Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Title V, Operating
Permit: V-25-023

Nucor Steel Brandenburg
100 Ronnie Greenwell Commerce Road
Brandenburg, KY 40108

June 4, 2026
Babak Fakharpour, Reviewer

SOURCE ID:	21-163-00044
AGENCY INTEREST:	162861
ACTIVITY:	APE20250001

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3312 - Steel Works, Blast Furnaces, and Rolling Mills

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☐ Yes ☒ No If Yes, See Section 4, Table A

28 Source Category ☒ Yes ☐ No If Yes, Category: Iron and steel mills

County: Meade
Nonattainment Area ☒ N/A ☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☐ Ozone ☐ Lead

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☒ PM_{10} ☒ $PM_{2.5}$ ☒ CO ☒ NO_X ☒ SO_2 ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☒ PM_{10} ☒ $PM_{2.5}$ ☒ CO ☒ NO_X ☒ SO_2 ☐ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No
If yes, list which pollutant(s):
Note: Total potential to emit of Hexane is 9.34 tons per year.

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
Nucor Steel Brandenburg, a division of Nucor (NSB, Nucor, or the facility), is a plate steel manufacturing plant in Brandenburg, Kentucky. The facility recycles scrap steel and scrap substitutes using the electric arc furnace (EAF) process to make light plates, heavy plates, and hot rolled steel coils. Scrap steel and scrap substitutes will be delivered to the facility by barge, rail, and truck. Scrap steel, scrap substitutes, and flux will be charged to the EAF and melted by applying electric current through the feed mixture. Molten metal will be tapped to a ladle and transferred to the ladle metallurgy furnace (LMF), where the chemistry and temperature of the steel will be adjusted to customer specifications. From the LMF, the molten metal may be transferred to a vacuum degasser prior to being cast as slabs. The slabs will be heated to a consistent temperature in a reheat furnace and car bottom furnaces, respectively, prior to being rolled and shaped to its final form as hot rolled plate coils, light plates, or heavy plates. The major equipment used for this process will include a single-shell alternating current (AC) EAF, twin-shell LMF, vacuum degasser, continuous caster, reheat furnace, single-stand roughing mill, Steckel mill, Continuous Heat Treat Line, heavy plate processing operations, and protective coating application. The plant also will operate several smaller process areas, storage piles, and material transfer equipment.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-25-023 Activities: APE20250001

Received: 1/23/2025, 7/3/2025 Application Complete Date(s): 1/9/2026

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☒Yes ☐No NSR Applicable? ☐Yes ☒No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☒Yes ☐No

- *APE20250002 – Off-Permit Change:* Operation of up to eight (8) propane (or hydrogen) gas torches to process up to 100,000 tons of steel scrap plates and addition of alloy bunkers where the additional storage will be four (4) 3-sided alloy bunkers.

Description of Action:
On January 23, 2025, NSB submitted the Renewal application updating the Compliance Assurance Monitoring (CAM) plan for the affected units and other minor modification. On July 3, 2025, Nucor submitted amended Title V permit renewal application requesting increases in heat input capacities for EPs 18-01 and 18-05 in addition to the other requested minor modification submitted on 1/23/2025.

In this renewal permit, the following changes were made:

- Addition of an insignificant activity, Scrap Cutting Torches and Alloy Bunkers.
- Increase in the annual throughput of EP 01-08A – Tundish Preparation – Dump Station from 1,800 tons refractory/year to 2,300 tons refractory/year. The Division is removing the PSD-based operating limitation of 1,800 tpy because the prior significant revision (APE20220003) included PSD modeling and review at 23,652 tpy. Since no request was made at that time to remove the 1,800 tpy limit, it remained in the permit. This revision updates the permit to reflect the emission level previously evaluated and approved.
- Increase in the annual throughput of EP 01-08B – Tundish Relining Station from 1,800 tons refractory/year to 11,526 tons refractory/year. The Division is updating the maximum long-term capacity because the potential to emit calculations and long-term modeling rates were based on an annual capacity of 11,826 tons/year. This revision updates the permit to reflect the emission level previously evaluated and approved.
- Increase in the heat input capacity of EP 18-01 – Paint System Preheater from 0.00066 MMBtu/hr to 2.39 MMBtu/hr;
- Increase in the heat input capacity of EP 18-05 – Paint System Dryer from 0.000095 MMBtu/hr to 0.34 MMBtu/hr;
- Reallocation of emissions to associated release points (06-01, 06-03, 06-05);
- Revision of the description for EP 12-04 – Slag Plant Oxy Fuel-Fired Torches.
- Decrease in the annual throughput of EP 18-02 – Paint System Shot Blaster from 1,000,000 tons/year to 132,000 tons/year to reflect the rate at which a crane can load steel to the line. Because the BACT emission limitations were established based on the grain loading and exhaust flow rate of the dust collector for this unit, and neither of these parameters have changed, the BACT emission limits have not been changed as a result of this decrease in potential throughput.

- Removal of EP 05-04 – Heavy Plate Tagger, EP 15-01 – Natural Gas Direct-Fired Heaters, Process Water Heaters & Air Makeup Heaters, and EP 15-02 – Gasoline Storage Tanks #1 & #2.
- CAM plans have been revised to include updated language, and a CAM plan newly developed for EPs 04-01 and 18-03 has been incorporated into Appendix A of the permit.
- The Division also made changes and corrections to regulatory language in the permit for consistency and clarity.

As-Built Changes: The following sources were never constructed, installed, or operated and is therefore removed from the permit.

- Removal of (EP 03-08) Rolling Mill Oxy-Fuel Plate Cutting Torch, (EP 03-09) Rolling Mill Oxy-Fuel Coil Cutting Torch, (EP 10-10) G500 1 Emergency Generator, and (EP 16-01) Cleaning Tanks #1 - #12.
- The original permit authorized the installation and operation of three Ingot Bogie Hearth Furnaces (EP 03-02) and three Heavy Plate Cutting Beds (EP 05-03). It has been confirmed that only two Furnaces and two Beds were installed. The BACT emission limits for EP 03-02 and EP 03-05 have been revised to reflect emissions from the two installed processes rather than the three processes originally permitted. The change is administrative in nature and ensures the permit accurately represents the equipment currently operating at the facility.

V-25-023 Emission Summary		
Pollutant	2025 Actual (tpy)	PTE V-25-023 (tpy)
CO	398.64	2147.1
NO_X	129.11	775.1
PT	200.81	314.4
PM_{10}	118.52	438.2
$PM_{2.5}$	91.94	277.8
SO_2	67.88	313.1
VOC	14.99	149.5
Lead	0.088	0.444
Carbon Dioxide	179,873	1,052,412
Methane	3.80	26.3
Nitrous Oxide	1.41	10.7
CO_2 Equivalent (CO_{2e})		1,055,995
Arsenic	0.001	0.0035
Hexane	1.22	9.06
Fluoride	0.122	2.08
Chlorine	0.18	0.85
Manganese	0.15	0.81
Hydrogen Fluoride	0.14	0.62

V-25-023 Emission Summary		
Pollutant	2025 Actual (tpy)	PTE V-25-023 (tpy)
Formaldehyde	0.04	0.38
Acetaldehyde	0	0.35
Methylene Chloride	0.04	0.27
Methanol	0.03	0.20
Carbon Disulfide	0	0.17
Acrolein	0	0.15
Chromium	0.07	0.42
Toluene	0.00005	0.10
Benzene	0	0.05
Xylenes	0.0003	2.55
Combined HAPs:	2.05	19.17

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Group 1 – EU 01, EU 02, & EP 08-04					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	C0101	3%	40 CFR 60.272a(a)(2)	N/A	Daily Method 9, Monitoring, Recordkeeping, Reporting
	EP 01-07	10%	40 CFR 60.272a(b)		
	Any EU 01 Opening	6%	40 CFR 60.272a(a)(3); 40 CFR 63.10686(b)(2)		
	Any EU 01 Opening or Stack	20%	401 KAR 59:010, Section 3(1)(a)		
PM	• P<0.5; E = 2.34 • P ≤ 30; E=$3.59 * P^{0.62}$ P>30; $E = 17.3 * P^{0.16}$		401 KAR 59:010, Section 3(2)	Refer to the PM BACT Limits Below	Assumed when complying with BACT.
PM	C0101 Stack	0.0052 gr/dscf	40 CFR 60.272a(a)(1); 40 CFR 63.10686(b)(1)	Refer to the PM BACT Limits Below	Assumed when complying with BACT.
PM	C0101 Stack	0.0018 gr/dscf; 25.49 lb/hr; 111.64 tons/yr	401 KAR 51:017	0.0018 gr/dscf	Operating Limits, Testing (C0101 & EP 01-05), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 01-03 (under vacuum)	0.008 gr/dscf; 0.89 lb/hr; 3.89 ton/yr		0.008 gr/dscf	
	EP 01-05	12.50 lb/hr; 54.78 tons/yr		0.00744 gr/dscf; Nucor Darlington Test	
	EP 01-06	43 lb/MMscf; 0.35 ton/yr		AWS	
	EP 01-07	0.005 gr/dscf; 0.077 lb/hr; 0.34 ton/yr		0.005 gr/dscf	
	EP 01-11	3.35 lb/hr; 14.7 ton/yr		0.00744 gr/dscf; Nucor Darlington Test	
	EP 01-12	45.8 lb/MMscf; 0.38 ton/yr		AWS	
PM_{10}	C0101 Stack	0.0052 gr/dscf 73.64 lb/hr;	401 KAR 51:017	0.0052 gr/dscf	Operating Limits, Testing

Group 1 – EU 01, EU 02, & EP 08-04					
		322.53 ton/yr			(C0101 & EP 01-05), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 01-03 (under vacuum)	0.008 gr/dscf; 0.89 lb/hr; 3.89 ton/yr		0.008 gr/dscf	
	EP 01-05	2.00 lb/hr; 8.76 tons/yr		0.00119 gr/dscf; Reisman & Frisbie Sizing	
	EP 01-06	49 lb/MMscf; 0.40 ton/yr		AWS	
	EP 01-07	0.005 gr/dscf; 0.077 lb/hr; 0.34 ton/yr		0.005 gr/dscf	
	EP 01-11	0.54 lb/hr; 2.35 ton/yr		0.00119 gr/dscf; Reisman & Frisbie Sizing	
	EP 01-12	51.5 lb/MMscf; 0.43 ton/yr		AWS	
$PM_{2.5}$	C0101 Stack	0.0034 gr/dscf; 48.15 lb/hr; 210.88 ton/yr	401 KAR 51:017	0.0034 gr/dscf	Operating Limits, Testing (C0101 & EP 01-05), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 01-03 (under vacuum)	0.008 gr/dscf; 0.89 lb/hr; 3.89 ton/yr		0.008 gr/dscf	
	EP 01-05	0.25 lb/hr; 1.10 ton/yr		0.00015 gr/dscf; Reisman & Frisbie Sizing	
	EP 01-06	49 lb/MMscf; 0.40 ton/yr		AWS	
	EP 01-07	0.005 gr/dscf; 0.077 lb/hr; 0.34 ton/yr		0.005 gr/dscf	
	EP 01-11	0.07 lb/hr; 0.29 ton/yr		0.00015 gr/dscf; Reisman & Frisbie Sizing	
	EP 01-12	51.5 lb/MMscf; 0.43 ton/yr		AWS	

Group 1 – EU 01, EU 02, & EP 08-04					
CO	C0101 Stack	1.98 lb/ton; 495 lb/hr; 1,733 ton/yr	401 KAR 51:017	Design Spec.	Operating Limits, CEMs (C0101), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 01-03 (under vacuum)	0.075 lb/ton; 65.63 tons/yr		Design Spec.	
	EP 01-06	84 lb/MMscf; 0.68 ton/yr		AP-42, Table 1.4-1	
	EP 01-12	84 lb/MMscf; 0.70 ton/yr			
NO_x	C0101 Stack	0.42 lb/ton; 104 lb/hr; 363.8 ton/yr	401 KAR 51:017	Design Spec.	Operating Limits, CEMs (C0101), Monitoring, Recordkeeping, Reporting, & GCOP/GWP
	EP 01-03	0.005 lb/ton; 4.38 tons/yr		Design Spec.	
	EP 01-06	100 lb/MMscf; 0.81 ton/yr		AP-42, Table 1.4-1	
	EP 01-12	100 lb/MMscf; 0.84 ton/yr			
SO_2	C0101 Stack	0.35 lb/ton; 86.63 lb/hr; 303.2 ton/yr	401 KAR 51:017	Design Spec.	Operating Limits, CEMs (C0101), Monitoring, Recordkeeping, Reporting, & GCOP/GWP
	EP 01-03 (under vacuum)	0.005 lb/ton; 4.38 tons/yr		Design Spec.	
	EP 01-06	0.6 lb/MMscf; 0.005 ton/yr		AP-42, Table 1.4-2	
	EP 01-12	0.6 lb/MMscf; 0.005 ton/yr			
GHG	C0101 Stack	463,444 ton/yr	401 KAR 51:017	IISI	Operating Limits, Testing (C0101 & EP 01-05), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 01-03 (under vacuum)	2,511 ton/yr		Nucor Crawfordsville Test	
	EP 01-06	975 tons/yr		AP-42, Table 1.4-2	
	EP 01-12	1,011 tons/yr			
VOC	C0101 Stack	0.09 lb/ton; 77.96 tons/yr	401 KAR 51:017	Design Spec.	Operating Limits, Testing (C0101 & EP
	EP 01-03	0.005 lb/ton;		Design Spec.	

Group 1 – EU 01, EU 02, & EP 08-04					
	(under vacuum)	4.38 tons/yr			01-05), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 01-05	4.4 lb/hr; 19.27 tons/yr		BACT from Nucor Arkansas	
	EP 01-06	5.5 lb/MMscf; 0.044 tons/yr		AP-42, Table 1.4-2	
	EP 01-12	5.5 lb/MMscf; 0.046 tons/yr			

Initial Construction/Modification Dates: EP 01-01 thru EP 01-10 (2020); EP 01-11 & EP 01-12 (2022); EP 02-01 thru EP 02-06 (2020); EP 08-04 (2020)

Process Description:

Emission Unit 01 (EU 01) – Melt Shop:

Controls: Negative Pressure Pulse-Jet Baghouse (C0101). The Melt Shop is equipped with canopy hoods to capture and vent emissions that are not captured by the direct shell evacuation system (DEC or DSE). The melt shop has an overall capture efficiency of 99% of emissions generated within the melt shop.

