

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

N656129783

FACILITY: Non Ferrous Cast Alloys Inc		SRN / ID: N6561
LOCATION: 1146 N Gateway Boulevard, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Joe Chmelar		ACTIVITY DATE: 05/26/2015
STAFF: Eric Grinstern	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: Minor
SUBJECT: Unannounced compliance inspection Copy of Inspection Brochure provided.		
RESOLVED COMPLAINTS:		

Unannounced inspection of Non-Ferrous Cast Alloys. Prior to entering the facility staff did not note any abnormal odors or VE. At the facility staff consisting of Kaitlyn DeVries and Eric Grinstern met with Joe Chmelar.

FACILITY DESCRIPTION

The facility is an aluminum and brass sand casting foundry. The facility has green sand, air set, shell and isocure sand casting systems. The facility operates both electric induction and gas-fired furnaces.

REGULATORY ANALYSIS

The facility is an area source subject to the Aluminum, Copper, and other Nonferrous Foundries NESHAP, Subpart ZZZZZZ. The facility is considered an existing source that is not classified as a large source since they do not melt more than 6,000 tons of copper and other nonferrous metal. All processes at the facility are covered under PTI No. 28-99E, which was approved on January 30, 2015.

COMPLIANCE EVALUATION

Below is a summary of the facility's compliance with PTI No. 28-99E and Subpart ZZZZZZ.

EUINDUCTION-AL

Emission unit covers one 1,200 lb aluminum induction melting furnace with no control.

Material Limits

The only restriction upon the aluminum furnace is that no flux be used in the furnace.

In a subsequent phone conversation with Mr. Chmelar, EG discussed the permit requirement that prohibits flux usage in the furnace.

EUSANDPROCESS - SAND SYSTEM and SHAKEOUT

The green sand reclamation system and green sand shakeout.

Emission Limits

EUSANDPROCESS has limits that restrict the emission of PM. Compliance with the emission limits is demonstrated through control equipment (fabric filter collector) monitoring to demonstrate proper operation. The emission unit also has an opacity limit of 10%, based on a six-minute average. During the inspection staff did not observe visible emissions from the baghouse.

Equipment/Monitoring/Recordkeeping

To comply with the PM emission limits the facility is required to install and operate a fabric filter collector, which they have. To demonstrate that the fabric filter collector is properly operating the facility is required to monitor and record the pressure drop across the collector on a daily basis.

The sand system is controlled by the Dustar baghouse, which showed no visible emissions and appeared to be in good working order. The baghouse is equipped with a pressure drop gauge which had

a reading of 2.0" at the time of inspection. The facility has a PM plan that calls for inspection of the pressure drop gauge on a daily basis and has an established action range. Review of facility records showed pressure drop records were being maintained. Review of the records also showed that no readings outside the established range were recorded.

Stack/Vent Restrictions

Visual observation of the stack (SVSANDPROCESS) showed that it appeared to meet the required dimensions.

EUGRINDERS – GRINDING, SHOT BLASTING, FINISHING

EUGRINDERS as described in the permit consists of twelve grinders, a shot blast and two baghouses for control

Emission Limits

EUGRINDERS contains limits that restrict the emission of PM. Compliance with the emission limits is demonstrated through control equipment ((2) fabric filter collector) monitoring to demonstrate proper operation. The emission unit also has an opacity limit of 10%, based on a six-minute average.

During the inspection staff did not observe visible emissions from the baghouses.

Equipment/Monitoring/Recordkeeping

To comply with the PM emission limits the facility is required to install and operate (2) fabric filter collectors, which they have. To demonstrate that the fabric filter collector is properly operating the facility is required to monitor and record the pressure drop across the collectors on a daily basis.

The finishing operations are controlled by two baghouses, which showed no visible emissions and appeared to be in good working order. The baghouses are equipped with pressure drop gauges which at the time of the inspection had the following readings North: 0.8", South 0.5". The facility has a PM plan that calls for inspection of the pressure drop gauge on a daily basis and has an established action range. Review of facility records showed pressure drop records were being maintained. Review of the records also showed that no readings outside the established range were recorded.

Stack/Vent Restrictions

Visual observation of the stacks (SVGRINDERS1, SVGRINDERS2) showed that they appeared to meet the required dimensions.

