R336.1224, R336.1225, R336.1301, R336.1702(a), R336.1901, R336.1910]. Records of temperature data are contained in the attached chart [Attachment Pgs. 10-40].

14. Condition SC. 1.13: Permittee kept, in a satisfactory manner, records of the date, duration, and description of any malfunction of the control equipment, any maintenance performed and any testing results for each FG-2CHAMBER oven. All records were kept on file for a period of at least five years and made available to the Department upon request. [R336.1910, R336.1912]. Permittee stated there were no malfunctions since the control equipment. The ovens were calibrated per every run. Data read from the recording charts indicated self calibration zones and times including actual run times. The extractable records are located in the attachment [Attachment Pgs. 41-47].

15. Condition SC. 1.14: Permittee kept a record of the operation of each FG-2CHAMBER oven on a calendar month basis including the following:

a) Date of burn off oven operation – IPS showed compliance as indicated in data submitted in the attachment [Attachment Pg. 48].

b) Duration of burn off oven operation- IPS showed compliance as recorded in charts. Total duration of burn off oven operation recorded is located in the attachment [Attachment Pg. 48].

c) Identification of the type of part processed in the oven and the materials removed from the part - IPS showed compliance by listing identification of type of part burned in the oven as located in a column of the attachment [Pg. 48].

d) A compilation of the calendar day, calendar month, and rolling 12-month calendar year totals of hours of operation for the ovens' burn off hours in calendar day is provided in attachment Pg. 48. The total number of burn off hours in a month is provided, and the rolling 12-month calendar year is provided as 673 hours (June 2016 through June 2017).

The permittee kept the FG-2CHAMBER oven records on file at the facility, in a format acceptable to the AQD District Supervisor, for a period of at least five years and made them available to the Department upon request. [R336.1224, R336.1225,

R336.1702, R336.1901]. Staff confirmed that records were kept on file at the facility.

16. Condition SC. 1.15a & 1.15b: The Stack & Vent ID SV-BURNOFFBAYS is operated at the Maximum Diameter (Not applicable) and Minimum Height 36 feet;

The SV-BURNOFFSTL is operated at the Maximum Diameter (Not Applicable) and Minimum Height 36 feet above the ground, and lastly, the exhaust gases from these stacks were discharged unobstructed vertically upwards to the ambient air [R 225, R 910, 40 CFR 52.21 (c) & (d). (SC. 1.15a & SC. 1.15b). Staff performed visual inspection of stacks and location. Permittee stated no modification was made on the stacks [Attachment Pg. 2, item# 16]

Regulatory Summary

The following regulatory rules were adequately addressed for compliance;

Rule 301: The rule limits opacity from the process. The rule was addressed through limitation of opacity from the process by non-allowance of visible emissions. There was no visible emission from the IPS facility at the time of inspection.

Rules 331, 901 and 910 – The rules prohibited visible emissions from each of the ovens used by IPS and recommended gaseous discharge to the ambient through stacks height not less than 36 feet high for the ovens. A calculated height of 36 feet was stipulated for the stacks with exit vents in vertical unobstructed positions. The specifications assured compliance with air screening levels applicable per Rule 225. IPS was in compliance with the set requirements.

NESHAP-HAP: this rule determines that maximum HAP emissions from the ovens are expected to be below major source threshold for individual HAPs (10 tons per year) and all HAPs combined (25 tons per year) based on the manufacturer's emission estimates. The supplier for each oven estimated that PM and hydrocarbon emissions from each oven would be below 1 ton per year based on previous emission testing. Comparison of burn off oven emissions determined the minor HAPs sources are considered true minor HAPs sources and are not subject to the requirements of section 112(g) of the Clean Air Act Amendments. The PTE data registered by IPS during PTI application for the FG-`2CHAMBER ovens are in AQD permit files.

Compliance Determination:

The AQD staff inspected the IPS-Monarch facility as part of the scheduled compliance inspection. The inspection observed the facility was operated according to permitted conditions. Records were kept and maintained as specified in the permit. The facility was determined to have been operated in compliance with the associated air pollution regulatory permit rules.

NAME _____ DATE 9/20/2017 SUPERVISOR _____