EP 01-01 – Single Shell AC Electric Arc Furnace (EAF)

Once the EAF is charged, the roof is placed over the furnace and the electrodes are lowered to the feed mixture. The AC EAF melts down scrap through the use of graphite electrodes. When power is fed into the furnace, the electricity jumps between the two energized electrodes and into the neutral, grounded electrode. The high-voltage electric arcs created by these graphite electrodes generate large amounts of direct and radiant heat that melt the contents of the furnace. The EAF initially uses lower voltages to melt shred metal and protect the roof and walls from excessive heat. Later in the process, higher voltage is used to lengthen the electric arcs and melt the heavier scrap and scrap substitutes.

In the EAF, oxygen, natural gas, and carbon are injected into the scrap, which further accelerates scrap melting. When needed, carbon may be added to the initial charge prior to melting. At specific temperatures, the heated raw materials chemically react. These reactions are very complex and primarily involve the combustion of carbon, which releases heat to further accelerate the melting process. However, not all carbon is combusted fully to carbon dioxide (CO_2); a portion remains in the steel and a portion is removed through the furnace direct evacuation control (DEC) system in the form of carbon monoxide (CO). Elevated temperatures and proper design of the DEC system promote optimal downstream combustion of CO to CO_2. In other reactions, impurities in the steel react with the lime to form slag, which separates from the liquid steel and forms a foam-like layer on top of the liquid steel. The slag layer is decanted from the molten steel, removing the phosphorus and silica contained therein. When all conditions and steel specifications are achieved, the batch of molten steel or "heat" is tapped into a preheated ladle by opening the EAF tap hole and tilting the EAF. Steel is tapped from the EAF sump near the bottom and to one side of the furnace hearth. The hot metal is tapped into the ladle, which is transported by ladle car to the LMF. A small quantity of liquid steel may be left in the furnace bottom known as a "heel". The remaining slag in the furnace is drained out the slag door, located on the front of the furnace, into a slag pot that is transported

Group 1 – EU 01, EU 02, & EP 08-04

to a separate slag processor via Kress carrier.

The EAF is equipped with a DEC system that captures and vents emissions generated during the melting and refining processes to a negative pressure baghouse (C0101). Emissions that escape the DEC system or are generated during charging and tapping are captured by canopy hoods strategically located on the ceiling of the melt shop. The canopy hoods vent emissions to the Melt Shop Baghouse (C0101) for control of particle-phase pollutants. Small quantities of emissions escape the melt shop (1%), primarily through the scrap charge bay door, as melt shop fugitives.

Seven (7) oxy-fuel fired burners are mounted at strategic locations around the EAF shell to supply additional energy to the heat. The burners each have a maximum design heat input capacity of 17.1 MMBtu/hr for a total capacity of 119.7 MMBtu/hr

Maximum Capacity: 272 ton steel/hr; 1,750,000 ton/yr
Burner Maximum Capacity: 119.7 MMBtu/hr
Control Device: Baghouse (C0101)

EP 01-02 - Ladle Metallurgical Furnace (LMF)
From the EAF, the ladles of molten steel are transferred to the LMF where final steel refining takes place. At the LMF, the molten bath is first sampled to determine the existing chemistry. The chemistry is then adjusted by additions of various materials such as carbon, lime, and alloys. After reaching the appropriate chemistry, the bath temperature is elevated above the melting point

of steel to prevent the steel from solidifying prior to reaching the vacuum degasser or caster. The LMF is a twin-shell design that provides the ability to add flux and alloys to one ladle while another ladle is under heat using the shared set of electrodes. With this design, the shared set of electrodes can only heat one ladle at a time.

The LMF is equipped with a direct capture system (e.g., side draft hoods) that captures and vents emissions to the Melt Shop Baghouse (C0101). Emissions that escape the LMF capture system are captured by canopy hoods and ducted to the Melt Shop Baghouse (C0101) for control of particle-phase pollutants. Oxygen will be removed from the steel in the LMF through addition of aluminum and silicon. This deoxidation process removes dissolved oxygen in the melt and minimizes the potential for natural decarburization during the vacuum degassing processes.

Maximum Capacity: 272 ton steel/hr; 250 lb fluorspar/heat; 1,750,000 ton/yr
Control Device: Baghouse (C0101)

EP 01-03 – Vacuum Degasser
Molten steel will be transferred via ladle from the LMF to a vacuum degasser or directly to the continuous caster. The primary purpose of the vacuum degasser is to reduce/eliminate dissolved gases, especially hydrogen and nitrogen. During this process, sulfur is retained in the slag, resulting in minimal SO_2 emissions. Process gases are evacuated by a dry mechanical vacuum pumping system, which maintains the degasser at the required operating pressures. The process gases are filtered prior to being evacuated by the vacuum pump and exhausted to the atmosphere through a stack.

During the degassing process, material additions are made for deoxidation, desulfurizing, and alloying. These materials will be supplied to the vacuum degasser by the Alloy Handling

Group 1 – EU 01, EU 02, & EP 08-04

System. Similar to the LMF, the vacuum degasser will consist of a twin-tank design that will allow material addition to one ladle while a second ladle is under vacuum. With this design, the two vacuum tank degassers will share the vacuum pump system, which will only permit one ladle to be under vacuum at a time.

During alloy addition, the vacuum tank degasser is exhausted to the Melt Shop Baghouse (C0101) for PM control. When the vacuum tank degasser is under negative pressure, the exhaust stream is routed to a filtration system to remove particulate matter from the degasser exhaust stream prior to the mechanical vacuum pump. The filtration system is integral to the vacuum degassing process, as it is required to maintain protection of the dry mechanical vacuum pumps against abrasive particles. The filter system is located between the vacuum tank and the vacuum pump. The steel does not undergo decarburization during the degassing process, as oxygen is not added to the vacuum degasser.

Maximum Capacity: 272 ton steel/hr; 1,750,000 ton/yr
Control Device: Baghouse (C0101) (during alloy addition); Filter System (under vacuum)

EP 01-04 – Caster
In the casting unit, liquid steel is poured from the ladle into a tundish, which meters the molten steel into a vertical, water-cooled, copper mold that is the desired width and thickness of the resulting slab. The tundish is a refractory-lined, elongated trough that has a drain sized for the slab caster. From the mold, the steel then moves down through the water-spray cooling chamber via rollers and begins solidifying on the outside.

In order to maintain a continuous casting process, ladles of molten steel are staged to provide enough buffer for the desired period of continuous casting. This staging process results in a greater short-term maximum capacity of the continuous caster (370 ton/hr) than the EAF, LMF, and vacuum degasser (250 ton/hr). However, the increased capacity cannot be maintained for extended periods, and the continuous caster must be idled until sufficient molten steel buffer capacity is achieved again.

Emissions generated during the casting process are captured by canopy hoods and vented to the Melt Shop Baghouse (C0101)

Maximum Capacity: 420 ton steel/hr; 1,750,000 ton/yr
Control Device: Baghouse (C0101)

EP 01-05 – Caster Spray Vent
Steam formed from the contact of cooling water with the hot steel is captured and vented through caster spray vents that discharge above the roof of the Melt Shop.

Maximum Capacity: 420 ton steel/hr; 1,750,000 ton/yr
Control Device: None

EP 01-06 – Primary Caster Torch Cutoff
The continuous steel slab exits at the bottom of cooling the chamber and is cut to specified lengths using an oxy-fuel torch to form discrete slabs. The slabs may then be further cooled in the quench box before being transferred to the slab storage yard or continuing on the processing line to the reheat furnace.

Group 1 – EU 01, EU 02, & EP 08-04

Emissions generated from the oxy-fuel torch cutting of the cast slabs is emitted within the building at the end of the caster and discharged to atmosphere through the Rolling Mill building monovent.

Maximum Capacity: 420 ton steel/hr; 1,750,000 ton/yr
Burner Maximum Capacity: 1.88 MMBtu/hr
Control Device: None

EP 01-07 - Melt Shop Baghouse Dust Silo & Dust Handling System
Dust collected in the Melt Shop Baghouse (C0101) is conveyed via an enclosed conveyor system to a silo for temporary storage. The silo is constructed over a railcar loading station, where the baghouse dust is pneumatically loaded from the silo to the rail car. A passive bin vent located on top of the silo is used to balance the air within the silo during loading from the baghouse and unloading to the railcar.

Maximum Capacity: 6.8 ton dust/hr; 43,750 ton/yr
Control Device: Bin Vent Filter (C0107)

EP 01-08 – Tundish Relining Station (01-08B)
Tundish repair and relining activities occur in the melt shop and are conducted as needed. These operations include repair of the tundish refractory by rebricking with new refractory. Tundish repair results in both particulate emissions and VOC emissions from the refractory resin. New tundish refractory is added in the melt shop where potential particulate emissions are captured by the local canopy hoods for control at the Melt Shop Baghouse (C0101).

Maximum Capacity: 1.35 ton refractory/hr; 11,826 ton/yr
Control Device: Baghouse (C0101)

EP 01-09 – Ladle Preparation (dump and relining station)
Ladle preparation activities, including ladle dump and ladle repair, occur in the melt shop where potential particulate emissions generated during refractory preparation and repair are captured by the local canopy hoods for control at the Melt Shop Baghouse (C0101).

Maximum Capacity: 36 tons refractory/hr for dump station and 6 tons/hr for relining station; 6,000 tons/yr
Control Device: Baghouse (C0101)

EP 01-10 – Furnace Refractory Cleanout
Furnace refractory cleanout, using pneumatic and manual tools, occurs in the melt shop where potential particulate emissions released within the melt shop are captured by the local canopy hoods for control at the Melt Shop Baghouse (C0101).

Maximum Capacity: 3.13 tons refractory/hr; 813 tons/yr
Control Device: Baghouse (C0101)

EP 01-11 – Caster Quench Box
Steam formed during slab cooling via water spray in the Caster Quench Box is captured and vented through caster quench box vent that discharge above the roof of the Melt Shop.

Maximum Capacity: 420 ton steel/hr; 1,750,000 ton/yr

Control Device: None

Group 1 – EU 01, EU 02, & EP 08-04

EP 01-12 – Secondary Caster Torch Cutoff
Secondary caster torch cutting machine used to cut cold slabs per customer specifications that are wider than the standard casted slab can produce. Secondary caster torch cutting machine includes two trolleys, one in operation and the other as backup. Each trolley is equipped with a double torch, one for main oxy-cutting process and the other for sample cutting. Worst-case emissions based on a maximum of 4 cuts per slab and 10 minutes to move cut slabs and reposition new slab, where one torch is completing the main cutting process and the other torches are on stand-by with pilot flame. Emissions generated from the oxy-fuel torch cutting of the cast slabs is emitted within the building at the end of the caster and discharged to atmosphere through the Rolling Mill building monovent.

Maximum Capacity: 420 ton steel/hr; 1,750,000 ton/yr
Burner Maximum Capacity: 1.95 MMBtu/hr
Control Device: None

Emission Unit 02 (EU 02) – Melt Shop Natural Gas Combustion Sources:
EP 02-01 – Five (5) Ladle Preheaters & Two (2) LMF Ladle Preheaters
Seven (7) ladle preheaters are employed to preheat the Melt Shop ladles, including three (3) horizontal ladle preheaters, two (2) vertical ladle preheaters, and two (2) LMF vertical preheaters. Each preheater will be equipped with low-NOx burners. The two lid-mounted vertical ladle preheaters are equipped with a duct that is connected directly to the Melt Shop baghouse. The three horizontal ladle preheaters and two LMF ladle preheaters are discharge the natural gas combustion emissions into the melt shop where they are captured by the canopy hoods ducted to the Melt Shop Baghouse for PM control.
Three (3) horizontal ladle preheaters – EP 02-01A, B, and C
Two (2) vertical ladle preheaters – EP 02-01D and E
Two (2) LMF vertical ladle preheaters – EP 02-01F and G

Burner Maximum Capacity: five ladle preheaters at 15 MMBtu/hr, each; two LMF ladle preheaters at 10 MMBtu/hr, each
Control Device: Baghouse (C0101)

EP 02-03 – Tundish Preheaters #1 & #2
Two (2) tundish preheaters, equipped with low-NOx burners. Emissions from natural gas combustion are discharged into the melt shop and captured by the canopy hoods that are ducted to the Melt Shop Baghouse (C0101) for PM control.
Burner Maximum Capacity:10.9 MMBtu/hr, each
Control Device: Baghouse (C0101)

EP 02-04 – Tundish Dryer
One (1) tundish dryer, equipped with low-NOx burners. Emissions from natural gas combustion are discharged into the melt shop and captured by the canopy hoods that are ducted to the Melt Shop Baghouse (C0101) for PM control.
Burner Maximum Capacity: 10.9 MMBtu/hr
Control Device: Baghouse (C0101)

EP 02-05 –Mandrel Preheater #1 & #2
Two (2) tundish mandrel preheater all equipped with low-NOx burners. Emissions from natural gas combustion are discharged into the melt shop and captured by canopy hoods that are ducted

Group 1 – EU 01, EU 02, & EP 08-04

to the Melt Shop Baghouse (C0101) for PM control.

Burner Maximum Capacity: 5 MMBtu/hr, each
Control Device: Baghouse (C0101)

EP 02-06 –Tundish SEN Preheaters #1 & #2
Two (2) tundish submerged entry nozzle (SEN) preheaters, all equipped with low-NOx burners. Emissions from natural gas combustion are discharged into the melt shop and captured by canopy hoods that are ducted to the Melt Shop Baghouse (C0101) for PM control.

Burner Maximum Capacity: 1.42 MMBtu/hr, each
Control Device: Baghouse (C0101)

Emission Unit 08 (EU 08) – Scrap Handling System:
EP 08-04 – Scrap Charging
Emissions resulting from charging scrap to the EAF. Emissions are discharged into the melt shop and captured by canopy hoods that are ducted to the Melt Shop Baghouse (C0101) for PM control.