EUWOODWORKING – PATTERN MAKING AND REPAIR

The facility has a small working area for pattern making and repair. This is an enclosed area separate from the rest of the facility and is not a high use part of the facility.

Emission Limits

EUWOODWORKING contains limits that restrict the emission of PM. Compliance with the emission limits is demonstrated through control equipment (fabric filter collector) monitoring to demonstrate proper operation. The emission unit also has an opacity limit of 10%, based on a six-minute average. No VE was noted from the wood working area.

Equipment/Monitoring/Recordkeeping

To comply with the PM emission limits the facility is required to install and operate in a satisfactory manner a cyclone and fabric filter collector, which they have.

EUAIRSET – PHENOLIC URETHANE NO-BAKE MOLDS

The air set operation consists of (1) 600 pound per hour mixer for molds and (1) 80-100 pounds per hour mixer for cores. The operation also has two manual mold making stations. Air set molds make up a small portion of the overall operation and utilizes lake sand.

Emission Limits/Material Limits

EUAIRSET contains limits that restrict the emission of VOC to 1.17 lb/ton of prepared sand, which is the established emission factor mold and core making with phenolic urethane no-bake systems.

The permit limits the usage of sand in EUAIRSET to 2,500 tons per 12 month rolling time period. Compliance with the usage limit is based upon the facility maintaining records of sand usage on a monthly average. The facility supplied records showing that that sand usage for isoset and airset combined was 1871 tons for 2014.

EUISOCURE – Isocure core and mold making controlled by an acid scrubber

Emission Limits/Material Limits

EUISOCURE contains limits that restrict the emission of VOC to 1.10lb/ton of prepared sand, compliance is based upon proper operation of the acid scrubber system.

The permit limits the usage of sand in EUISOCURE to 2,500 tons per 12 month rolling time period. Compliance with the usage limit is based upon the facility maintaining records of sand usage on a monthly average. The facility supplied records showing that that sand usage for isoset and airset combined was 1871 tons for 2014.

Equipment/Monitoring/Recordkeeping

Isocure mold and core making must be controlled by an acid scrubber equipped with automatic air flow switch and operated in a satisfactory manner to ensure adequate scrubbing solution flow.

At the time of inspection the isocure process was not in operation.

The facility is required to record the pH of the acid scrubber on a daily basis when the process is operating. Review of facility records showed that pH was being recorded on a daily basis. At the time of the inspection the reading was 2.79, with the process not operating.

Stack/Vent Restrictions

Since the last inspection the stack has been routed to exhaust to the outside atmosphere.

EUSHELLCORE – Five hot box core machines

Emission Limits/Material Limits

EUSHELLCORE contains limits that restrict the emission of PM to 0.10lb/1,000 pounds of gas on a dry basis.

Recordkeeping

The facility is required to maintain monthly records of sand and resin usage rates. Shell sand records were provided. The facility used 469.52 tons in 2014. Usage is not limited by the permit.

FGINDUCTION – Brass Melting

Includes EUINDUCTION1, EUINDUCTION2, and EUINDUCTION3

Each of the furnaces is an Ajax with a melt rate of 1,200 pound/hour. The facility processes both leaded brass and eco brass (lead-free).

Emission Limits/Material Limits

FGINDUCTION contains limits that restrict the emission of PM (0.008/1,000 lb of gas, 2.05 pph and 8.99 tpy) Compliance with the emission limits is demonstrated through proper operation of control equipment and material usage limits.

FGINDUCTION has a VE limit of 5% opacity over a 6-minute average. Observation of the baghouse exhaust showed no visible emissions.

FGINDUCTION restricts charge materials to clean charge and internal runaround. The facility only melts ingots and internal runaround.

Equipment/Monitoring/Recordkeeping

The facility is required to control FGINDUCTION with a fabric filter collector and record and maintain records of the pressure drop on a daily basis. Review of the facility records showed that the pressured drop is being recorded. The facility is required to maintain records of the amount of metal melted on a monthly basis. Records of brass melt on a monthly basis were reviewed onsite.

The facility melted 803 tons of brass in 2013 and 617 tons in 2014.

