

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

N830039352

FACILITY: K & S SERVICES		SRN / ID: N8300
LOCATION: 20401 GLADWIN AVE, TAYLOR		DISTRICT: Detroit
CITY: TAYLOR		COUNTY: WAYNE
CONTACT: Jeff Truitt, VP Operations		ACTIVITY DATE: 04/12/2017
STAFF: Katherine Koster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY2017 Targeted Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection
INSPECTED BY: Katie Koster, AQD
PERSONNEL PRESENT: Grayson Layne, Plant Manager/VP Operations
FACILITY PHONE NUMBER: 734-374-0400
FACILITY FAX NUMBER: 734-857-2058

FACILITY BACKGROUND

K+S Services performs mechanical and electronics equipment repair and has a facility in Taylor and one in Southgate which is also the corporate office. K+S Services also owns Beech Services, LLC which rebuilds electric motors. Beech Services used to be located in Dearborn Heights but moved to the K+S Taylor location in December 2008. The general repair process involves disassembly, sand blasting, degreasing, re-assembly, testing, varnish dipping, and painting of electric motors. The current location runs one shift, Monday through Friday, from 7 a.m. to 5:00 p.m. Customers include the automotive, aerospace, and food and beverage industry.

COMPLIANCE HISTORY

A violation notice was issued after the prior AQD inspection in 2015 based mainly on non compliance with recordkeeping conditions in the PTI for the burn off oven. The burn off oven was subsequently replaced with a new oven. A general PTI was obtained (PTI No. 12-16).

INSPECTION NARRATIVE

AQD inspector, Katie Koster, arrived at K+S Services on April 12, 2017. I met with Mr. Grayson Layne, vice president of operations for K+S Services. I stated the purpose of my inspection and presented identification. Mr. Layne recognized me as I previously inspected the facility in 2015. He escorted me about the facility.

The facility is involved in two separate repair functions. K+S repairs mechanical equipment such as pumps and cylinders and Beech Services repairs electric motors. The companies have separate operations except that they share a paint booth. According to Mr. Layne, all operations will be moving to a new facility in Taylor in the next several months (the old Colonial Tool building on Northline). I informed Mr. Layne that K&S needs to submit a permit application to AQD to relocate the burn off oven.

Electric motor repair involves the use of a burn off oven, varnish dip, and bake oven. The mechanical repair side does not use any of this equipment except for some occasions when parts are placed in the bake oven to dry residual water.

We viewed the varnish dip tank which was not in use. At the time of the inspection, the cover was closed and appeared to be in acceptable condition. I did not observe any cracks or holes. Mr. Layne stated that the tank was filled with one 55 gallon drum of varnish per year. After the parts are varnish dipped, they are placed in an electric bake oven to cure the varnish. There are two bake ovens which operate between 225-250 degrees Fahrenheit. If the oven temperature exceeds 250, it automatically shuts off. One of the ovens is from Beech Services and the other was already on site at K+S Services.

A burn off oven is also on site. According to facility personnel, it has been in operation about 6 months. The old oven was scrapped. When the wire winding is removed from the motor, the varnish or paint needs to be burned off so that the wire can be recoated. This is a new burn off oven that replaced the

older oven that I inspected previously. The facility obtained a general permit for this oven (PTI 12-16). With the new oven, the company can now load aluminum parts because they can adjust the oven temperature instead of having to send the parts to Industrial Paint Stripping.

I recorded the following information:

The new oven now has an electronic data logger. The logger has to be turned on and off manually. The operator explained that he checks the water and the oven temperatures and then turns on the data logger before loading any parts into the oven.

The data logger can be removed and plugged into the computer to download temperature files. The company attempted this to show me while I was on site. However, only one date came up from the logger. Additionally, there was a message that the logger was full. A recording was occurring every minute which seems to be the reason that it was full. I told the company to investigate and contact the oven servicer, and I would revisit the facility in the next several months.

One enclosed sand blasting unit and associated indoor fabric filter is present. Sand blasting is sometimes used to clean the parts, and the sand is continuously recycled throughout the process. This equipment is vented to the in-plant environment.

There is also an area where minor welding is performed and wire is stripped after the oven and this area was equipped with an interior hood and dust collector venting inside.

Various electrical and hydraulic test equipment is located throughout the facility.

There are parts washers throughout the facility that all appeared to be in use.

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UPDATE: I received a call from Mr. Grayson Layne inviting me to be present for a meeting with the oven servicer on April 21. I arrived at the facility around 9:30 a.m. and met with Mr. Steve Sunnen, GUSPRO Sales Rep, as well as Grayson Layne, Plant Manager, and Jim Polak, Maintenance Supervisor. This is a summary of what was explained to me:

- The oxidizer fires first and then the primary chamber fires
- When the oxidizer reaches about 1300-1350F, the primary chamber is at about 100F. Fumes that would be generated and need thermal destruction generally do not start forming until 600-800F in the primary chamber.
- If the afterburner drops to 1200F, the primary chamber is turned off until the afterburner reaches 1400F
- There are two thermocouples in the primary chamber, one for the chamber temp and one placed inside of the motor (core temperature) to prevent damage as it heats up faster than the overall chamber
- Oven is rated to burn off 20 lb/hr maximum
- 3 minute and 15 second purge to remove residual combustibles if there is an oven shut down. High temperature in stack of 1850 triggers a shut down.
- High temp over 900 in the main chamber shut down the process
- If clear coat is being burned off, it reduces the capacity of the oven by ½ because it is so combustible
- During the cooling down of the oven, the afterburner may drop below 1400 even though the primary chamber is still in the 600-800F range; however, all of the combustibles should have been removed by this point.

