ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM

May 29, 2025

SUBJECT: Universal Stainless & Alloy Products, Inc.
600 Mayer Street
Bridgeville, PA 15017
Allegheny County

Title V Operating Permit No. 0027-OP25

TO: JoAnn Truchan, P.E.
Program Manager, Engineering

FROM: Reihaneh Etemadi
Air Quality Engineer

FACILITY DESCRIPTION:

Universal Stainless & Alloy Products, Inc. - Bridgeville plant (USAP – Bridgeville) produces specialty steel products in the form of long products and flat rolled products including certain grades of electro-slag remelted steels (ESR) and vacuum-arc remelted (VAR) steels. The semi-finished long products are primarily used by the facility's customers to produce finished bar, rod, and wire products, and the semi-finished flat rolled products are used by customers to produce fine-gauge plate, sheet, and strip products. The finished bar products manufactured by the facility are primarily used by original equipment manufacturers and by service center customers for distribution to a variety of end users. The facility is composed of one (1) electric arc furnace, one (1) argon-oxygen decarburization vessel, three (3) electro-slag reduction furnaces, one (1) hot rolling mill, and associated reheat and annealing furnaces.

The facility is a major source of carbon monoxide (CO), nitrogen oxides (NO_X), and particulate matter (PM), and is a minor source of particulate matter < 10 microns (PM_{10}), particulate matter < 2.5 microns ($PM_{2.5}$), sulfur oxides (SO_X), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs), as defined in Section 2101.20 of Article XXI. The facility is also a major source of greenhouse gas emissions (CO_2e) as defined in the U.S. EPA Greenhouse Gas Tailoring Rule.

OPERATING PERMIT DESCRIPTION:

This is a Title V renewal for Universal Stainless & Alloy Products, Inc. (USAP), located in Bridgeville, Allegheny County. The last operating permit was issued on November 21, 2017 and was amended on February 20, 2020 following RACT II review. This renewal permit will incorporate the following changes since the issuance of the last permit:

1. A 60 kW (~ 204,728 Btu/hr) Spectrum Detroit Diesel emergency generator is located at the Melt Shop. The generator was installed in 2008. The manufacture date is March 2002. This source is added to the sources of insignificant emissions in the permit.

2. The facility operates three (3) Belchfire EX torches in the ESR building. The torches are used to preheat electrodes prior to use in the ESR furnaces. Each torch is a natural gas-fired 1.4 MMBtu/hr torch. A request for determination was received by the department on May 5, 2017, regarding the installation of these torches. These torches are included in the sources of insignificant emissions.

3. The facility operates a second 3.0 MMBtu/hr car bottom furnace in addition to 4.0 MMBtu/hr electro-slag remelt holding furnace – car bottom furnace type, which is included in the current Title V operating permit. A request for determination was received by the department on June 28, 2012 regarding the installation of this furnace.

4. The current Title V operating permit includes five (5) cooling towers: Melt Shop Cooling Tower, three Electro-Slag Remelt (ESR) Furnace Cooling Towers, and the VAR Furnace Cooling Tower. The Melt Shop Cooling Tower was replaced in 2021 with an Evapco Model #TZ20466 unit. The VAR Cooling Tower was replaced in 2019 with a Baltimore Air Company unit.

5. Monitoring parameters were added for the Melt Shop Baghouse (fan amperage range) and the Electro-Slag Remelt Furnace Baghouse (pressure drop).

6. The following equipment was moved to Sources of Minor Significance due to their low emission rate: Gantry Grinders, Western Gear Billet Grinder, and Midwest Grinders.

PERMIT APPLICATION COMPONENTS:

1. Title V Operating Permit #0027 issued November 21, 2017 and amended February 20, 2020.
2. Title V Operating Permit Renewal application #0027, dated May 20, 2022.
3. Installation Permit #0027-I002, issued April 17, 2001. (Western Gear Billet Grinder and Baghouse – P019)
4. Installation Permit #0027-I005, issued October 24, 2007. (Bloomer Reheat Furnaces No. 13 & No. 21 – P012)
5. Installation Permit #0027-I006, issued November 2, 2007. (Ingot Hood Annealing Furnace CP-5, Hood Annealing Furnaces 11, 12 & 13, and Bar Product Annealing Furnace BAR-1 – P011)
6. Installation Permit #0027-I007, issued April 24, 2009. (Annealing Furnaces CLM2 and Hood Furnace No. 14 – P011)
7. Installation Permit #0027-I010, issued July 11, 2017. (EAF – P001)
8. Correspondence received on January 17, 2023, from USAP – Bridgeville in response to the department questions on the renewal application package including the revised calculation sheets.
9. Correspondence received on January 16, 2024, from USAP – Bridgeville regarding new equipment Installation.
10. Correspondence received on September 6, 2024, regarding baghouse differential pressures and fan motor amperage.
11. Correspondence received on September 6, 2024, regarding USAP TV Renewal Application Modifications.
12. Correspondence received on September 13, 2024, regarding baghouse differential pressures.
13. Correspondence received on September 20, 2024, regarding Electric Arc Furnace and Melt Shop Baghouse TVOP Application Addendum.
14. Correspondence received on October 1, 2024, regarding the revised pressure drop range for Western Gear Billet Grinder Baghouse.

EMISSION SOURCES:

Emissions Sources

I.D.	Source Description	Control Device(s)	Maximum Capacity	Fuel/Raw Material	Stack I.D.
P001	Electric Arc Furnace	Melt Shop Baghouse	23.14 TPH 175,200 TPY	Steel Scrap, Limestone, Alloy Elements	S001
P002	Argon-Oxygen Decarburization (AOD) Vessel	Melt Shop Baghouse	25.1 TPH 175,200 TPY	Molten Steel, Scrap Steel, Alloy Elements, Flux	S001
P003	Teeming Ladle Heaters (2)	None	17.8 MMBtu/hr	Natural Gas	S001
P005	Teeming	Melt Shop Baghouse	60 TPH 175,200 TPY	Molten Steel	S001
P006	Electro-Slag Remelt Holding Furnaces (2)	None	7.0 MMBtu/hr	Natural Gas	N/A
P007	Electro-Slag Remelt Furnaces	ESR Baghouse	7 TPH 61,320 TPY	Alloy, Steel Ingots, Slag	S002
P010	Hot Rolling/Blooming Mill	None	104,000 TPY	Alloy, Steel Ingots	N/A
P011	Annealing Furnaces	Low NO_X Burners	25 units (184.34 MMBtu/hr)	Natural Gas	N/A

I.D.	Source Description	Control Device(s)	Maximum Capacity	Fuel/Raw Material	Stack I.D.
P012	Reheat Furnaces	Low NO_X Burners	19 units (187.2 MMBtu/hr)	Natural Gas	N/A
P018	Plate Warming Furnace	None	7.0 MMBtu/hr	Natural Gas	N/A
P023	AOD Relining Heater	Melt Shop Baghouse	8.9 MMBtu/hr	Natural Gas	S001
P024	Transfer Ladle Heater	None	8.9 MMBtu/hr	Natural Gas	S001
G001	Circulating Water Cooling Towers (5)	Mist Eliminators	Melt Shop – 2,800 gpm; ESR towers – 834 gpm, each; VAR tower – 500 gpm	Municipal Water	N/A
B001	Miscellaneous Space Heaters (112 units)	None	13.53 MMBtu/hr Total units	Natural Gas	N/A
F002	Plant Roads	Wet Suppression; Chemical Treatment; Paved Road Sweeping	N/A	N/A	N/A