Maximum Capacity: 299 ton scrap/hr; 1,925,000 ton/yr
Control Device: Baghouse (C0101)

Applicable Regulations:

401 KAR 51:017, *Prevention of Significant Deterioration (PSD) of Air Quality,* applies to PM, PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, GHG, and VOC.

401 KAR 59:010, *New Process Operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.

401 KAR 60:005, Section 2(1), **40 C.F.R. 60.1 through 60.19, Table 1 (Subpart A),** *General Provisions,* specifically, the requirement to develop and implement a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. The SSM plan shall meet the requirements in 40 CFR 63.6(e)(3). This plan must be developed by the owner or operator before startup of the EAF.

401 KAR 60:005, Section 2(2)(jj), **40 C.F.R. 60.270a through 60.276a (Subpart AAa),** *Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarbonization Vessels Constructed After August 17, 1983 and On or Before May 16, 2022*, applies to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems that commences construction, modification, or reconstruction after August 17, 1983.

401 KAR 63:002, Section 2(4)(aaaaa), 40 C.F.R. 63.10680 through 63.10692, Table 1 (Subpart YYYYY), *National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities,* applies to each electric arc furnace

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(EAF) steelmaking facility that is an area source of hazardous air pollutant (HAP) emissions.

401 KAR 63:010, *Fugitive Emissions*, applies to each apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.

40 CFR 64, *Compliance Assurance Monitoring,* applies to the capture system and PM control device required by 40 CFR 63, Subpart YYYYY. The exemption in 40 CFR 64.2(b)(1)(i) for emissions limitations or standards proposed after November 15, 1990 under section 111 or 112 of the CAA does not apply.

Comments: Emissions are calculated using factors from AP-42, Section 1.4, MSDS information, RBLC data, design specifications for control devices, test data from Nucor Gallatin, Crawfordsville, Darlington, Berkley data from Steel Production: Consensus of Experts and IISI Environmental Performance Indicators, International Iron and Steel Institute (IISI), 2004, a paper by Reisman and Frisbie. (*"Calculating Realistic PM_{10} Emissions From Cooling Towers."* Reisman-Frisbie. Environmental Progress 21 (July 2002)), and a paper entitled: Fumes & Gases in the Welding Environment, the American Welding Society (AWS), 01/90.

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02

Pollutant	Emission Limit or Standard		Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20%		401 KAR 59:010, Section 3(1)(a)	N/A	Qualitative Monitoring, Recordkeeping
PM	• P<0.5; E = 2.34 • P ≤ 30; E=3.59 $* P^{0.62}$ • P>30; $E = 17.3 * P^{0.16}$		401 KAR 59:010, Section 3(2)	Refer to the PM BACT Limits Below	Assumed when complying with BACT.
PM	EP 03-01	1.9 lb/MMscf; 3.02 ton/yr	401 KAR 51:017	AP-42, Table 12.5.1-3	Operating Limits, Testing (EP 03-04), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	1.9 lb/MMscf 0.67 ton/yr		AP-42, Table 1.4-2	
	EP 03-03	0.81 lb/hr; 3.54 ton/yr		0.000198 gr/dscf; Tests at Nucor Facilities	
	EP 03-04	0.005 gr/dscf; 3.72 lb/hr; 16.28 ton/yr		0.005 gr/dscf	
	EP 03-05	1.9 lb/MMscf 0.18 ton/yr		AP-42, Table 1.4-2	
	EP 03-06	0.0029 lb/in cut;		SIPER	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
		0.022 ton/yr			
	EP 03-07	0.016 lb/hr; 0.008 ton/yr		0.00022 lb/ton SDS for Ink	
	EP 03-10	0.005 gr/dscf; 2.07 lb/hr; 9.07 ton/yr		Grain Loading	
	EP 03-11	163 lb/MMscf; 0.33 ton/yr		AWS	
	EP 04-01	0.003 gr/dscf; 0.41 lb/hr; 1.77 ton/yr		0.003 gr/dscf	
	EP 04-03	1.9 lb/MMscf; 0.39 ton/yr		AP-42, Table 1.4-2	
	EP 04-04	0.0053 lb/in cut; 0.35 ton/yr		SIPER	
	EP 04-05	0.01 lb/hr; 0.024 ton/yr		0.00027 lb/ton; SDS for ink	
	EP 04-06	0.002 lb/hr; 0.002 ton/yr		0.000042 lb/ton SDS for ink	
	EP 05-01	1.9 lb/MMscf; 1.50 ton/yr		AP-42, Table 1.4-2	
	EP 05-03	0.0067 lb/inches cut (plasma); 41 lb/MMscf (oxy-fuel); 0.20 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 12-04	1.95 lb/MMscf; 0.08 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-01 A&B	0.00532 lb/in cut (plasma); 104 lb/MMscf (oxy-fuel); 2.16 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-02	0.003 lb/hr; 0.0045 ton/yr		4.24E-5 lb/ton; SDS for Ink	
	EP 18-02	0.003 gr/dscf;		0.003 gr/dscf	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
		0.31 lb/hr; 1.35 ton/yr			
PM_{10}	EP 03-01	7.6 lb/MMscf; 12.06 ton/yr	401 KAR 51:017	AP-42, Table 12.5.1-3	Operating Limits, Testing (EP 03-04), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	7.6 lb/MMscf 2.68 ton/yr		AP-42, Table 1.4-2	
	EP 03-03	0.92 lb/hr; 4.04 ton/yr		0.000226 gr/dscf; Tests at Nucor Facilities	
	EP 03-04	0.005 gr/dscf; 3.28 lb/hr; 14.36 ton/yr		0.005 gr/dscf	
	EP 03-05	7.6 lb/MMscf; 0.73 ton/yr		AP-42, Table 1.4-2	
	EP 03-06	0.0029 lb/in cut; 0.022 ton/yr		SIPER	
	EP 03-07	0.016 lb/hr; 0.008 ton/yr		0.00022 lb/ton SDS for Ink	
	EP 03-10	0.005 gr/dscf; 2.07 lb/hr; 9.07 ton/yr		Grain Loading	
	EP 03-11	169 lb/MMscf; 0.34 ton/yr		AWS	
	EP 04-01	0.003 gr/dscf; 0.85 lb/hr; 3.72 ton/yr		0.003 gr/dscf	
	EP 04-03	7.6 lb/MMscf; 1.42 ton/yr		AP-42, Table 1.4-2	
	EP 04-04	0.0053 lb/in cut; 0.35 ton/yr		SIPER	
	EP 04-05	0.0001 lb/hr; 0.00013 ton/yr		0.00027 lb/ton; SDS for ink	
	EP 05-01	7.6 lb/MMscf; 6.0 ton/yr		AP-42, Table 1.4-2	
	EP 05-03	0.0067 lb/in cut; 46 lb/MMscf (Oxy-fuel); 0.21 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
	EP 12-04	7.65 lb/MMscf; 0.33 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-01 A&B	0.00532 lb/in cut (plasma); 109 lb/MMscf (oxy-fuel); 2.17 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-02	0.003 lb/hr; 0.0045 ton/yr		4.24E-5 lb/ton; SDS for Ink	
	EP 18-02	0.003 gr/dscf; 0.31 lb/hr; 1.35 ton/yr		0.003 gr/dscf	
$PM_{2.5}$	EP 03-01	7.6 lb/MMscf; 12.06 ton/yr	401 KAR 51:017	AP-42, Table 12.5.1-3	Operating Limits, Testing (EP 03-04), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	7.6 lb/MMscf 2.68 ton/yr		AP-42, Table 1.4-2	
	EP 03-03	0.36 lb/hr; 1.57 ton/yr		0.000088 gr/dscf; Tests at Nucor Facilities	
	EP 03-04	0.0025 gr/dscf; 1.40 lb/hr 6.13 ton/yr		0.0025 gr/dscf	
	EP 03-05	7.6 lb/MMscf 0.73 ton/yr		AP-42, Table 1.4-2	
	EP 03-06	0.0029 lb/in cut; 0.022 ton/yr		SIPER	
	EP 03-07	0.016 lb/hr; 0.008 ton/yr		0.00022 lb/ton SDS for Ink	
	EP 03-10	0.0025 gr/dscf; 1.04 lb/hr; 4.54 ton/yr		Grain Loading	
	EP 03-11	169 lb/MMscf; 0.34 ton/yr		AWS	
	EP 04-01	0.003 gr/dscf; 0.85 lb/hr; 3.72 ton/yr		0.003 gr/dscf	
	EP 04-03	7.6 lb/MMscf; 1.42 ton/yr		AP-42, Table 1.4-2	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
	EP 04-04	0.0053 lb/in cut; 0.35 ton/yr		SIPER	
	EP 04-05	0.0001 lb/hr; 0.00013 ton/yr		0.00027 lb/ton; SDS for ink	
	EP 05-01	7.6 lb/MMscf; 6.0 ton/yr		AP-42, Table 1.4-2	
	EP 05-03	0.0067 lb/in cut; 46 lb/MMscf (Oxy-fuel); 21 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 12-04	7.65 lb/MMscf; 0.33 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-01 A&B	0.00532 lb/in cut (plasma); 109 lb/MMscf (oxy-fuel); 2.17 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-02	0.003 lb/hr; 0.0045 ton/yr		4.24E-5 lb/ton; SDS for Ink	
	EP 18-02	0.003 gr/dscf; 0.31 lb/hr; 1.35 ton/yr		0.003 gr/dscf	
CO	EP 03-01	84 lb/MMscf; 130.6 ton/yr	401 KAR 51:017	AP-42, Table 1.4-1	Operating Limits, Testing (EPs 03-01, 03-02, & 05-01), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	84 lb/MMscf; 29.58 ton/yr		AP-42, Table 1.4-1	
	EP 03-05	84 lb/MMscf; 8.07 ton/yr		AP-42, Table 1.4-1	
	EP 03-11	84 lb/MMscf; 0.17 ton/yr		AP-42, Table 1.4-1	
	EP 04-03	154 lb/MMscf; 28.8 ton/yr		AP-42, Table 1.4-1	
	EP 05-01	84 lb/MMscf; 66.36 ton/yr		AP-42, Table 1.4-1	
	EP 05-03	84 lb/MMscf (oxy-fuel); 0.052 ton/yr		AP-42, Table 1.4-1	
	EP 12-04	84 lb/MMscf		SIPER; AWS;	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
		(oxy-fuel); 3.64 ton/yr		AP-42, Table 1.4-2	
	EP 17-01 A&B	84 lb/MMscf (oxy-fuel); 0.03 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
NO_x	EP 03-01	71.4 lb/MMscf; 111.05 ton/yr	401 KAR 51:017	AP-42, Table 1.4-1	Operating Limits, Testing (EPs 03-01, 03-02, & 05-01), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	122.14 lb/MMscf; 43.01 ton/yr		Vendor Guarantee	
	EP 03-05	81.6 lb/MMscf; 7.84 ton/yr		Low-NOx Burner Design	
	EP 03-06	0.57 lb/hr; 2.51 ton/yr		SIPER	
	EP 03-11	100 lb/MMscf; 0.20 ton/yr		AP-42, Table 1.4-1	
	EP 04-03	70 lb/MMscf; 14.43 ton/yr		AP-42, Table 1.4-1	
	EP 04-04	0.93 lb/hr; 4.09 ton/yr		SIPER	
	EP 05-01	81.6 lb/MMscf; 64.48 ton/yr		Low-NOx Burner Design	
	EP 05-03	1.4 lb/hr (plasma); 100 lb/MMscf (oxy-fuel); 6.19 ton/yr		SIPER; AP-42, Table 1.4-1	
	EP 12-04	100 lb/MMscf (oxy-fuel); 4.34 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-01 A&B	1.4 lb/hr (plasma); 100 lb/MMscf (oxy-fuel); 18.42 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
SO_2	EP 03-01	0.6 lb/MMscf; 0.93 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2	Operating Limits, Monitoring, Recordkeeping,
	EP 03-02	0.6 lb/MMscf; 0.21 ton/yr		AP-42, Table 1.4-2	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
	EP 03-05	0.6 lb/MMscf; 0.06 ton/yr		AP-42, Table 1.4-2	Reporting, & GCOP/GWP Plan
	EP 03-11	0.6 lb/MMscf; 0.001 ton/yr		AP-42, Table 1.4-2	
	EP 04-03	0.6 lb/MMscf; 0.11 ton/yr		AP-42, Table 1.4-2	
	EP 05-01	0.6 lb/MMscf; 0.48 ton/yr		AP-42, Table 1.4-2	
	EP 05-03	0.6 lb/MMscf (oxy-fuel); 0.0004 ton/yr		AP-42, Table 1.4-2	
	EP 12-04	0.6 lb/MMscf (oxy-fuel); 0.026 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-01 A&B	0.6 lb/MMscf (oxy-fuel); 0.00021 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
GHG	EP 03-01	187,744 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2; 40 CFR 98, Table A-1	Operating Limits, Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	42,482 ton/yr		AP-42, Table 1.4-2; 40 CFR 98, Table A-1	
	EP 03-03	150 ton/yr		Oil & Grease; 40 CFR 98, Table A-1	
	EP 03-04	227 ton/yr		Oil & Grease; 40 CFR 98, Table A-1	
	EP 03-05	11,611 ton/yr		AP-42, Table 1.4-2; 40 CFR 98, Table A-1	
	EP 03-11	246 ton/yr		40 CFR 98, Table A-1	
	EP 04-03	22,538 ton/yr		AP-42, Table 1.4-2; 40 CFR 98, Table A-1	
	EP 05-01	95,378 ton/yr		AP-42, Table 1.4-2; 40 CFR 98, Table A-1	
	EP 05-03	74 ton/yr		AP-42, Table	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02					
				1.4-2; 40 CFR 98, Table A-1	
	EP 12-04	5,234 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
	EP 17-01 A&B	42 ton/yr		SIPER; AWS; AP-42, Table 1.4-2	
VOC	EP 03-01	5.5 lb/MMscf; 8.64 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2	Operating Limits, Testing (EPs 03-04), Monitoring, Recordkeeping, Reporting, & GCOP/GWP Plan
	EP 03-02	5.5 lb/MMscf; 1.94 ton/yr		AP-42, Table 1.4-2	
	EP 03-03	1.35 lb/hr; 3.94 ton/yr		0.0045 lb/ton; Mackus & Joshi	
	EP 03-04	1.70 lb/hr; 5.83 ton/yr		0.0067 lb/ton; Mackus & Joshi	
	EP 03-05	5.5 lb/MMscf; 0.53 ton/yr		AP-42, Table 1.4-2	
	EP 03-07	0.19 lb/hr; 0.096 ton/yr		0.00077 lb/ton; SDS for ink	
	EP 03-11	5.5 lb/MMscf; 0.011 ton/yr		AP-42, Table 1.4-2	
	EP 04-03	5.5 lb/MMscf; 1.03 ton/yr		AP-42, Table 1.4-2	
	EP 04-05	0.03 lb/hr; 0.04 ton/yr		0.00096 lb/ton; SDS for ink	
	EP 04-06	0.43 lb/hr; 0.6 ton/yr		0.0035 lb/ton; SDS for ink	
	EP 05-01	5.5 lb/MMscf; 4.34 ton/yr		AP-42, Table 1.4-2	
	EP 05-03	5.5 lb/MMscf (oxy-fuel); 0.003 ton/yr		AP-42, Table 1.4-2	
	EP 12-04	5.5 lb/MMscf; 0.238 ton/yr		AP-42, Table 1.4-2	
	EP 17-01 A&B	5.5 lb/MMscf (oxy-fuel); 0.002 ton/yr		AP-42, Table 1.4-2	
	EP 17-02	0.87 lb/hr; 1.23		0.0035 lb/ton;	