We discussed the requirement to calibrate the thermocouples yearly. According to Mr. Sunnen, he is not familiar with a way to calibrate a thermocouple. It either works or it does not. If it is not working, a fault message will appear on the temperature readout panel and the company will know it needs to be changed

Mr. Sunnen took the data logger to the computer and uploaded the data to show the temperature readings. It was now recording at 10 minute intervals. The company will develop a procedure for downloading and saving the data from the logger on a set frequency in order clear the logger periodically so that it does not become full.

Afterburner and primary chamber temperatures appeared to be working properly. Company started up the oven and we viewed the temperature profile for several minutes.

APPLICABLE RULES/PERMIT CONDITIONS

The following are conditions from General Permit 12-16. Equipment was verified to be same as what was listed in the application (a Guspro burn off oven Model No BB484040).

The following conditions apply to: EUBURNOFF

I. Emission Limits

1. **UNABLE TO EVALUTE.** There shall be no visible emissions from EUBURNOFF. Burn off oven was not in use at the time of the inspection.

II. Material Usage Limits

1. **IN COMPLIANCE.** The permittee shall burn only natural gas in EUBURNOFF. Burn off oven is natural gas fired.
2. **IN COMPLIANCE.** The permittee shall not process any material in EUBURNOFF other than cured paints, oil, or grease on metal parts, racks and/or hangers. Burn off oven is for removing mainly cured paint and varnish from electric motor components.

III. Process/Operational Limits

1. **IN COMPLIANCE.** The permittee shall not use EUBURNOFF 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. There was no evidence during the onsite inspection that the burn off oven is used for the prohibited materials listed above.
2. **IN COMPLIANCE.** 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 EUBURNOFF. There was no evidence during the onsite inspection that the burn off oven is used for the prohibited materials listed above.

IV. Design/Equipment Parameters

1,2, 3, and 4 **IN COMPLIANCE.** Required equipment is in place and was demonstrated to me in a follow up visit on April 21.

1. The permittee shall not operate EUBURNOFF 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.
2. The permittee shall not operate EUBURNOFF unless an automatic temperature control system for the primary chamber and secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner.
3. The permittee shall not operate EUBURNOFF 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.
4. 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.

VI. Monitoring/Recordkeeping

1. **IN COMPLIANCE.** The permittee shall continuously monitor the temperature in the burn off oven secondary chamber or afterburner and record the temperature at least once every 15 minutes. The device to monitor temperature was being operated in a satisfactory manner and based on my April

- 21 visit, a temperature recording was now being taken at 10 minute intervals (which meets the minimum of at least once every 15 minutes).
2. **IN COMPLIANCE.** The permittee shall calibrate the thermocouples associated with the primary and secondary chambers at least once per year. According to the facility (see attached email) and the oven servicer during my visit, the thermocouples are either working or they show a fault/error message and they are not aware of any calibration procedures nor have they found a company to perform this work. This needs further investigation. At this time, since the oven has been operating for less than a year, the calibration is not yet due.
 3. **IN COMPLIANCE.** The permittee shall keep, in a satisfactory manner, temperature data records for the burn off oven secondary chamber or afterburner. All records shall be kept on file for a period of at least five years and made available to the Department upon request. Records were being kept in a satisfactory manner starting on April 21.
 4. **IN COMPLIANCE.** The permittee shall keep, 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 EUBURNOFF. All records shall be kept on file for a period of at least five years and made available to the Department upon request. So far, no maintenance has been needed aside from the initial troubleshooting according to the maintenance supervisor. Also, no malfunctions have occurred as the oven is new and has reportedly been operating properly.
 5. **DID NOT EVALUATE.** The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both. All records shall be kept on file for a period of at least five years and made available to the Department upon request.
 6. **IN COMPLIANCE.** Permittee shall maintain current information from the manufacturer that EUBURNOFF 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. All records shall be kept on file and made available to the Department upon request. Facility has this information.

VII. Stack/Vent Restrictions

1. **IN COMPLIANCE/DID NOT EVALUATE.** Exhaust gases shall be discharged unobstructed vertically upwards from a stack with an exit point of not less than one and one half times the building height (paraphrased). Gases are discharged vertically upwards. Did not evaluate stack height at this time.

IX. Other requirements

1. a,b, and c pertain to replacing and modifying any portion of the oven. The AQD must be notified 10 days before the replacement, shall keep records of replacements, and shall meet all general PTI criteria after the replacement (paraphrased). **IN COMPLIANCE.** At this time, AQD is not aware of any activities requiring this notice.

NSPS/MACT REQUIREMENTS

At this time, none of the equipment appears to be subject to a federal NSPS or MACT.

EXEMPT EQUIPMENT

Equipment appears to be exempt except for the burn off oven.
Varnish dip tank and bake ovens exempt per Rule 287(2)(c)
Sand Blasting and wire stripping exempt per Rule 285(2)(l)(vi)(B)
Welding exempt per Rule 285(2)(i)

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

N/A. I did not observe a potential fugitive dust issue and a fugitive dust plan has not been requested.

MAERS REPORT REVIEW

N/A. This facility does not appear to be subject to MAERS reporting. It is a true minor source and is not subject to any federal regulations.

FINAL COMPLIANCE DETERMINATION

At this time, facility appears to be in compliance. Discretion is being used as the temperature recording issue was remedied in a timely manner and the oven is new and appears to have been working properly. A violation notice will be issued if a future inspection reveals the same issues.

NAME Kate K...DATE 6/27/17SUPERVISOR W.M.