Sources of Minor Significance and/or Trivial Processes or Activities

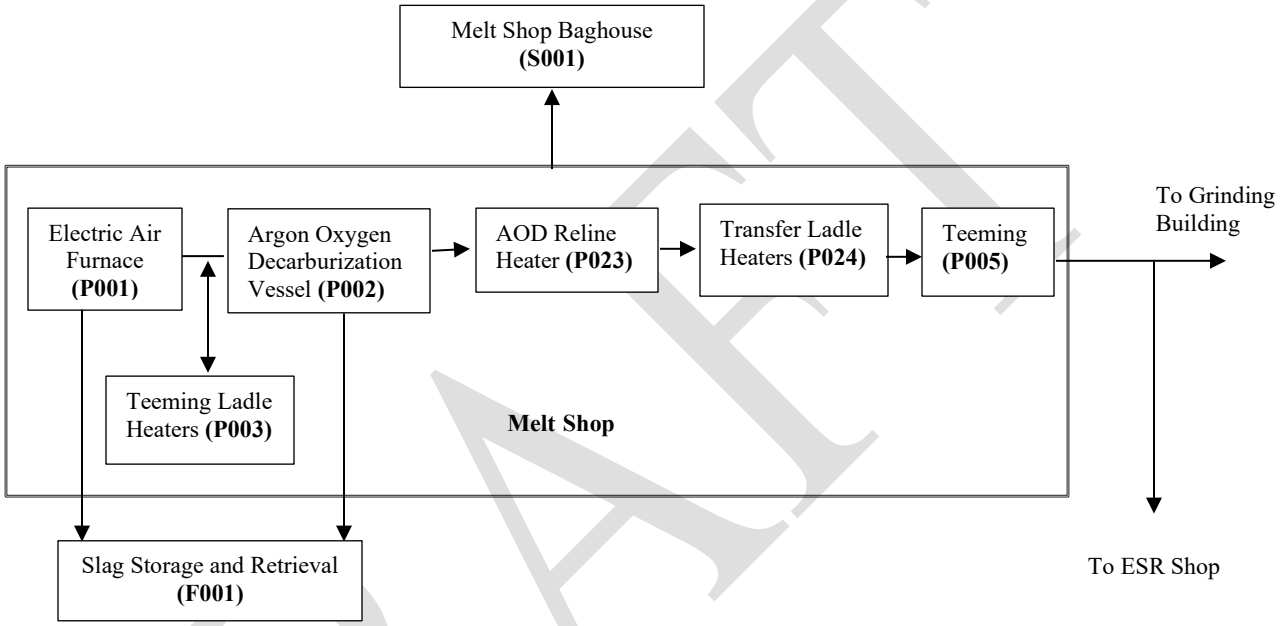
I.D.	Source Description	Basis
P013	Two (2) units Gantry Grinders with Integral Particulate Control Device	Emissions are insignificant.
P015	Four (4) units and one (1) spare unit Midwest Grinders with Grinding Building Baghouse	Emissions are insignificant.
P019	Western Gear Billet Grinder with Western Gear Grinder Baghouse	Emissions are insignificant.
P020	Pangborn ES-1850 Crucible Cleaning System with PC02-4 Pangborn Cartridge Collector	Emissions are insignificant.
P021	CONSARC Vacuum Arc Remelt (VAR) Furnace	Electric furnace where steel is melted under vacuum. Emissions are insignificant.
P022	Vulcan Ingot-End Grinder equipped with a Dust Collector	Emissions are insignificant.
ACHD No. 5	Three (3) electrically heated laboratory ovens in sample preparation area	No emissions of air contaminants.

I.D.	Source Description	Basis
ACHD Nos. 17, 18, and 21	Plant maintenance and vehicle repair facilities (general repairs, welding, non-solvent cleaning, and metal cutting)	Plant maintenance and upkeep activities (listed trivial activity); Emissions are insignificant.
ACHD No. 20	Hand-held equipment for occasional surface grinding or surface finishing of steel products to remove surface imperfections	Hand-held equipment for grinding of metal (listed trivial activity); Emissions are insignificant.
ACHD Nos. 39, 40, and 41	Bench-scale laboratory equipment for chemical analysis of steels / (4) electrically operated element analyzers	Bench-scale laboratory equipment (listed trivial activity); Emissions are insignificant.
ACHD No. 42	Sampling equipment to withdraw and prepare specimens for analysis: (5) sample saws (2) sample drill presses (7) belt sanders (1) grinder wheel unit (2) wet surface grinders (3) metallographic wet sample polishers (2) sample-machining lathes	Bench-scale laboratory equipment (listed trivial activity); Emissions are insignificant.
D002	Diesel Storage Tank (1,000-gallon capacity)	Emissions are insignificant.
D003	Diesel Storage Tank (300-gallon capacity)	Emissions are insignificant.
D004	Waste Oil Tank (1,000-gallon capacity)	Emissions are insignificant.
D005	Quench Tank for Clam Shell Furnace Bar or Plate	Emissions are insignificant.
DG001	Cold Degreaser Tub (250-gallon capacity)	Emissions are insignificant.
-	ESR Stub Welding	Emissions are insignificant.
-	Transfer Ladle/Vessel Warming Torches	Emissions are insignificant.
-	Wet Abrasive Cut-off Saw	Emissions are insignificant.
-	Acid Etching of Laboratory Samples	Emissions are insignificant.
-	Spectrum Detroit Diesel 3-Phase 60 kw Emergency Generator	Emissions are insignificant.
-	Electro Slag Remelt Preheat Belchfire Torches (3)	Emissions are insignificant.
E001	Lime Storage Silo	Emissions are insignificant.
F001	Melt Shop Slag Pile	Emissions are insignificant.

