UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

SUBJECT:	CLEAN AIR ACT INSPECTION REPORT Vallourec Star, Youngstown, Ohio
FROM:	Meaghan Pashen, Environmental Engineer AECAB (MN/OH)
THRU:	Brian Dickens, Section Supervisor AECAB (MN/OH)
TO:	File

BASIC INFORMATION

Facility Name: Vallourec Star

Facility Location: 2669 Martin Luther King Jr. Blvd, Youngstown, Ohio 44510

Date of Inspection: May 17, 2023

EPA Inspector(s):
1. Meaghan Pashen, Environmental Engineer
2. Karyn DeFranco, Environmental Engineer

Other Attendees:
1. Joe Mook, Environmental Manager
2. Sherry Reamensnyder, Environmental Coordinator (for opening conference)

Contact Email Address: Joe Mook: joe.mook@vallourec.com

Purpose of Inspection: To investigate electric arc furnace (EAF) compliance with National Emission Standards for Hazardous Air Pollutants for Area Source Electric Arc Furnace Steelmaking Facilities (NESHAP Subpart YYYYY) and New Source Performance Standards for Electric Arc Furnace Steelmaking Facilities (NSPS Subpart AAa)

Facility Type: Ferroalloy manufacturing

Regulations Central to Inspection: NESHAP Subpart YYYYYY and NSPS Subpart AAa, including the obligation to maintain a scrap management plan including scrap inspection

procedures, perform daily visible emissions observations at the melt shop, and monitor differential pressure and complete performance testing at the melt shop baghouse.

Arrival Time: 10:45 AM EST
Departure Time: 1:00 PM EST

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

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

The following information was obtained verbally from Joe Mook unless otherwise noted.

Process Description:
Vallourec Star is a ferroalloy manufacturing facility that produces pipes primarily for the oil and gas industry. Raw material in the form of scrap metal is inspected and weighed in scrap bays. In the melt shop, scrap is loaded via crane into the charge bucket of the electric arc furnace (EAF) where primary melting occurs. There are at least two charges per heat and each heat takes approximately 50 minutes. At the ladle refining station (LRS) in the melt shop, material is tapped into one of two ladles to process two heats simultaneously and refined further. After material is refined, it moves to the continuous caster to produce round solid billets. Emissions from the melt shop are controlled by the melt shop baghouse. Billets are stored and then moved to the pipe mill. Billets are reheated to approximately 1500 to 2000º F in the billet reheat furnace so that they are hot enough to be pierced. The pipe mill is controlled by a wet scrubber. Billets, now pipes, are sent to heat treatment and other outside finishing processes.

Staff Interview:
Raw material in the form of scrap metal, is brought to the facility from scrapyards via rail and truck five days per week. Scrap is inspected visually and use portal monitors to inspect for radiation. Sealed containers, plastics, and oils are rejected. Scrap metal handling and inspection procedures are outlined in the scrap management plan. The facility utilizes approximately 1.5 billion pounds of scrap per year. The facility utilizes scrap containing manganese and other heavy metals. NSPS Subpart AAa requires that "[t]he permittee has developed and written a scrap management plan for the selection and inspection of iron and steel scrap received for charge in the EAF. This plan provides for and defines effective procedures to eliminate or minimize, to the extent practicable, mercury and organics charged to the electric arc furnace."

EPA requested the scrap management plan and scrap inspection records from the past calendar month.

The melt shop was not in operation during the inspection due to a two-week scheduled outage. The melt shop baghouse was constructed around 2008. It is a 1.2 million cfm baghouse with ten compartments. Baghouse operating parameter limits are established by performance testing. Damper position and fan amps are monitored and recorded once per shift. Fan amp monitoring is done in lieu of differential pressure monitoring. There is a bag leak detection system (BLDS) on the melt shop baghouse. The most recent performance test at the melt shop baghouse was in 2018. There is a performance test scheduled for August 2023.

NSPS Subpart AAa states that visible presence of emission (visible PE) observations taken in accordance with EPA Method 9 at the melt shop baghouse shall occur at least once per day of EAF operation during the melting and refining phase of a heat cycle and that visible emissions from the baghouse shall not exceed 3% opacity as a 6-minute average. Facility personnel stated that instances where there is visible PE at the melt shop baghouse are rare to never.

NSPS Subpart AAa states that shop opacity observations shall be conducted at least once per day for eighteen minutes when the furnace is operating in the meltdown and refining period and that the EAF shall not exhibit 6% opacity or greater as a 6-minute average. EPA requested the daily melt shop Method 9 readings for the past three months.

There is a combined lead emission limit of 1.18 tons/year based on a 12-month rolling average for the EAF and LRS. Monthly records for lead emissions are kept based on material throughput. Facility personnel stated that broken electrodes in the EAF are rare. Slag is raked into a slag pot, and a third-party contractor is used for slag handling.

The pipe mill was not in operation during the inspection due to a two-week scheduled outage. The pipe mill is controlled by a venturi scrubber. Differential pressure, scrubber liquid flowrate, and visible PE are monitored at the venturi scrubber.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
The melt shop was not in operation during the inspection. EPA observed the melt shop capture system, where the roof peak pulls emissions with canopy pickups. EPA requested the design specifications, including the demonstration of capture efficiency and clarification on the monitoring of facial velocity at the melt shop capture system. EPA observed the melt shop baghouse and requested the most recent stack test and the daily melt shop baghouse monitoring data, including fan amps, damper position, and inlet flowrate for the past three months.

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

CLOSING CONFERENCE

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

Requested documents:

- Scrap management plan;
- Scrap inspection records for April of 2023;
- Daily melt shop baghouse monitoring data, including fan amps, damper position, and inlet flowrate for February, March, and April of 2023;
- Daily melt shop method 9 readings for February, March, and April of 2023;
- Most recent melt shop baghouse stack test;
- Melt shop baghouse manufacturer's document, including recommended operating parameters;
- Design specification for the melt shop capture system, including the demonstration of capture efficiency; and
- Clarification on monitoring of facial velocity (if any) at melt shop capture system.

DIGITAL SIGNATURES

Report Author: Pashen, Meaghan Digitally signed by Pashen, Meaghan Date: 2023.07.07 10:37:40 -05'00'

Section Supervisor: CHARLES HALL Digitally signed by CHARLES HALL Date: 2023.07.07 10:58:03 -05'00'

APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Karyn Defranco	2. **Archival Record Location:** Region 5 Electronic Records Center

Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	IMG_0535.JPG	05/17/2023 at 12:39 EST	Electric arc furnace
2	IMG_0536.JPG	05/17/2023 at 12:45 EST	Ladle refining station