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02

		ton/yr		SDS for ink	

Initial Construction Date: 2020

Process Description:

Emission Unit 03 (EU 03) - Hot Rolling Mill:
EP 03-01 – Walking Beam Reheat Furnace
For cast slabs, the steel rolling process at the mill is initiated at the walking beam reheat furnace. Cast steel slabs exiting the quench box move through the natural gas-fired reheat furnace, which reheats and equalizes the temperature of the steel slabs to increase malleability. The furnace has a maximum design heat input rate of 460 MMBtu/hr, which accounts for the total thermal capacity of all burners installed in all heating zones of the furnace. This maximum heat input capacity is more thermal capacity than is required (360 MMBtu/hr) to operate the furnace at the maximum design processing rate of 333 tons/hr of cold slabs.
The furnace design includes multiple heat distribution zones that are individually controlled with a combination of modulating and pulse-firing regulation. This combination of operating conditions optimizes the temperature uniformity of the heating zones while minimizing excess air and reducing the oxygen content inside the chamber. Preheating, heating, and bottom soaking zones will be equipped with direct-fired, low-NOx flameless burners that can work efficiently in both flame and flameless mode to maintain the required heating zone temperatures when feeding cold slabs. The top soaking zones will be equipped with direct-fired, low-NOx radiant burners. All burners operate by preheating combustion air supplied by a heat recuperative system that utilizes heat from the furnace exhaust gas to preheat the combustion air.

Maximum Capacity: 333 ton/hr; 1,750,000 ton/yr
Burner Maximum Capacity: 460 MMBtu/hr
Control Device: Low-NOx Burners (inherent)

EP 03-02 – Ingot Bogie Hearth Furnaces #1 & #2
Two (2) direct-fired natural gas bogie hearth furnaces are employed to reheat ingots produced off-site. The slabs and ingots are heated to a uniform rolling temperature of approximately 2,250 °F.

Burner Maximum Capacity: 41 MMBtu/hr, each
Control Device: Low-NOx Burners (inherent)

EP 03-03 – Roughing Mill Stand with Descaler
The slabs and ingots are descaled with high-pressure water to remove any scale from the surface prior to rolling. The slabs/ingots then move through a single-stand, four-high reversible roughing mill to reduce the slab/ingot thickness for processing as heavy plate or for further processing (i.e., transfer bar) through the Steckel mill to produce light plates or coils.

Maximum Capacity: 333 ton/hr; 1,750,000 ton/yr
Control Device: Wet Suppression

EP 03-04 – Steckel Mill Finishing Stand
After exiting the roughing mill, the transfer bar travels to the four-high, reversing Steckel mill. The Steckel Mill design also includes descalers located on both sides of the mill to remove any scale formed during heating process prior to rolling. When the steel has reached the desired

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02

thickness, it is transferred to the on-line, laminar flow cooling system where it is sprayed with water from the top and bottom to obtain the desired cooling temperature.

Maximum Capacity: 250 ton/hr; 1,750,000 ton/yr
Control Device: Wet Scrubber (C0304)

EP 03-05 –Steckel Mill Coiling Furnaces #1 & #2
On each side of the Steckel mill, mandrels housed in direct-fired heated chambers continually wind and unwind the ribbon of steel as it passes back and forth through the Steckel mill. The goal is to reduce radiant heat loss so the steel can be rolled longer and thinner. These furnaces burn natural gas.

Burner Maximum Capacity: 11.2 MMBtu/hr, each
Control Device: Low-NOx Burners (inherent)

EP 03-06 – Coil Sample Plasma Cutter
The steel sheet from the Steckel mill is either cut to length with plasma torches for processing as light plate or banded into coils via a downcoiler before transfer to the coil yard.

Maximum Capacity: 250 ton/hr; 250,000 ton/yr
Control Device: Baghouse (C0306)

EP 03-07 – Coil Tagger
The tagger is a robotic stenciling system used to apply ink-based identification markings on the rolled coils for inventory control. Emissions from the tagger are released within the Rolling Mill building, with a final egress point to atmosphere through the building roof monovent.

Maximum Capacity: 250 ton steel/hr; 250,000 ton/yr
Control Device: None

EP 03-10 – Ingot Grinding
The ingot grinding operations include a traversing grinder and a stationary grinder contained within a partial enclosure. A travelling capture system collects potential emissions that are vented to the baghouse (Ingot Grinding Baghouse) for control of particle-phase pollutants to 0.005 gr/dscf. The uncaptured emissions are emitted within the building and discharged to the atmosphere through the Rolling Mill building monovent.

Maximum Capacity: 225 ton steel/hr; 1,860,000 ton/yr
Control Device: Baghouse (C0310)

EP 03-11 – Ingot Grinding Oxy-Fuel Cutting Torch
The ingot grinding oxy-fuel cutting torch is used for cutting ingots that are 5 to 36 inches thick. Emissions generated from the oxy-fuel torch cutting of ingots will be emitted within the building and discharged to atmosphere through the Rolling Mill building monovent.
Maximum Capacity: 225 ton steel/hr; 1,860,000 ton/yr
Control Device: None

EU 04 - Continuous Heat Treat Line:
EP 04-01 – Shot Blaster
Steel plates are first descaled in a shot blast unit to remove any metal oxide scale, which could affect the plate surface quality if not removed prior to quench and tempering. The shot blast unit is an integral, all welded unit, divided into four (4) compartments - an entrance vestibule,

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02

the blast compartment, a blow-off compartment to house the abrasive removal system, and an exit vestibule. Each vestibule is equipped with a series of slit rubber curtains to permit passage of the work and retain rebounding abrasive. Fresh air enters the cabinet through the work openings and is exhausted through a ventilating hood to the dust collector. The Shot Blaster is a self-contained unit with specially designed work openings to provide inward airflow generated by the baghouse fan. PM emissions generated during shot blasting are captured and vented to the baghouse for control prior to discharge to the atmosphere through a dedicated stack.

Maximum Capacity: 50 ton/hr; 339,000ton/yr
Control Device: Baghouse (C0401)

EP 04-03 – Tempering Furnace
The Tempering Furnace is heated with direct-fired, low NOx, natural gas cold air burners. The burners are grouped into specific heating zones and the temperature in each zone is automatically controlled. The burners fire directly into the furnace to maintain the furnace operating temperature at 1,200ºF, and the waste combustion gases are vented from the furnace into an exhaust duct, pulled into an exhaust fan, and discharged to atmosphere through a vertical stack.

Burner Maximum Capacity: 43.48 MMBtu/hr
Control Device: Low-NOx Burners (inherent)

EP 04-04 – Continuous Heat Treat Plasma Torch Cutting
The plasma torch cutting is equipped with down draft burn table to capture fume generated during the cutting process and is vented to a dust collector for PM control. The dust collector will discharge within the building with a final egress point to atmosphere through the building roof monovent.

Maximum Capacity: 50 ton/hr; 339,000 ton/yr
Control Device: Dust Collector (C0404)

EP 04-05 – Continuous Heat Treat Entry Tagger
Continuous Heat Treat Tagger is a small source of PM, VOC, and HAP (toluene) emissions. Emissions from the tagger are released within the building, with a final egress point to atmosphere through the building roof monovent.

Maximum Capacity: 125 ton/hr; 339,000 ton/yr
Control Device: None

EP 04-06 – Continuous Heat Treat Exit Tagger
Continuous Heat Treat Tagger is a small source of PM, VOC, and HAP (toluene) emissions. Emissions from the tagger are released within the building, with a final egress point to atmosphere through the building roof monovent.

Maximum Capacity: 125 ton/hr; 339,000 ton/yr
Control Device: None

EU 05 - Heavy Plate Processing:
Following the Roughing Mill and prior to the Steckel Mill, heavy plates (3 inches to 14 inches thick) can be removed from the Hot Rolling Mill line and transferred to the Heavy Plate Processing area for heat treatment. Unlike light plates where the plate finish is important to the

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02

customers, the heavy plate processing operations do not require a shot blaster or other surface treatment process prior to heat treatment. As such, the heavy plates can be fed directly to the car bottom furnaces after being transferred to temporary storage from the Hot Rolling Mill.

EP 05-01 – Heavy Plate Car Bottom Furnaces #1-#4
Heavy Plate car bottom furnaces are used to perform various heat treatment processes, such as stress relieving, normalizing, tempering, austenitizing, and annealing, as required by customer specifications. This group is direct-fired car bottom furnaces, fueled by natural gas. For plates that are austenitized, they are removed from the furnace and immediately lowered into the batch quench tank for a defined duration to complete the quenching process. After cooling, the fully hardened plates are placed into another car bottom furnace to temper the plate to the desired hardness.

Burner Maximum Capacity: 46 MMBtu/hr, each
Control Device: Low-NOx Burners (inherent)

EP 05-03 – Heavy Plate Cutting Beds #1 & #2 (Plasma Torch & Oxy-Fuel Torches)
Two plate cutting beds (i.e., burning beds) are used to cut heavy plates to specific customer specifications, as well as to obtain samples for quality assurance testing. Each Heavy Plate burning bed has two (2) gantries, and each gantry has two (2) oxy-fuel torches. One of the two burning beds also will include a plasma cutter (i.e., total of eight oxy-fuel torches and one plasma torch). Each burning bed employs a downdraft table connected to a dust collector.

Maximum Capacity: For Plasma torch**:** 440 tons/hr; 180,000 tons/yr;
For Oxy-Fuel torches: 275 tons/hr; 268,750 tons/yr; 0.00014 MMscf/hr
Control Device: Baghouses (C0503A, B)

Emission Unit 12 (EU 12) – Slag processing:
EP 12-04 – Slag Plant Oxy Fuel-Fired Handheld and Track Torches
The scrap metal cutting table is used to cut revert scrap (off-specification plates/coils) with up to five (5) oxy-fuel torches to sizes that can be fed to the EAF for recycle. The oxy-fuel torches will each have a maximum natural gas consumption rate of 33 scfm. The cutting table is equipped with a fume collection system to capture PM generated during the cutting process, which will be vented to a dedicated dust collector for PM control.

Maximum Capacity: 12 ton/hr; 105,120 ton/yr
Burner Maximum Capacity: 86.7 MMscf/yr
Control Device: Baghouse (C1204)

Emission Unit 17 (EU 17) – Light Plate Finishing Line:
EP 17-01 A&B – Two (2) Light Plate Cutting Beds #1 - #2 (Plasma Cutters & Oxy-Fuel Torches)
The two (2) Light Plate Burning Beds are each equipped with two gantries. Each gantry has two oxy-fuel torches and one plasma cutter. Each burning bed is equipped with a down draft burn table to capture fumes generated during the cutting process. The down draft tables is vented through two baghouses (one for each gantry) for PM control, which is discharged to atmosphere through dedicated stacks.

Maximum Capacity: 500 ton/hr; 317,000 ton/yr
Burner Maximum Capacity: 80 scf/hr

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02

Control Device: Baghouse (C1701A, B, C, D)

EP 17-02 – Light Plate Tagger
Light Plate Tagger is a small source of PM, VOC, and HAP (toluene) emissions. Emissions from the tagger are released within the building, with a final egress point to atmosphere through the building roof monovent.

Maximum Capacity: 250 ton/hr; 711,000 ton/yr
Control Device: None

Emission Unit 18 (EU 18) – Blast and Prime Line:
EP 18-01 – Paint System Preheater
Small natural gas-fired combustion source

Maximum Capacity: 2.39 MMBtu/hr, combined (two burners)
Control Device: None

EP 18-02 – Paint System Shot Blaster
Cleaning steel plates to remove scales prior to the painting operation is accomplished by a roller conveyor shot blaster. The plates continuously pass through a pre-chamber, blasting chamber, and cleaning chamber on a roller conveyor. A ventilating hood with baffles to retain good abrasive over the plates is directed to a baghouse dust collector. Process throughput is constrained because the Paint System Shot Blaster operating rate is limited by the crane's steel-loading capacity.
Maximum Capacity: 429 ton/hr; 132,000 ton/yr
Control Device: Baghouse (C1802)

Applicable Regulations:
401 KAR 51:017, *Prevention of Significant Deterioration (PSD) of Air Quality*, applies to PM, PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, GHG, and VOC.

401 KAR 59:010, *New Process Operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.

40 CFR 64, *Compliance Assurance Monitoring*, applies to each unit (EP 04-01 for PM) subject to an emission limitation or standard that uses a control device to achieve compliance with any such limitation; without which, the emissions of the regulated air pollutant would be equal to or greater than 100% of the amount required for the source to be classified as a major source.