METHOD OF DEMONSTRATING COMPLIANCE:

Methods of demonstrating compliance with the emission standards set in this permit are summarized below. See Operating Permit #0027-OP25 for the specific conditions for determining compliance with the applicable requirements. Compliance with the short-term (lb/hr) limits must be maintained at all times, including startup and shutdown, unless explicitly stated otherwise in the permit. Any emissions due to startup and/or shutdown are included in the facility's total annual emissions.

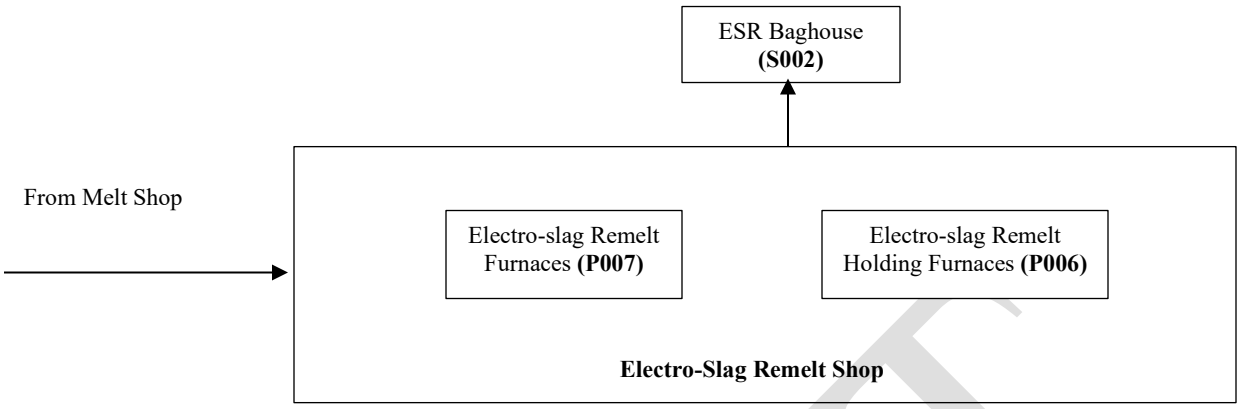
Melt Shop



The permittee shall perform emission tests for exhaust gas PM/PM_{10} concentrations and equivalent emission rates (lb/hr), CO, and VOC emission rates (lb/hr) at the Melt Shop Baghouse to demonstrate compliance with the EAF and AOD Vessel emission limitations of this permit. Such testing shall be conducted in accordance with applicable U.S. EPA approved test methods, Article XXI §2108.02, and as approved by the Department. During the emission tests, the differential pressure drop across each baghouse compartment and the amperage for each fan motor shall be monitored and recorded on a continuous basis. In addition, the time of each charge, melt, and tap shall be recorded and reported during the tests. The testing shall be repeated at least once every five years from the date of the prior valid test.

The permittee shall conduct an inspection on the Melt Shop Baghouse once per week and check and record the fan motor amperes for the emission control system on a once-per-shift basis. The permittee shall, at all times, have instrumentation to continuously monitor the differential pressure drop across each compartment of the Melt Shop Baghouse during operation of the EAF. Such instrumentation shall measure the pressure drop to within ½" w.c. and be properly operated, calibrated, and maintained according to manufacturer's specifications.

