

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

B158230378

FACILITY: SMITH CASTINGS LLC		SRN / ID: B1582
LOCATION: FORD PLT BLDG 1, KINGSFORD		DISTRICT: Upper Peninsula
CITY: KINGSFORD		COUNTY: DICKINSON
CONTACT: SCOTT FLAMINIO, PRESIDENT		ACTIVITY DATE: 07/21/2015
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

SMITH CASTINGS, INC

FACILITY DESCRIPTION

Smith Castings (SC) is located in the City of Kingsford in Dickinson County. The facility is an iron and steel foundry. The major production operations are raw material handling, mold and core production, metal melting, pouring, cooling, shakeout and cast finishing.

Molten metal is produced in two electric induction furnaces that are controlled by a baghouse. The facility utilizes green sand, phenolic urethane no-bake and furan no-bake sand systems. Cores consist of furan no-bake, core-oil and shell. Finishing operations consist of two shotblast units (one operated with a second backup) with baghouse control and several manual grinding/sanding/cutoff stations with baghouse control.

The facility currently operates Monday through Thursday, 10-hours a day. The facility employs approximately 30 workers.

REGULATORY OVERVIEW

The facility is an area source subject to the federal Iron and Steel Foundry Area Source National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart ZZZZZ under the Clean Air Act. Based on the facility's annual metal melt production, they are considered an existing "small" foundry under the NESHAP. The facility's processes that are covered by new source review (NSR) permits include the finishing operations (66-78), green sand handling system (768-88), two electric induction furnaces (328-92), furan no bake sand reclamation (65-94) and core and bond making processes (326-92B).

COMPLIANCE EVALUATION

At the facility, Air Quality Division (AQD), Eric Grinstern (EG), met with Scott Flaminio, President, Smith Castings.

Scrap/Charge Material

The facility's charge materials consist of pig iron, clean scrap plate, and revert. The facility does not melt any shredded auto scrap. The charge material is subject to pollution prevention management requirements under Subpart ZZZZZ. Written scrap specifications that have been conveyed to their scrap providers, as is required by Subpart ZZZZZ. Staff reviewed the facility's scrap inspection sheet during the inspection. Overall the facility uses clean, high quality charge material.

SAND OPERATIONS

The facility utilizes furan no-bake, phenolic urethane no-bake and green sand molds. Cores consist of core oil, furan no-bake binders and shell sand.

Permit to Install No. 768-88 covers the green sand handling system, which requires baghouse control and has a 0% opacity limit. The green sand reclamation system is controlled by the main baghouse located at the west end of the facility. The permit limits particulate emissions to 0.01 pounds per 1,000 pounds of exhaust gases. Compliance with the limit is demonstrated through proper operation of the baghouse.

Observation of the baghouse showed no emissions during the inspection.

The facility has two shell core machines that have been at the facility for 20-30 years. The facility uses a small number of shell cores. Based on the amount of shell sand usage, emissions would be expected to be under Rule 290. It is also possible that the machines were addressed via permitting previously, but not listed in the final permit conditions due to minimal emissions.

Subsequent to the inspection the facility provided data showing monthly resin usage to be about 9 pounds. Based on the evaluated emission factor, the facility would need to use 58 tons of resin to exceed the 20 pounds of formaldehyde per month limit allowed by Rule 290. Based upon this, Rule 290 appears applicable for the core machines.

Status: Compliant

The furan no-bake system is permitted under PTI No. 326-92B. The permit was modified in 2013 to allow for increased resin usage. The permit limits particulate emissions. Compliance with the particulate limit is based upon compliance with an opacity limit and proper operation of the baghouse. The no-bake system is controlled by the baghouse located at the southwest corner of the plant. The facility is limited to using 50 tons of resin per year based on a 12-month rolling time period. As required by the permit, the facility maintains records of resin usage. Review of the records demonstrated compliance. The maximum usage is slightly over 11 tons, based on a 12-month rolling time period.

Status: Compliant

The furan no-bake sand reclamation system is permitted under PTI No. 65-94, which requires baghouse control and has a 0% opacity limit. The sand reclamation system is controlled by a baghouse located inside the plant adjacent to the reclamation system. The permit limits particulate emissions to 0.01 pounds per 1,000 pounds of exhaust gases. Compliance with the limit is demonstrated through proper operation of the baghouse. The process was not in operation at the time of inspection.

Status: Compliant

MELTING OPERATIONS

Metal melting operations are conducted in two (2) electric induction furnaces. The furnaces are of the following sizes: (1) 500 lb. capacity, (1) 1,000 capacity. The facility holds PTI No. 328-92 for a 300 lb. furnace and a 1,200 lb. furnace. It appears that the 1,000 lb. furnace currently in use is the 1,200 lb. unit permitted. The two furnaces currently in use are under the 1,000 lb. furnace exemption in Rule 282(a) (iv). PTI No. 328-92 requires baghouse control from the furnaces. The facility has a hood located over the 1,000 lb. furnace that ducts to baghouse control. The facility previously stated that emissions from both furnaces are drawn into the hood. The facility melts steel in the 500 lb. furnace and iron in the 1,000 lb. furnace. The facility produces grey and ductile iron. Ductile inoculation is conducted in a pour ladle in front of the 1,000 lb. furnace, with emission being captured by the hood over the furnace. The permit limits particulate emissions to 0.01 pounds per 1,000 pounds of exhaust gases. Compliance with the limit is demonstrated through proper operation of the baghouse. Emission from the furnaces, tapping and inoculation are controlled by the main baghouse located at the west-end of the facility. The facility re-bagged the baghouse 6 days prior to the inspection.

The facility primarily produces steel castings. About one day a week iron castings are produced, with about half being ductile.

Observation of the baghouse showed no emissions.

Status: Compliant

FINISHING OPERATIONS

Cast finishing operations consist of two shot blast units (one operated with a second backup) and several manual grinding, cut-off, etc. stations. All processes have baghouse control. Finishing operations are permitted under PTI No.66-78, which requires baghouse control and has a 0% opacity limit. There are two baghouse that control finishing operations, one that controls the shot blast unit and one manual finishing station, and one baghouse that controls emissions from the remaining manual finishing stations.

During the inspection, observation of the baghouse showed that it appeared to be operating properly. Some collected material was observed below the shotblast baghouse. The facility stated that they would clean it up immediately.

Status: Compliant

AREA SOURCE IRON AND STEEL FOUNDRY NESHAP SUBPART ZZZZZ

The facility is considered an existing small area source since their metal melt production is below 20,000 tons on an annual basis. As an existing small area source the facility is subject to the pollution prevention management practices regarding metallic scrap and mercury switches, as well as notification and semi-annual certification reporting requirements. As detailed above, the facility is in compliance with the scrap pollution prevention requirements.

The facility melted 549 tons of iron/steel in 2014.

Status: Compliant

CONCLUSION

Based on the information and observations made during this inspection, the facility is in compliance with applicable air quality rules and regulations.

NAME



DATE

8/28/15

SUPERVISOR