State-Origin Requirements:
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances,* applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

Comments: Emissions are calculated using factors from AP-42, Section 12.5.1, Section 1.4, grain loading, MSDS information, test data from Nucor Berkeley, Hickman, Texas, Tuscaloosa, the EPA paper: Volatized Lubricant Emissions from Steel Rolling Operations by Mackus and

Group 2 – EU 03, EP 04-01, EP 04-03, EP 04-04, EP 04-05, EU 05, EP 12-04, EP 17-01 A&B, EP 17-02, EP 18-01, EP 18-02
Joshi, 1980, data from the Swedish Institute of Production Engineering Research (SIPER), and a paper entitled: Fumes & Gases in the Welding Environment, the American Welding Society (AWS), 01/90. Note: **CO_{2e}** calculations for **EP 03-02** and **EP 05-03** were performed using GWP_{100} values of 28 for Methane and 265 for Nitrous Oxide.

Group 3 – EU 06, EU 08, & EU 12					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20%		401 KAR 59:010, Section 3(1)(a)	N/A	Qualitative Monitoring, Recordkeeping
PM	• P<0.5; E = 2.34 • P ≤ 30; E=$3.59 * P^{0.62}$ • P>30; $E = 17.3 * P^{0.16}$		401 KAR 59:010, Section 3(2)	Refer to the PM BACT Limits Below	Assumed when complying with BACT.
PM	EP 06-01	0.28 lb/hr; 0.13 ton/yr	401 KAR 51:017	AP-42, Section 13.2.4	Operating Limitations, Monitoring, Recordkeeping, Control Device Design
	EP 06-02A, B & C	0.005 gr/dscf; 0.12 lb/hr; 0.52 ton/yr		0.005 gr/dscf	
	EP 06-03	0.28 lb/hr; 0.033 ton/yr		AP-42, Section 13.2.4	
	EP 06-04	0.005 gr/dscf; 0.04 lb/hr; 0.17 ton/yr		0.005 gr/dscf	
	EP 06-05	0.28 lb/hr; 0.07 ton/yr		AP-42, Section 13.2.4	
	EP 08-01	0.0003 lb/ton; 0.14 ton/yr		0.0003 lb/ton; AP-42, Table 12.5-4	
	EP 08-02	0.0003 lb/ton; 0.09 ton/yr		0.0003 lb/ton; AP-42, Table 12.5-4	
	EP 08-03	0.0009 lb/ton; 0.86 ton/yr		0.0009 lb/ton; AP-42, Table 13.2.4-1	
	EP 12-01	2.06 lb/hr; 1.77 ton/yr		0.013 lb/ton; AP-42, Table 11.19.2-2	
	EP 12-03	0.01 lb/hr; 0.041 ton/yr		0.0007 lb/ton; AP-42, Table 11.19.2-2	

Group 3 – EU 06, EU 08, & EU 12					
PM_{10}	EP 06-01	0.13 lb/hr; 0.06 ton/yr	401 KAR 51:017	AP-42, Section 13.2.4	Operating Limitations, Monitoring, Recordkeeping, Control Device Design
	EP 06-02A, B & C	0.005 gr/dscf; 0.12 lb/hr; 0.52 ton/yr		0.005 gr/dscf	
	EP 06-03	0.13 lb/hr; 0.015 ton/yr		AP-42, Section 13.2.4	
	EP 06-04	0.005 gr/dscf; 0.04 lb/hr; 0.17 ton/yr		0.005 gr/dscf	
	EP 06-05	0.13 lb/hr; 0.034 ton/yr		AP-42, Section 13.2.4	
	EP 08-01	0.00015 lb/ton; 0.07 ton/yr		0.00015 lb/ton; AP-42, Table 12.5-4	
	EP 08-02	0.00015 lb/ton; 0.04 ton/yr		0.00015 lb/ton; AP-42, Table 12.5-4	
	EP 08-03	0.0004 lb/ton; 0.40 ton/yr		0.00042 lb/ton; AP-42, Table 13.2.4-1	
	EP 12-01	0.76 lb/hr; 0.77 ton/yr		AP-42, Table 11.19.2-2	
	EP 12-03	0.003 lb/hr; 0.014 ton/yr		AP-42, Table 11.19.2-2	
$PM_{2.5}$	EP 06-01	0.02 lb/hr; 0.01 ton/yr	401 KAR 51:017	AP-42, Section 13.2.4	Operating Limitations, Monitoring, Recordkeeping, Control Device Design
	EP 06-02A, B & C	0.005 gr/dscf; 0.12 lb/hr; 0.52 ton/yr		0.005 gr/dscf	
	EP 06-03	0.02 lb/hr; 0.002 ton/yr		AP-42, Section 13.2.4	
	EP 06-04	0.005 gr/dscf; 0.04 lb/hr; 0.17 ton/yr		0.005 gr/dscf	
	EP 06-05	0.02 lb/hr; 0.005 ton/yr		AP-42, Section 13.2.4	
	EP 08-01	0.00004 lb/ton; 0.02 ton/yr		0.000043 lb/ton; AP-42, Table 12.5-4	
	EP 08-02	0.00004 lb/ton; 0.01 ton/yr		0.000043 lb/ton; AP-42, Table 12.5-4	
	EP 08-03	0.0001 lb/ton; 0.06 ton/yr		0.000064 lb/ton; AP-42, Table 13.2.4-1	

Group 3 – EU 06, EU 08, & EU 12					
	EP 12-01	0.001 lb/hr; 0.26 tpy		AP-42, Table 11.19.2-2	
	EP 12-03	0.001 lb/hr; 0.004 ton/yr		AP-42, Table 11.19.2-2	

Initial Construction Date: EP 06-01 thru 06-05 and EP 12-01 & 12-03 (2022). EP 08-01 thru 08-03 (2020)

Process Description:
Emission Unit 06 (EU 06) – Lime, Carbon, Alloy Handling Systems:
EP 06-01 – EAF Flux and Carbon Handling System (dump station & material transfer)
Lime (flux) and carbon charged to the LMF is unloaded from trucks or railcar in a dump station and transferred to storage bins prior to being fed to the LMF. The dump station includes an underground unloading hopper inside a building equipped with a canopy connected to baghouse for PM control. Material from the hopper is transported to storage bins using an elevating belt conveyor and horizontal belt conveyors. The conveyors are equipped with covers to protect the conveyed material from atmospheric conditions and reduce dust emissions. Covered transfer points are equipped with suction hoods connected to the system baghouse for PM capture and control.

Maximum Capacity: 120 ton/hr; 70,000 ton/yr
Control Device: Baghouse (C0601)

EP 06-02A ,B, & C – Lime Silos A , B, & C
The lime storage silos have the capability of being loaded pneumatically directly from a truck. The lime silos are equipped with 920-scfm bin vents to control PM emissions during silo loading.

Maximum Capacity: 120 ton/hr, each; 75,000 ton/yr, each
Control Device: Passive Bin Vent Filter (C0602A, B, & C)

EP 06-03 – LMF Flux and Carbon Handling System
Flux and carbon are charged to the EAF is unloaded from trucks or railcar in a dump station and transferred to storage bins prior to being fed to the EAF. The EAF flux & carbon dump station is located inside a building equipped with a canopy connected to a baghouse for PM control. Downstream of the underground unloading hopper, conveyors used to transport the EAF flux and carbon to storage bins is shared with the LFM Flux & Carbon Handling System.
Maximum Capacity: 120 ton/hr; 35,000 ton/yr
Control Device: Baghouse (C0605)

EP 06-04 – EAF Carbon Silo
The carbon storage silo has the capability of being loaded pneumatically directly from a truck. The carbon silo is equipped with a 920-scfm bin vent to control PM emissions during silo loading.

Maximum Capacity: 120 ton/hr; 30,625 ton/yr
Control Device: Passive Bin Vent Filter (C0604)

EP 06-05 – LMF Alloy Handling System
Alloys are added to the LMF is unloaded from trucks in a dump station, similar to the LMF

Group 3 – EU 06, EU 08, & EU 12

Flux & Carbon Handling System, and transferred to storage bins. The alloy dump station is separate from the LMF flux and carbon dump station, but both systems share some of the same covered conveyors to load the material specific storage bins. Both systems also share the same baghouse for PM capture and control**.**

Maximum Capacity: 120 ton/hr; 62,000 ton/yr
Control Device: Baghouse (C0605)

Emission Unit 08 (EU 08) – Scrap Handling System:
EP 08–01 – Barge Scrap Unloading
The barge terminal will be used to unload raw materials, primarily scrap and scrap substitutes, and load finished products. Scrap will be unloaded from the barge via a clamshell or magnetic crane located on the dock and loaded into Euclid trucks for transport to scrap stockpiles.

Maximum Capacity: 600 ton/hr; 962,500 ton/yr
Control Device: None

EP 08–02 – Rail Scrap Unloading
Railcars of scrap will be unloaded via a magnetic crane directly to stockpiles or into Euclid trucks for transport to scrap stockpiles.

Maximum Capacity: 200 ton/hr; 577,500 ton/yr
Control Device: None

EP 08–03 – Scrap Pile Loading and Unloading
Trucks delivering scrap to the mill will dump the scrap directly to the scrap stockpiles. Potential emissions from scrap unloading to stockpiles from on-site Euclid trucks or off-site transport trucks, as well as from loading the scrap trucks from the stockpiles are included in the stockpile loading and unloading emission point.

Maximum Capacity: 1,000 ton/hr; 1,925,000 ton/yr
Control Device: None

Emission Unit 12 (EU 12) – Slag Processing:
EP 12-01 – Slag Processing Equipment
Slag processing equipment will be required to handle, quench, crush, and screen the slag that is generated as part of the molten steel production in the melt shop.

Maximum Capacity: 400 ton/hr; 262,500 ton/yr
Control Device: Dust Suppression/Wetting

EP 12-03 – Slag Plant Pot Slagger
Pot Slagging includes 1 ton of EAF slag per 100 cubic feet of pot volume (for slag pot protection).

Maximum Capacity: 13.5 ton/hr; 118,260 ton/yr
Control Device: Dust Suppression/Wetting

Applicable Regulations:
401 KAR 51:017, *Prevention of Significant Deterioration (PSD) of Air Quality*, applies to PM,

Group 3 – EU 06, EU 08, & EU 12

PM_{10}, and $PM_{2.5}$

401 KAR 59:010, *New Process Operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.

401 KAR 63:010, *Fugitive Emissions,* applies to each apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.

Comments:
For most EPs listed above, emissions were calculated using the grain loading value for the required control device. For uncaptured or otherwise uncontrolled emissions, emissions were calculated using AP-42, Section 13.2.4 and AP-42, Table 12.5-4, the MSDS for DRI, and DRI particle size distribution from Nucor Steel Louisiana on 5/12/14.

For EP 12-01, The throughput of the slag processing operations is based on a slag generation rate of 300 pounds of slag per ton of the liquid steel produced at the melt shop. As such, emissions estimates for the slag processing equipment are based on 262,500 tons/yr. Calculation of these emissions were completed based on AP-42, Section 11.19.2 and Section 12.5.

Group 4 – EU 09

Pollutant	Emission Limit or Standard		Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20%		401 KAR 59:010, Section 3(1)(a)	N/A	Qualitative Monitoring, Recordkeeping
PM	• P<0.5; E = 2.34 • P ≤ 30; E=$3.59 * P^{0.62}$ • P>30; $E = 17.3 * P^{0.16}$		401 KAR 59:010, Section 3(2)	All PM EFs based on TDS and total drift.	Assumed when complying with BACT.
PM	EP 09-01	0.69 lb/hr 3.02 ton/yr	401 KAR 51:017	0.234 lb/MMgal; TDS = 2800 ppm Drift = 0.001%	Operating Limits, Monitoring, Recordkeeping
	EP 09-02	0.24 lb/hr 1.05 ton/yr		0.250 lb/MMgal; TDS = 3000 ppm Drift = 0.001%	
	EP 09-04	0.83 lb/hr; 3.62 ton/yr		0.250 lb/MMgal; TDS = 3000 ppm Drift = 0.001%	
	EP 09-05	0.49 lb/hr; 2.15 ton/yr		0.234 lb/MMgal; TDS = 2800 ppm Drift = 0.001%	
	EP 09-06	0.15 lb/hr; 0.66 ton/yr		0.250 lb/MMgal; TDS = 3000 ppm	

Group 4 – EU 09					
				Drift = 0.001%	
	EP 09-07	0.66 lb/hr; 2.89 ton/yr		0.250 lb/MMgal; TDS = 3000 ppm Drift = 0.001%	
	EP 09-08	0.46 lb/hr; 2.03 ton/yr		0.250 lb/MMgal; TDS = 3000 ppm Drift = 0.001%	
	EP 09-09	0.18 lb/hr; 0.79 ton/yr		0.234 lb/MMgal; TDS = 2800 ppm Drift = 0.001%	
PM_{10}	EP 09-01	0.51 lb/hr 2.25 ton/yr	401 KAR 51:017	74.68% of PM; Reisman-Frisbie	Operating Limits, Monitoring, Recordkeeping
	EP 09-02	0.17 lb/hr 0.76 ton/yr		72.66% of PM; Reisman-Frisbie	
	EP 09-04	0.57 lb/hr; 2.49 ton/yr		68.81% of PM; Reisman-Frisbie	
	EP 09-05	0.34 lb/hr; 1.48 ton/yr		68.81% of PM; Reisman-Frisbie	
	EP 09-06	0.11 lb/hr; 0.48 ton/yr		72.66% of PM; Reisman-Frisbie	
	EP 09-07	0.48 lb/hr; 2.10 ton/yr		72.66% of PM; Reisman-Frisbie	
	EP 09-08	0.34 lb/hr; 1.48 ton/yr		74.68% of PM; Reisman-Frisbie	
	EP 09-09	0.13 lb/hr; 0.59 ton/yr		74.68% of PM; Reisman-Frisbie	
$PM_{2.5}$	EP 09-01	0.002 lb/hr 0.007 ton/yr	401 KAR 51:017	0.22% of PM; Reisman-Frisbie	Operating Limits, Monitoring, Recordkeeping
	EP 09-02	0.0005 lb/hr 0.002 ton/yr		0.22% of PM; Reisman-Frisbie	
	EP 09-04	0.002 lb/hr; 0.0078 ton/yr		0.22% of PM; Reisman-Frisbie	
	EP 09-05	0.001 lb/hr; 0.005 ton/yr		0.22% of PM; Reisman-Frisbie	
	EP 09-06	0.0003 lb/hr; 0.001 ton/yr		0.22% of PM; Reisman-Frisbie	
	EP 09-07	0.001 lb/hr; 0.006 ton/yr		0.22% of PM; Reisman-Frisbie	
	EP 09-08	0.001 lb/hr; 0.004 ton/yr		0.22% of PM; Reisman-Frisbie	
	EP 09-09	0.0004 lb/hr; 0.002 ton/yr		0.22% of PM; Reisman-Frisbie	

