



REGION 5

CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Federal Metal Co., Bedford, Ohio

FROM: Meaghan Pashen, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Federal Metal Co.

Facility Location: 7250 Division Street, Bedford, Ohio 44146

Date of Inspection: November 13, 2023

EPA Inspector(s):

1. Meaghan Pashen, Environmental Engineer
2. Liam Klaiman, Environmental Engineer
3. Dakota Prentice, Environmental Engineer

Other Attendees:

1. Michael Buyarski, COO, Federal Metal Co.
2. Ian Creager, EHS Manager, Federal Metal Co. (by phone for opening and closing conference)
3. David Hendersen, Maintenance Manager, Federal Metal Co. (closing conference only)
4. Rob Wittenberg, CFO, Federal Metal Co. (closing conference only)

Contact Email Address: icreager@federalmetal.com

Purpose of Inspection: To investigate compliance with National Emissions Standards for Hazardous Air Pollutants Subpart TTTTTT for Secondary Nonferrous Metals Processing Area Sources (NESHAP Subpart TTTTTT) and Permit-to-Install and Operate Number P0133517 (PTIO), and the increase in metal hazardous air pollutant (MHAP) emissions reported to the Toxic Release Inventory (TRI) over the past five years.

Facility Type: Secondary nonferrous metals processing operation

Regulations Central to Inspection: NESHAP Subpart TTTT, including the obligation to route emissions through fabric filter baghouse that achieves a particulate matter (PM) control efficiency of at least 99%. P001 Rotary brass/bronze scrap melting furnace (F1), P005 Electric induction furnace (E1), and P007 Rotary melting furnace (F3) are subject to NESHAP Subpart TTTT. Additionally, the PTIO obligation to monitor, inspect, and test baghouses to demonstrate compliance with monitoring and testing requirements, and report deviations from these obligations through an annual permit evaluation report (PER) to Ohio EPA.

Arrival Time: 1:00 PM EST

Departure Time: 2:30 PM EST

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Small Business Resource Information Sheet not provided. Reason: Provided with inspection report
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Federal Metal Co. personnel unless otherwise noted.

Process Description:

Raw material in the form of scrap metal is received from scrapyards by truck. Scrap metal is melted at one of two electric coreless induction furnaces (E1 and E2), or one of two natural gas-fired rotary furnaces (F1 and F3). E1 and E2 melt bronze for ingot manufacturing. F1 and F3 use an oxy-fuel burner to melt brass and bronze scrap metal. Furnace emissions are routed to one of two pulse-jet baghouses (North and South baghouses). Once a furnace cycle is complete, the furnace tilts to pour into molds where there is hooding for emission capture. There is a continuous copper and aluminum recycling system at the facility (P008) which is vented to a cartridge filter baghouse.

Staff Interview:

EPA asked facility personnel about the increase in MHAP emissions, including lead, reported to the TRI over the past five years. The facility has grown businesswise and has produced more product over the past five years. Emission factors used in emission calculations have not changed in that time. Over 100 alloys are produced at the facility. The highest lead content alloy produced at the facility is 18 to 20% lead. Blood-lead testing is done at the facility biannually. Respirators are worn during high lead content

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processing. Common alloy additives are tin, zinc, and copper. Pure lead is not added to the process. Incoming scrap weight is adjusted to achieve a desired final alloy lead content. Scrap is inspected in accordance with scrap inspection procedures to ensure there are no contaminants in alloys. Bismuth is used as a lead replacement in some instances. Engineered alloys with high purity and strength are produced at electric induction furnaces. No lead nor much scrap is processed at electric induction furnaces.

The PTIO outlines the use of a shaker and/or pulse-jet baghouse used to control furnace emissions. The shaker baghouse was replaced with a pulse-jet baghouse (South baghouse); therefore, the North and South baghouses are now both pulse-jet baghouses. The PTIO requires emissions testing be conducted within 6 months prior to permit expiration. NESHAP Subpart TTTT requires the facility to route emissions through a baghouse that achieves a PM control efficiency of at least 99%. Both the North and South baghouses were stack tested in March 2023. EPA requested the most recent stack tests for the North and South baghouses. In response to the most recent stack test results, the facility submitted a permit application to increase material throughput. The current material throughput limit is 180,000 lb/day. EPA requested the permit application.

The PTIO requires baghouse monitoring once per shift. Differential pressure is monitored each shift at an operating parameter range of 1 to 6 inches of water column ("w.c.") as recommended by the manufacturer. Baghouses pulse automatically at 5" w.c. The PTIO requires that whenever the monitored value for baghouse differential pressure deviates from the operating parameter range, the permittee shall promptly investigate the cause of the deviation and report the deviation in an annual PER to Ohio EPA. Facility personnel said that baghouse differential pressure is rarely out of range. EPA requested the annual PER submitted to Ohio EPA from the past two years.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

F1 was not in operating at the time of the inspection. Typically, the facility operates one rotary and one electric induction furnace at a time. Furnace cycle time is 12 hours and includes three to four charges to the furnace about one hour apart. Five to six hours of the cycle time are for alloying.

EPA observed charging at E2. The scrap metal charged was 35% zinc. After charging and ensuring that material is within design specification the furnace tilts to pour into molds. There are hoods at pouring. EPA observed emission capture during these process steps. See Appendix A: Digital Image Log.

EPA observed the North and South baghouses. Due to computer issues at the time of the inspection, the North baghouse required manual pulsing. Typically, differential pressure increases throughout the day. EPA recorded differential pressures of 3.5 and 1.5" w.c for the two compartments of the North baghouse, respectively. EPA recorded differential pressures of 3.9 and 4.3" w.c for the two compartments of the South baghouse, respectively.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Most recent stack test for both baghouses;
- Emission calculations and methodology from the past two years;
- Most recent potential-to-emit calculations and methodology for the facility;
- Most recent permit application; and
- Annual PER submitted to Ohio EPA from the past two years.

DIGITAL SIGNATURES

Report Author: **MEAGHAN PASHEN** Digitally signed by MEAGHAN PASHEN
Date: 2024.01.05
10:30:03 -06'00'

Section Supervisor: **BRIAN DICKENS** Digitally signed by BRIAN DICKENS
Date: 2024.01.05
10:40:48 -06'00'

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APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log

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APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Dakota Prentice	2. Archival Record Location: EPA Region 5 Electronic Records Center
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Image Number	File Name	Date and Time (incl. Time zone and DST)	Latitude and Longitude	Description of Image
1	IMG_0434.JPG	11/13/2023 14:58	N/A	South baghouse
2	IMG_0435.JPG	11/13/2023 15:06	N/A	Furnace E2
3	IMG_0436.JPG	11/13/2023 15:11	N/A	Furnace F3