Three Ajax swing electric induction furnaces with a capacity of 300 pounds each for the melting of brass. Each furnace has two crucible holders. When a crucible of melt is ready to be poured, the swing arm is transferred to the second awaiting crucible to be melted. Only one crucible is capable of receiving electricity at a time. The melt from the first crucible is then transferred to the skim station. Emissions are controlled at melting, skimming, and pouring. The swing arm on the furnaces has collection that vents to a baghouse, as does the skimming station. The swing is a rim vent, not a lid.

FGALUMINUM – Aluminum Melting

Includes:

EUALUMINUM1 – Includes (4) 500 lb./hr. aluminum furnaces, gas fired

EUALUMINUM2 – Includes (4) 500 lb./hr. aluminum furnaces, gas fired

EUALUMINUM6 – Includes (2) 500 lb./hr furnaces, gas fired

EUALUMINUM7 – Includes (2) 500 lb./hr furnaces, gas fired

EUALUMINUM8 – Includes (2) 500 lb./hr furnaces, gas fired

The facility has 14 gas-fired aluminum melting furnaces. All emissions from the natural gas combustion to heat the furnaces are ducted uncontrolled outside. Emissions from the furnaces themselves are not collected and vent to the in-plant air. The facility adds flux to the furnaces via a Wedron injection unit. This unit adds the flux to the internal bath, which should reduce the amount of flux needed and emissions.

Emission Limits/Material Limits

FGALUMINUM contains limits that restrict the emission of PM to 0.10/1,000 lb of gas. Compliance with the emission limits is demonstrated through material usage limits.

FGALUMINUM restricts charge materials to flux, clean charge and internal runaround.

The permit also limits FGALUMINUM to a process limit of 10 tons per day and a flux limit of 25 pounds per day and requires the facility to maintain monthly records of melt and flux usage. Review of the facility records showed compliance with the 10 ton per day aluminum throughput limit. The facility provided the flux records subsequent to the inspection and contacted staff via phone stating that they determined that flux usage exceeded the 25 pound per day limit in 2014. Based upon the facility calculations, flux usage was 41 pounds per day.

FGFACILITY – Subpart ZZZZZZ

FGFACILITY contains applicable requirements for Subpart 6Z. The facility is subject to Subpart 6Z because the combined total of aluminum and brass melted exceeds the 600 ton threshold and the brass contains lead (a Subpart 6Z metal HAP). The facility submitted an initial notification on October 23, 2009 and a Notification of Compliance Status Report on June 24, 2011.

Subpart ZZZZZZ Existing Small Source Checklist

Compliance Date: June 27, 2011

All sources subject to the standard are required to comply with the following management practices.

 X Cover or enclose each melting furnace that is equipped with a cover or enclosure during the melting operations to the extent practicable.

 X Purchase only metal scrap that has been depleted to the extent practicable of the specified foundry HAPs.

 X Prepare and operate according to a written management practices plan to minimize emissions from melting furnaces.

 X Must include management practices for Number 1. and Number 2. above.

The management practices were review during the inspection. Staff requested that the facility modify some language to clarify that the covers will remain closed when the furnace is operating, except for when the covers need to be open (charging , fluxing, tapping, etc.)

Records

Keep records of notification submittals

 X Initial Notification: 120 days after June 25, 2009 (October 23, 2009) or 120 days after becoming subject to standard.

Submitted on October 23, 2009.

(Can be submitted combined)

 X Notification of Compliance Status 120 days after applicable compliance Date (existing June 27, 2011 + 120 days = October 25, 2011).

Submitted on June 24, 2011.

Records documenting conformance with management practices:

 X Records identifying each furnace equipped with a cover.

The permit to install applications identify furnaces equipped with covers.

 X Document that management practices were followed during monthly

inspections.

 X Records that the facility purchased only metal scrap that has been depleted of HAP metals.

The only material that would meet the definition of scrap is clean copper wire pieces that the facility used to alloy some grades of aluminum.

 NA If metal scrap is purchased for the HAP metal content for alloying, records must be kept to document the HAP metal is included in the material specifications for the cast metal product.

 X Records that melt is less than 6,000 tons

 X Compliance report if a deviation occurred during semiannual period

There is no evidence that the facility has had a deviation.

CONCLUSION

Based upon the observations and information obtained during this inspection, the facility appears to be in compliance with applicable air quality rules and regulations, with the exception of exceeding the flux usage limit for FGINDUCTION. A violation notice will be issued to the facility for this exceedance.

NAME



DATE

6/15/15

SUPERVISOR