Group 4 – EU 09

Initial Construction Date: 2020

Process Description:
EU 09 - Cooling Towers:
Eight (8) cooling tower systems are used to provide the required cooling capacity for the facility's direct cooling water (DCW) and indirect cooling water (ICW) systems. The eight cooling tower systems include the following:

EP 09-01 – Melt Shop ICW Cooling Tower System 100 (3 Cell)
A 3-cell cooling tower to support the noncontact cooling water demand for the melt shop processes.
Maximum Capacity: 49,200 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

EP 09-02 – Melt Shop DCW Cooling Tower System 200 (2 Cell)
A 2-cell cooling cell cooling tower to provide contact cooling water to the melt shop.
Maximum Capacity: 16,000 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

EP 09-04 – Rolling Mill DCW Cooling Tower System 400 (3 Cell)
A 3-cell cooling tower to support the Rolling Mill contact cooling water demand.
Maximum Capacity: 55,000 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

EP 09-05 – Rolling Mill ACC ICW Cooling Tower System 500 (2 Cell)
A 2-cell cooling tower for the ACC cooling water system in the Rolling Mill.
Maximum Capacity: 35,000 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

EP 09-06 – Heavy Plate Quench DCW Cooling Tower System 600 (4 Cells)
A 4-cell cooling tower to support the contact cooling water demand for the heavy plate quenching operation.
Maximum Capacity: 10,100 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

EP 09-07 – Quench & ACC Laminar DCW Cooling Tower System 700 (3 Cells)
A 3-cell cooling tower to support the contact cooling water demand for the heavy plate processing area.
Maximum Capacity: 44,000 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

EP 09-08 – Heat Treat Cooling Tower System 800 (8 Cells)
A 8-cell cooling tower to support cooling water demand from the Continuous Heat Treat Line water quenching MFQ.
Maximum Capacity: 30,900 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

Group 4 – EU 09

EP 09-09 – Air Separation Plant Cooling Tower, System 900 (4 Cells)
A 4-cell cooling tower to support the cooling water demand from the Air Separation Plant.
Maximum Capacity: 7,044 gal/min
Control Device: Mist Eliminator, 0.001% drift loss

Applicable Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, applies to PM, PM_{10}, and $PM_{2.5}$

401 KAR 59:010, *New process operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.

Precluded Regulations:
401 KAR 63:002, Section 2(4)(j), 40 C.F.R. 63.400 through 63.407, Table 1 (Subpart Q), *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers,* precluded by prohibiting the use of chromium-based water treatment chemicals in the cooling towers.

Comments:
All cooling towers are equipped with mist eliminators designed to minimize drift losses to 0.001% and emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (*"Calculating Realistic PM_{10} Emissions From Cooling Towers."* Reisman-Frisbie. Environmental Progress 21 (July 2002))

Group 5 – EP 10-01, EP 10-02, EP 10-03, EP 10-04, EP 10-08, & EP 10-09

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
NMHC + NO_x	4.77 g/HP-hr	40 CFR 60.4205; 401 KAR 51:017	40 CFR 89.112, Table 1	Certified Engine, Monitoring, Recordkeeping, Reporting, GCOP Plan
PM, PM_{10}, $PM_{2.5}$	0.15 g/HP-hr	40 CFR 60.4205; 401 KAR 51:017	40 CFR 89.112, Table 1	
CO	2.61 g/HP-hr	40 CFR 60.4205; 401 KAR 51:017	40 CFR 89.112, Table 1	

Initial Construction Date: 2022; 2024

Process Description:
Diesel emergency generators and a fire water pump used to provide emergency power/fire water supply for critical operations should the facility power supply be interrupted. These generators have a displacement of less than 30 liters per cylinder.

Emission Point #	Unit Name	Maximum Rated Capacity	Fuel Used	Control Device
Emission Unit 10 (EU 10): Emergency Generators > 500 HP				
10-01	G100-1 Emergency Generator	1474 HP	Diesel	None
10-02	G100-2 Emergency Generator	2,937 HP	Diesel	None

Group 5 – EP 10-01, EP 10-02, EP 10-03, EP 10-04, EP 10-08, & EP 10-09

10-03	G100-3 Emergency Generator	2,937 HP	Diesel	None
10-04	G200-1 Emergency Generator	1,474 HP	Diesel	None
10-08	G300-1 Emergency Generator	1,474 HP	Diesel	None
10-09	G400-1 Emergency Generator	1,474 HP	Diesel	None

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* applies to PM, PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, GHG, and VOC.

401 KAR 60:005, Section 2(2)(dddd), **40 C.F.R. 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII)**, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,* applies to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in 40 CFR 60.4200(a)(1) through (4). For the purposes of 40 CFR 60, Subpart IIII, the date that construction commences is the date the engine is ordered by the owner or operator.

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* applies to each new stationary RICE located at a major or area source of HAP emissions.

Comments:

The emergency engines may be operated for a maximum of 100 hours per calendar year for the purposes of maintenance checks and readiness testing in accordance with 40 CFR 60, Subpart IIII. However, because these regulations do not limit the number of hours the emergency generators may operate during an emergency, annual emissions calculations are based on 500 hours per year of operation. Emissions based on AP-42, Section 3.4, 40 CFR 98, Subpart A, Table A-1, 40 CFR 98, Subpart C, C-2, and emission standards from 40 CFR 60, Subpart IIII.

Group 6 – EP 11-06 & EP 11-07

Pollutant	Emission Point #	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
NO_x	EP 11-06	2.0 g/HP-hr	40 CFR 60.4233(d); 401 KAR 51:017	592 lb/MMscf; 40 CFR 60, Subpart JJJJ, Table 1	Cert. Engine, Recordkeeping, GCOP Plan
	EP 11-07	10 g/HP-hr			
CO	EP 11-06	4.0 g/HP-hr		1184 lb/MMscf; 40 CFR 60, Subpart JJJJ, Table 1	
	EP 11-07	387 g/HP-hr			
VOC	EP 11-06	1.0 g/HP-hr		296 lb/MMscf; 40 CFR 60, Subpart JJJJ, Table 1	

Initial Construction Date: 2022

Process Description:

Emission Unit 11 (EU11) – Emergency Generators < 500 HP:

Natural Gas emergency generators used to provide emergency power supply for critical

Group 6 – EP 11-06 & EP 11-07

operations should the facility power supply be interrupted. These generators are 4-stroke, rich-burn engines that have a displacement of less than 30 liters per cylinder.
EP 11-06 - Air Separation Plant Emergency Generator
Fuel: Natural Gas
Maximum Rating: 410 HP
Control Device: None
EP 11-07 - Admin Building Emergency Generator
Fuel: Natural Gas
Maximum Rating: 103 HP
Control Device: None

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* applies to PM, PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, GHG, and VOC.

401 KAR 60:005, Section 2(2)(eeee), 40 C.F.R. 60.4230 through 60.4248, Tables 1 through 4 (Subpart JJJJ), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines,* applies to owners and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in 40 CFR 60.4230(a)(1) through (6). For the purposes of 40 CFR 60, Subpart JJJJ, the date that construction commences is the date the engine is ordered by the owner or operator.

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* applies to each new stationary RICE located at a major or area source of HAP emissions.

Comments:
The emergency engines may be operated for a maximum of 100 hours per calendar year for the purposes of maintenance checks and readiness testing in accordance with 40 CFR 60, Subpart JJJJ. However, because these regulations do not limit the number of hours the emergency generators may operate during an emergency, annual emissions calculations are based on 500 hours per year of operation. Emissions based on AP-42, Section 3.2, 40 CFR 98, Subpart A, Table A-1, 40 CFR 98, Subpart C, Table C-1 and C-2, emission standards from 40 CFR 60, Subpart JJJJ, and a NG heating value of 1,020 Btu/scf.

Group 7 – EP 04-02 & EU 13

Pollutant	Emission Limit or Standard		Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM (filterable)	EP 04-02	0.32 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	AP-42, Table 1.4-2	Operating Limits, Monitoring, Recordkeeping, Reporting, & GCOP Plan
		1.9 lb/MMscf; 0.61 ton/yr	401 KAR 51:017		
	EP 13-01	0.32 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)		
		1.9 lb/MMscf;	401 KAR 51:017		

Group 7 – EP 04-02 & EU 13					
		0.24 ton/yr			
PM_{10}	EP 04-02	7.6 lb/MMscf; 2.42 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2	
	EP 13-01	7.6 lb/MMscf; 0.95 ton/yr			
$PM_{2.5}$	EP 04-02	7.6 lb/MMscf 2.42 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2	
	EP 13-01	7.6 lb/MMscf; 0.95 ton/yr			
Opacity	20%		401 KAR 59:015, Section 4(2)	N/A	Assumed when burning NG
CO	EP 04-02	88.6 lb/MMscf; 28.24 ton/yr	401 KAR 51:017	AP-42, Table 1.4-1	Operating Limits, Monitoring, Recordkeeping, Reporting, & GCOP Plan
	EP 13-01	84 lb/MMscf; 10.46 ton/yr			
NO_x	EP 04-02	160 lb/MMscf; 51.0 ton/yr	401 KAR 51:017	AP-42, Table 1.4-1, Vendor Specifications	Operating Limits, Testing (EP 04-02), Monitoring, Recordkeeping, Reporting, & GCOP Plan
	EP 13-01	50 lb/MMscf; 6.23 ton/yr			
SO_2	EP 04-02	1.2 lb/MMBtu	401 KAR 59:015, Section 5(1)(c)	AP-42, Table 1.4-2	Operating Limits, Monitoring, Recordkeeping, Reporting, & GCOP Plan
		0.6 lb/MMscf; 0.19 ton/yr	401 KAR 51:017		
	EP 13-01	1.2 lb/MMBtu	401 KAR 59:015, Section 5(1)(c)		
		0.6 lb/MMscf; 0.07 ton/yr	401 KAR 51:017		
GHG	EP 04-02	38,478 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2; 40 CFR 98, Table A-1	Operating Limits, Monitoring, Recordkeeping, Reporting, & GCOP Plan
	EP 13-01	15,032 ton/yr			
VOC	EP 04-02	5.5 lb/MMscf; 1.75 ton/yr	401 KAR 51:017	AP-42, Table 1.4-2	Operating Limits, Monitoring, Recordkeeping, Reporting, & GCOP Plan
	EP 13-01	5.5 lb/MMscf; 0.68 ton/yr			

Initial Construction Date: EP 04-02 (2022), EP 13-01 (2020)

Process Description:
Emission Unit 04 (EU 04) – Continuous Heat Treat Line:
EP 04-02 – Austenitizing Furnaces
The Austenitizing Furnace is indirect fired with a nitrogen atmosphere to prevent scale

Group 7 – EP 04-02 & EU 13

formation and the resulting scale pickup that occurs on the roll surface. The final design of the furnace includes recuperative burners with a guaranteed NOx emission rate of 0.16 lb/MMBtu (160 lb/MMscf) and CO emission rate of 0.009 lb/MMBtu (88.6 lb/MMscf).
Burner Maximum Capacity: 74.23 MMBtu/hr
Control Device: None

Emission Unit 13 (EU 13) – Air Separation Plant:
EP 13-01 – Water Bath Vaporizer
The Water Bath Vaporizer is a backup unit employed when the air separation plant is down or the nitrogen or oxygen demand is more than the air separation plant is generating. During these events, liquefied gas maintained in storage tanks is passed through the Water Bath Vaporizer to vaporize the liquefied gas prior to distributing the gas to the process operations. The vaporizer consists of two natural gas-fired, low NOx burners to heat the water bath. The combustion gases from the indirect-fired burners exhaust directly to the atmosphere via individual stacks.
Burner Maximum Capacity: Two at 14.5 MMBtu/hr, each
Control Device: None

Applicable Regulation:
401 KAR 51:017, *Prevention of Significant Deterioration of Air Quality*, applies to PM, PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, GHG, and VOC.

401 KAR 59:015, *New Indirect heat Exchangers,* applies to each indirect heat exchanger having a heat input capacity greater than one (1) million BTU per hour (MMBTU/hr) commenced on or after April 9, 1972.

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,* applies to EP 13-01 as a steam generating unit for which construction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

State-Origin Requirements:
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*, applies to 04-02.

Comments:
Emissions based on AP-42, Section 1.4, 40 CFR 98, Subpart A, Table A-1, Vendor specifications for low-NOx burners, and a NG heating value of 1,020 Btu/scf.

Group 8 – EU 14, EP 12-02, & EP 01-08A

Initial Construction Date: EP 14-01, 14-02, 12-02 (2020). EP 01-08A (2022)

Process Description:

Emission Unit 14 (EU 14) – Roads:
EP 14-01 – Paved Roads
EP 14-02 – Unpaved Roads
Various paved and unpaved roads within the PSD-prescribed source boundary.
Unpaved Roads for transporting material between the melt shop and slag processing.

Maximum Capacity:
For EP 14-01: 814 VMT/day; 297,205 VMT/yr
For EP 14-02: 264 VMT/day; 96,462 VMT/yr
Controls: Wetting/Sweeping

Emission Unit 12 (EU 12) – Slag Processing:
EP 12-02 – Slag Processing Piles
Slag processing piles are required to temporarily store in-process material and final size-specific products prior to transport off site.

Maximum Capacity: 400 tons/hr; 328,125 tons/yr
Controls: Dust Suppression

Emission Unit 01 (EU 01) – Melt Shop:
EP 01-08 A – Tundish Preparation Dump Station
Spent refractory removal. The tundish shells are dumped soon after they are removed from the casting deck turrets, so that the residual steel does not have time to solidify.

Maximum Capacity: 2.7 tons refractory/hr; 23,652 tons refractory/yr
Controls: None

Applicable Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, applies to PM, PM_{10}, and $PM_{2.5}$

401 KAR 63:010, *Fugitive emissions,* applies to each apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.

Comments:
Potential emissions for the roads were calculated using AP-42, Section 13.2.1. 3.21 miles paved, and 1.24 miles unpaved roadway. Potential emissions from the slag piles (EP 12-02) include material transfer onto the piles and loading material from the piles into trucks, as well as potential emissions from wind erosion. The calculation methodology divides the pile into different wind regimes and calculates a corresponding Erosion Potential for each regime. The calculation logic looks at the total percent of the surface area affected and selects the wind regimes to be included in the calculation starting with the regime with the largest erosion potential. The wind regime for us/ur of 1.1 has the largest erosion potential with a total area of 4%. Since the total percent of the surface area affected per disturbance for each pile is less than 4%, only that wind regime is

Group 8 – EU 14, EP 12-02, & EP 01-08A
included in the calculation. Calculation of these emissions were completed based on AP-42 emission calculation methodologies for Aggregate Handling and Storage Piles (Section 13.2.4) and Industrial Wind Erosion (Section 13.2.5). Potential emissions for Tundish Dump Station (EP 01-08A) were calculated using AP-42, Section 12.5 (Table 12.5-4).

Group 11 – EU 18					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20%		401 KAR 59:010, Section 3(1)(a)	N/A	Monitoring, Recordkeeping
PM	• P<0.5; E = 2.34 • P ≤ 30; E=$3.59 * P^{0.62}$ • P>30; $E = 17.3 * P^{0.16}$		401 KAR 59:010, Section 3(2)		Assumed when complying with BACT.
PM	EP 18-03	0.51 lb/hr; 2.24 tons/yr	401 KAR 51:017	Coating SDS, (48.1% solids content	Operating Limitations, 5-year testing, monthly calculation, monitoring, & recordkeeping
PM_{10}	EP 18-03	0.53 lb/hr; 2.30 tons/yr	401 KAR 51:017		
$PM_{2.5}$	EP 18-03	0.53 lb/hr; 2.30 tons/yr	401 KAR 51:017		
VOC	EP 18-03	85% control	401 KAR 59:225, Section 3	N/A	Assumed when complying with BACT.
VOC	EP 18-03	98% control	401 KAR 51:017	Coating and MEK Cleanup SDS,	RTO, Initial testing and testing once every 5 years.
		5.52 lb/hr; 24.20 ton/yr			Operating Limitations, 5-year testing, monthly calculation, monitoring, recordkeeping & GWP Plan

Initial Construction Date: 2022

Process Description:
EU 18 - Blast and Prime Line:
Airless spraying of coating occurs in EP 18-03 and the coating is dried in EP 18-05. These two EPs share an RTO for coating emissions. EP 18-05 natural gas emissions are exhausted through a separate stack shared with EP 18-01. The paint prep room is exhausted to the painting cabinet and controlled by the RTO with destruction efficiency (DRE) of 98%.

Group 11 – EU 18

EP 18-03 – Plate Painting Operation (Incl. paint prep room)
An automatic painting system within the painting cabinet applies the primer at the specified coating thickness, typically 0.5 to 1 mils. A sensor system is employed that provides recognition of the plate height and edges. Airborne paint particles are extracted by the optimized linear airflow of the air extraction system and transported directly to a brush pre-separator. This system catches most of the paint particles and reduces the particle load to the downstream paint filtration system. Following the paint filtration system, the airflow is routed to a regenerative thermal oxidizer (RTO, 2.4 MMBtu/hr)) for destruction of the VOC evolved from the painting and drying operations within the painting cabinet.

Maximum Capacity: 50.7 gal/hr; 444,132 gal/yr
Control Device: Booth Filter (C1803B); Regenerative thermal oxidizer (RTO) (C1803A)

EP 18-05 – Paint System Dryer
After leaving the painting cabinet, the coated plates pass through the paint dryer for final curing to allow immediate handling of the plate without damaging the coating. The paint dryer is heated with the excess heat exhausted from the pre-heater. The dryer also is equipped with a 95 Btu/hr burner that is used to bring the dryer up to operating temperature during a cold start or to supplement the excess heat from the pre-heater if needed

Maximum Capacity: 0.34 MMBtu/hr burner
Control Device: Regenerative thermal oxidizer (RTO)

Applicable Regulations:
401 KAR 51:017, *Prevention of Significant Deterioration of Air Quality*, applies to PM, PM_{10}, $PM_{2.5}$, and VOC

401 KAR 59:010, *New Process Operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.

401 KAR 59:225, *New Miscellaneous Metal Parts and Products Surface Coating Operations,* applies to each affected facility commenced on or after June 24, 1992 which is part of a major source located in a county or portion of a county designated attainment for ozone in 401 KAR 51:010.

40 CFR 64, *Compliance Assurance Monitoring*, applies to each unit (EP 18-03 for PM and VOC) subject to an emission limitation or standard that uses a control device to achieve compliance with any such limitation; without which, the emissions of the regulated air pollutant would be equal to or greater than 100% of the amount required for the source to be classified as a major source.

State-Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter or toxic substances,* applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

Comments:
Emissions calculated using MSDS/Material Balance, AP-42, Chapter 1.4.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput & Operating Parameter(s) Established During Test	Activity Graybar	Date of Compliance Testing
EU 01 (01-01, 01-02, 01-03 (alloy addition), 01-04, 01-08B, 01-09 A&B, 01-10, 02-01, 02-03, 02-04, 02-05, 02-06 08-04)	Baghouse (C0101)	Lead	401 KAR 51:017; 40 CFR 60.272a; 40 CFR 63.10686	Initial; Annual	Methods 12	NA (establishing EF)	3.19E-5 lb/ton	321.7 ton/hr	CMN20230004	6/6/2023
		Fluoride			Method 13A/13B		0.000652 lb/ton			
		VOC			Method 25A/18	0.09 lb/ton; 77.96 tons/yr	0.05 lb/ton; 66.1 ton/yr			
		PM			Method 5	0.0018 gr/dscf; 25.49 lb/hr; 111.64 ton/yr	0.0005 gr/dscf; 6.29 lb/hr; 27.57 ton/yr			
		PM_{10}			Methods 201A/202	0.0052 gr/dscf; 73.64 lb/hr; 322.53 ton/yr	0.0006 gr/dscf; 8.57 lb/hr; 37.53 ton/yr			
		$PM_{2.5}$				0.0034 gr/dscf; 48.15 lb/hr; 210.88 ton/yr	0.0006 gr/dscf; 7.35 lb/hr; 32.21 ton/yr			
EU 01	Baghouse (C0101)	PM	401 KAR 51:017; 40 CFR 60.272a; 40	Initial; Annual	Method 5	0.0018 gr/dscf; 25.49 lb/hr; 111.64 ton/yr	4.754E-4 gr/dscf; 5.02 lb/hr; 22 ton/yr	305 tons/hr	CMN20240003	6/4/2024

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput & Operating Parameter(s) Established During Test	Activity Graybar	Date of Compliance Testing
		PM_{10}	CFR 63.10686		Methods 201A/202	0.0052 gr/dscf; 73.64 lb/hr; 322.53 ton/yr	1.58E-3 gr/dscf; 17.73 lb/hr; 77.67 ton/yr			
		$PM_{2.5}$				0.0034 gr/dscf; 48.15 lb/hr; 210.88 ton/yr	0.0015 gr/dscf; 16.36 lb/hr; 71.66 ton/yr			
		NMEHC			Method 25A	0.09 lb/ton; 77.96 tons/yr	0.02 lb/ton; 30.08 ton/yr			
EU 01	Baghouse (C0101)	PM	401 KAR 51:017; 40 CFR 60.272a; 40 CFR 63.10686	Initial; Annual	Method 5	0.0018 gr/dscf; 25.49 lb/hr; 111.64 ton/yr	7.2E-4 gr/dscf; 7.64 lb/hr; 33.47 ton/yr	305.6 ton/hr	CMN20250003	(7/29-7/31) 2025
		PM_{10}			Methods 201A/202	0.0052 gr/dscf; 73.64 lb/hr; 322.53 ton/yr	0.0013 gr/dscf; 13.79 lb/hr; 60.40 ton/yr			
		$PM_{2.5}$				0.0034 gr/dscf; 48.15 lb/hr; 210.88 ton/yr	0.0010 gr/dscf; 10.55 lb/hr; 46.21 ton/yr			
		VOC			Method 25	0.09 lb/ton; 77.96 tons/yr	0.015 lb/ton; 20.36 ton/yr	305.6 ton/yr		
EP 01-05	None	PM (filterable)	401 KAR 51:017	Initial; Annual	Method 5	12.50 lb/hr; 54.78 ton/yr	6 lb/hr; 26.4 ton/yr	266 ton/hr	CMN20230008	8/1/2023

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput & Operating Parameter(s) Established During Test	Activity Graybar	Date of Compliance Testing
		PM_{10}		Initial; Annual	Methods 201A/202	2.0 lb/hr; 8.76 ton/yr	1.2 lb/hr; 5.3 ton/yr			
		$PM_{2.5}$		Initial; Annual	Methods 201A/202	0.25 lb/hr; 1.10 ton/yr	0.15 lb/hr; 0.66 ton/yr			
		VOC		Initial; Annual	Method 25	4.4 lb/hr; 19.27 ton/yr	1.09 lb/hr; 4.77 ton/yr			
EP 01-05	None	PM (filterable)	401 KAR 51:017	Initial; Annual	Method 5	12.50 lb/hr; 54.78 ton/yr	11.07 lb/hr; 48.51 ton/yr	270 ton/hr	CMN20240004	3/19/2024
		PM_{10}		Initial; Annual	Methods 201A/202	2.0 lb/hr; 8.76 ton/yr	2.01 lb/hr; 8.79 ton/yr			
		$PM_{2.5}$		Initial; Annual	Methods 201A/202	0.25 lb/hr; 1.10 ton/yr	0.25 lb/hr; 1.10 ton/yr			
		VOC		Initial; Annual	Method 25	4.4 lb/hr; 19.27 ton/yr	4.0 lb/hr; 17.7 ton/yr			
EP 01-05	None	PM (filterable)	401 KAR 51:017	Annual	Method 5	12.50 lb/hr; 54.78 ton/yr	5.4 lb/hr; 23.8 ton/yr	299.7 ton/hr	CMN20240006	11/2/2024
		PM_{10}			Methods 201A/202	2.0 lb/hr; 8.76 ton/yr	1.2 lb/hr; 5.1 ton/yr			
		$PM_{2.5}$			Methods 201A/202	0.25 lb/hr; 1.10 ton/yr	0.15 lb/hr; 0.64 ton/yr			
		VOC			Method 25	4.4 lb/hr; 19.27 ton/yr	Not tested			
EP 01-05	None	PM (filterable)	401 KAR 51:017	Annual	Method 5	12.50 lb/hr; 54.78 ton/yr	9.23 lb/hr; 40.45 ton/yr	304.6 ton/hr	CMN20250005	11/8/2025
		PM_{10}			Methods 201A/202	2.0 lb/hr; 8.76 ton/yr	1.86 lb/hr; 8.17 ton/yr			
		$PM_{2.5}$			Methods 201A/202	0.25 lb/hr; 1.10 ton/yr	0.23 lb/hr; 1.02 ton/yr			

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput & Operating Parameter(s) Established During Test	Activity Graybar	Date of Compliance Testing
		VOC			Method 25	4.4 lb/hr; 19.27 ton/yr	2.28 lb/hr 10.0 ton/yr			
EP 03-01	None	PM_{10}	401 KAR 51:017	Initial	Method 7	0.07 lb/MMBtu; 71.4 lb/MMscf; 111.05 ton/yr	0.037 lb/MMBtu; 43.4 lb/MMscf; 31.6 ton/yr	173,369 scfh	CMN20230007	5/31/2023
		CO	401 KAR 51:017	Initial	Method 10	84 lb/MMscf; 130.6 ton/yr	1.3 lb/MMscf; 1.1 ton/yr			
EP 03-02	None	NO_x	401 KAR 51:017	Initial	Method 7	0.12 lb/MMBtu; 122.14 lb/MMscf; 64.51 ton/yr	0.15[2] lb/MMBtu; 232.89[2] lb/MMscf; 36.84 ton/yr	36,258 scfh	CMN20230006	6/1/2023
		CO			Method 10	84 lb/MMscf; 44.40 ton/yr	0.29 lb/MMscf 0.04 ton/yr			
EP 03-02	None	NO_x	401 KAR 51:017	Retest of CMN 20230006	Method 7	0.12 lb/MMBtu; 122.14 lb/MMscf; 64.51 ton/yr	0.05 lb/MMBtu; 61.86 lb/MMscf; 18.06 ton/yr	36,345 scfh	CMN20230010	8/1/2023
		CO			Method 10	84 lb/MMscf; 44.40 ton/yr	0.29 lb/MMscf 0.04 ton/yr			
EP 03-04	Wet Scrubber (C0304)	PM (filterable)	401 KAR 51:017	Initial; Annual	Method 5	0.005 gr/dscf; 3.72 lb/hr;	0.0023 gr/dscf; 0.93 lb/hr;	230 ton/hr	CMN20240007	12/5/2024

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput & Operating Parameter(s) Established During Test	Activity Graybar	Date of Compliance Testing
						16.28 ton/hr	4.07 ton/hr			
		PM_{10}			Methods 201A/202	0.005 gr/dscf; 3.28 lb/hr; 14.36 ton/hr	0.0023 gr/dscf; 0.93 lb/hr; 4.07 ton/hr			
		$PM_{2.5}$			Methods 201A/202	0.0025 gr/dscf; 1.40 lb/hr; 6.13 ton/yr	0.0023 gr/dscf; 0.93 lb/hr; 4.07 ton/hr			
		VOC			Method 25	1.70 lb/hr; 5.83 ton/yr	0.66 lb/hr; 2.87 ton/yr			
EP 04-02	None	NO_x	401 KAR 51:017	Initial	Method 7	160 lb/MMscf; 51 ton/yr	88.4 lb/MMscf; 7.7 ton/yr	20478 MMscf/hr	CMN20240001	1/23/2024
EP 05-01	None	NO_x	401 KAR 51:017	Initial	Method 7	0.08 lb/MMBtu; 81.6 lb/MMscf; 64.48 ton/yr	0.066 lb/MMBtu; 36.87 lb/MMscf; 22.91 ton/yr	142821 scfh[1]	CMN20230005	6/1/2023
		CO	401 KAR 51:017	Initial	Method 10	84 lb/MMscf; 66.36 ton/yr	9.61 lb/MMscf; 5.60 ton/yr			6/1/2023
EP 05-01	None	NO_x	401 KAR 51:017	Retest of CMN20230005	Method 7	0.08 lb/MMBtu; 81.6 lb/MMscf; 64.48 ton/yr	0.04 lb/MMBtu; 73.49 lb/MMscf; 17.48 ton/yr	60437scfh	CMN20230011	8/1/2023
		CO			Method 10	84 lb/MMscf;	17.8 lb/MMscf;			

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput & Operating Parameter(s) Established During Test	Activity Graybar	Date of Compliance Testing
						66.36 ton/yr	4.19 ton/yr			
EP 18-03	Booth Filter and RTO	PM (filterable)	401 KAR 51:017	Initial & 5 years	Methods 201A/202	0.51 lb/hr; 2.24 ton/yr	0.27 lb/hr	10 gal/hr	CMN20250001	4/24/2025
		PM_{10}			Methods 201A/202	0.53 lb/hr; 2.30 ton/yr	0.27 lb/hr			
		$PM_{2.5}$			Methods 201A/202	0.53 lb/hr; 2.30 ton/yr	0.27 lb/hr			
EP 18-03 & EP 18-05	RTO	VOC DRE	401 KAR 51:017	Initial & 5 years	Method 25A	98%; 5.52 lb/hr; 24.20 ton/yr	0.19 lb/hr	10 gal/hr	CMN20250001	4/24/2025
		VOC Capture			Method 204	100%	100%			

Footnotes:
Note 1: Gas usage data was not accurate.
Note 2: Modification was made after the testing.

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
1,750,000 tons of steel/yr; rolling 12-month	401 KAR 51:017	EP 01-01
3% Opacity	40 CFR 60.272a(a)(2)	Baghouse Stack (C0101) including: EPs 01-01, 01-02, 01-03 (alloy addition), 01-04, 01-08, 01-09, 01-10, 02-01, 02-03, 02-04, 02-05, 02-06, 08-04
0.0052 gr/dscf	40 CFR 60.272a(a)(1); 40 CFR 63.10686(b)(1)	
0.0018 gr/dscf; 25.49 lb/hr; 111.64 tons/yr of PM (filterable)	401 KAR 51:017	
0.0052 gr/dscf; 73.64 lb/hr; 322.53 tons/yr of PM_{10}	401 KAR 51:017	
0.0034 gr/dscf; 48.15 lb/hr; 210.88 tons/yr of $PM_{2.5}$	401 KAR 51:017	
1.98 lb/ton; 495 lb/hr (30-day rolling avg.); 1,733 ton/yr for CO	401 KAR 51:017	
0.42 lb/ton; 104 lb/hr (30-day rolling avg.); 363.8 ton/yr for NO_x	401 KAR 51:017	
0.35 lb/ton; 86.63 lb/hr (30-day rolling avg.) 303.2 ton/yr for SO_2	401 KAR 51:017	
0.09 lb/ton; 77.96 tons/yr of VOC	401 KAR 51:017	

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Points
401 KAR 51:017, *Prevention of significant deterioration of air quality,* applies to the construction of a new major stationary source that commences construction after September 22, 1982, and located in an area designated attainment.	EPs 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-07, 01-08 A&B, 01-09, 01-10, 02-01, 02-03, 02-04, 02-05, 02-06, 03-01, 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-10, 03-11 04-01, 04-02, 04-03, 04-04, 04-05, 04-06, 05-01, 05-03, 06-01, 06-02, 06-03, 06-04, 06-05, 08-01, 08-02, 08-03, 08-04, 09-01, 09-02, 09-04, 09-05, 09-06, 09-07, 09-08, 09-09, 10-01, 10-02, 10-03, 10-04, 10-08, 10-09, 11-06, 11-07, 13-01, 12-01, 12-02, 12-03, 12-04, 14-01, 14-02, 17-01 A&B, 17-02, 18-01, 18-02, 18-03, 18-05

Applicable Regulations	Emission Points
401 KAR 59:010, *New process operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.	EPs 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-07, 01-08 B, 01-09 A&B, 01-10, 01-11, 01-12, 02-01, 02-03, 02-04, 02-05, 02-06, 03-01, 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-10, 03-11, 04-01, 04-03, 04-04, 04-05, 04-06, 05-01, 05-03, 06-01, 06-02, 06-03, 06-04, 06-05, 08-04, 09-01, 09-02, 09-04, 09-05, 09-06, 09-07, 09-08, 09-09, 12-04, 17-01 A&B, 17-02, 18-02, 18-03
401 KAR 59:015, *New indirect heat exchangers,* applies to each indirect heat exchanger having a heat input capacity greater than one (1) million BTU per hour (MMBTU/hr) commenced on or after April 9, 1972.	EP 04-02, 13-01
401 KAR 59:225, *New miscellaneous metal parts and products surface coating operations,* applies to each affected facility commenced on or after June 24, 1992 which is part of a major source located in a county or portion of a county designated attainment for ozone in 401 KAR 51:010.	EP 18-02, 18-03
401 KAR 60:005, Section 2(1), 40 C.F.R. 60.1 through 60.19, Table 1 (Subpart A), *General Provisions,* specifically, the requirement to develop and implement a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. The SSM plan shall meet the requirements in 40 CFR 63.6(e)(3). This plan must be developed by the owner or operator before startup of the EAF.	EPs 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-07, 01-08 B, 01-09 A&B, 01-10, 01-11, 01-12, 02-01, 02-03, 02-04, 02-05, 02-06, 08-04
401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,* applies to each steam generating unit for which construction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).	EP 13-01

Applicable Regulations	Emission Points
401 KAR 60:005, Section 2(2)(jj), 40 C.F.R. 60.270a through 60.276a (Subpart AAa), *Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983, and On or Before May 16, 2022*, applies to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems that commences construction, modification, or reconstruction after August 17, 1983.	EPs 01-01 & 01-07
401 KAR 60:005, Section 2(2)(dddd), **40 C.F.R. 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII)**, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,* applies to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in 40 CFR 60.4200(a)(1) through (4). For the purposes of 40 CFR 60, Subpart IIII, the date that construction commences is the date the engine is ordered by the owner or operator.	EPs 10-01, 10-02, 10-03, 10-04, 10-08, 10-09
401 KAR 60:005, Section 2(2)(eeee), 40 C.F.R. 60.4230 through 60.4248, Tables 1 through 4 (Subpart JJJJ), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines,* applies to owners and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in 40 CFR 60.4230(a)(1) through (6). For the purposes of 40 CFR 60, Subpart JJJJ, the date that construction commences is the date the engine is ordered by the owner or operator.	EPs 11-06 & 11-07
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* applies to each new stationary RICE located at a major or area source of HAP emissions.	EPs 10-01, 10-02, 10-03, 10-04, 10-08, 10-09, 11-06 & 11-07
401 KAR 63:002, Section 2(4)(aaaaa), 40 C.F.R. 63.10680 to 63.10692, Table 1 (**Subpart YYYYY**), *National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities,* applies to each electric arc furnace (EAF) steelmaking facility that is an area source of hazardous air pollutant (HAP) emissions.	EPs 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-07, 01-08 B, 01-09 A&B, 01-10, 01-11, 01-12, 02-01, 02-03, 02-04, 02-05, 02-06, 08-04
401 KAR 63:010, *Fugitive emissions*, applies to each apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.	EPs 01-08A, 06-01, 06-03, 06-05, 08-01, 08-02, 08-03, 12-01, 12-02, 12-03, 14-01, 14-02
401 KAR 63:020, *Potentially hazardous matter or toxic*	EPs 03-01, 03-02, 03-03,

Applicable Regulations	Emission Points
substances, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.	03-04, 03-05, 03-06, 03-10, 03-11, 04-01, 04-02, 04-03, 04-04, 04-05, 05-01, 05-03, 18-01, 18-02, 18-03, 18-05
40 CFR 64, *Compliance Assurance Monitoring,* applies to the capture system and PM control device for EU 01, EU 02, and EP 08-04 required by 40 CFR 63, Subpart YYYYY. The exemption in 40 CFR 64.2(b)(1)(i) for emissions limitations or standards proposed after November 15, 1990, under section 111 or 112 of the CAA does not apply. Also applies to other EPs based on the following: 1. The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR 64.2(b)(1); 2. The unit uses a control device to achieve compliance with any such emission limitation or standard; and 3. The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.	EPs 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-07, 01-08, 01-09, 01-10, 02-01, 02-03, 02-04, 02-05, 02-06, 08-04, 04-01, 18-03

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Points
401 KAR 63:002, Section 2(4)(j), 40 C.F.R. 63.400 through 63.407, Table 1 (Subpart Q), *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers,* precluded by prohibiting the use of chromium-based water treatment chemicals in the cooling towers.	EPs 09-01, 09-02, 09-04, 09-05, 09-06, 09-07, 09-08, 09-09

Table D - Summary of Non-Applicable Regulations:
N/A

Air Toxic Analysis
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*
The Division for Air Quality (Division) has determined based upon the use of natural gas and other pertinent information provided by the applicant that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination
N/A

SECTION 5 – COMPLIANCE ASSURANCE MONITORING

40 CFR 64, *Compliance assurance monitoring* (CAM) applies to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR 64.2(b)(1);

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

Emission Unit	Criteria 1 (Y/N)	Criteria 2 (Y/N)	Criteria 3 (Y/N)	Does CAM apply? If Y for criteria 1, 2, AND 3, then Yes, Otherwise, No.
01-01	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-02	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-03	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-04	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-07	N	Y	N	No
01-08B	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-09A	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-09B	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
01-10	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
02-01	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
02-03	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
02-04	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
02-05	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
02-06	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
03-04	Y	Y	N	No
03-06	Y	Y	N	No
03-10	Y	Y	N	No
04-01	Y	Y	Y	Yes
04-04	Y	Y	N	No
05-03	Y	Y	N	No
06-01	Y	Y	N	No
06-02 A, B & C	Y	Y	N	No

Emission Unit	Criteria 1 (Y/N)	Criteria 2 (Y/N)	Criteria 3 (Y/N)	Does CAM apply? If Y for criteria 1, 2, AND 3, then Yes, Otherwise, No.
06-03	Y	Y	N	No
06-04	Y	Y	N	No
06-05	Y	Y	N	No
08-04	Y	Y	Y	Yes – Required by 40 CFR 63, Subpart YYYYY
09-01	Y	Y	N	No
09-02	Y	Y	N	No
09-04	Y	Y	N	No
09-05	Y	Y	N	No
09-06	Y	Y	N	No
09-07	Y	Y	N	No
09-08	Y	Y	N	No
09-09	Y	Y	N	No
12-04	Y	N	N	No
18-02	Y	Y	N	No
18-03	Y	Y	Y	Yes
18-05	Y	Y	N	No

* If Yes, CAM applies for any of the emission units above, then see further clarification for each listed emission unit in **Section 3**.

**Only Emission Points with control devices are listed in this table. If the unit does not have a control device, it is not listed here.

SECTION 6 – PERMITTING HISTORY

Permit	Permit Type	Activity #	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-20-001	Initial	APE20190004	1/24/2020	7/23/2020	Initial PSD Permit	PSD
V-20-001 R1	Sig Revision	APE20220003	3/21/2022	10/27/2022	Changes to PSD/design changes and addition of a Blast and Prime Line and other Support Equipment	PSD
V-20-001 R2	Sig Revision	APE20240001	4/3/2024	6/20/2024	Changes to PSD/design changes and addition of Ingot Grinding & Cutting Equipment, Emergency Generator, and update to paved & unpaved roads	PSD

SECTION 7 – PERMIT APPLICATION HISTORY

N/A

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS – Ambient Air Quality Standards
BACT – Best Available Control Technology
Btu – British thermal unit
CAA – Clean Air Act
CAM – Compliance Assurance Monitoring
CEM – Continuous Emission Monitoring
CI – Compression Ignition
CO – Carbon Monoxide
CO_2e – Carbon Dioxide Equivalent
Division – Kentucky Division for Air Quality
EAF – Electric Arc Furnace
ESP – Electrostatic Precipitator
GCOP – Good Combustion & Operating Practices
GDF – Gasoline Dispensing Facility
GHG – Greenhouse Gas
GWP – Good Work Practices
HAP – Hazardous Air Pollutant
HF – Hydrogen Fluoride (Gaseous)
HP – Horse Power
LMF – Ladle Metallurgical Furnace
MSDS – Material Safety Data Sheets
mmHg – Millimeter of mercury column height
NAAQS – National Ambient Air Quality Standards
NESHAP – National Emissions Standards for Hazardous Air Pollutants
NO_x – Nitrogen Oxides
PM – Particulate Matter
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
RICE – Reciprocating Internal Combustion Engine
SEN – Submerged Entry Nozzle
SER – Significant Emission Rate
SI – Spark Ignition
SO_2 – Sulfur Dioxide
SSM – Startup, Shutdown, & Malfunction
TDS – Total Dissolved Solids
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds
MMBtu/hr – million BTU per hour

APPENDIX B – INDIRECT HEAT EXCHANGER EMISSIONS LIMITATIONS

EP	Fuel	Capacity (MMBtu/hr)	Construction Date	Notes/ Removal Date	Basis for PM Limit	Total Heat Input Capacity for PM Limit (MMBtu/hr)	Basis for SO_2 Limit	Total Heat Input Capacity for SO_2 Limit (MMBtu/hr)
04-02	Natural Gas	74.23	2022	Was included in the 2020 application with EP 13-01, and is therefore incl. in the total heat input capacity for both units	Section 4(1)(c)	103.23	Section 5(1)(c)2.	103.23
13-01	Natural Gas	29	2020	N/A	Section 4(1)(c)	103.23	5(1)(c)2.	103.23