Electroslag Remelt (ESR) Shop



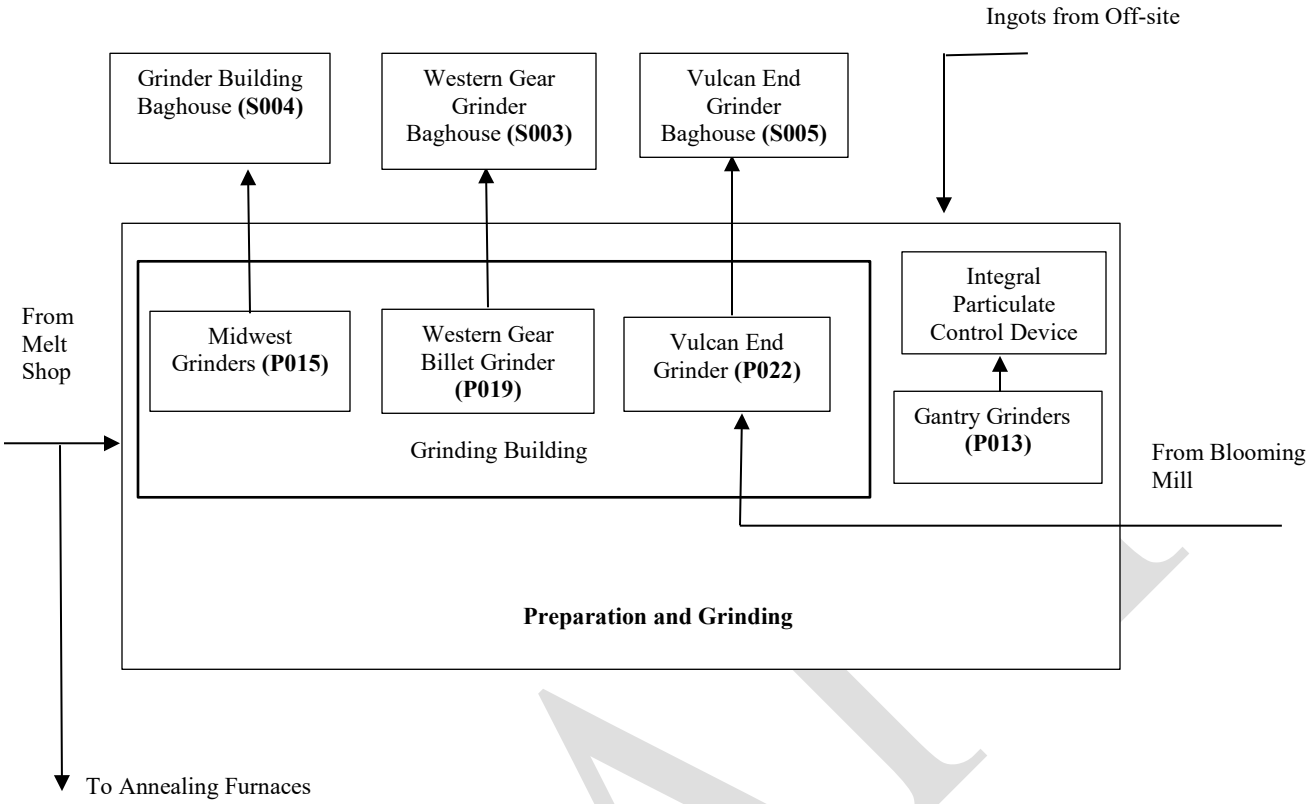
The permittee shall conduct an inspection on the Electro-Slag Remelt Furnaces Baghouse once per week and check and record the fan motor amperes for the emission control system on a once-per-shift basis. Instrumentation shall continuously monitor the differential pressure drop across each compartment of the baghouse during operation of the Electro-Slag Remelt Furnaces. Such instrumentation shall measure the pressure drop to within ½" w.c. and be properly operated, calibrated, and maintained according to manufacturer's specifications.

Preparation and Grinding

The permittee shall conduct weekly visual inspections of the Gantry Grinders Exhaust Systems and Integral Dust Collectors to ensure the equipment appears to be operating properly and that the integrity of the control equipment exhaust systems is not compromised by damage, malfunction, or deterioration.

The permittee shall conduct an inspection on the Grinding Building Baghouse once per week and check and record the fan motor amperes for the emission control system on a once-per-shift basis. The permittee shall, at all times, have instrumentation to continuously monitor the differential pressure drop across each compartment of the Grinding Building Baghouse during operation of the shop. Such instrumentation shall measure the pressure drop to within ½" w.c. and be properly operated, calibrated, and maintained according to manufacturer's specifications.

The permittee shall conduct an inspection on the Western Gear Billet Grinder Baghouse once per week and check and record the fan motor amperes for the emission control system on a once-per-day basis. The permittee shall, at all times, have instrumentation to continuously monitor the differential pressure drop across each compartment of the Western Gear Billet Grinder Baghouse during operation of the shop. Such instrumentation shall measure the pressure drop to within 2% of the measuring span of the device and be properly operated, calibrated, and maintained according to manufacturer's specifications.



Slag Handling and Storage

Notations of visible emissions from steel slag handling and storage shall be performed once-per-shift during normal daylight operations. A trained employee shall record whether any emissions are observed and whether these emissions extend beyond the facility property line.

EMISSION CALCULATIONS

Details of calculations are included in the attached calculation sheet.

B001: Space Heaters

Fuel:	Natural Gas
Rating Capacity:	13.525 MMBtu/hr
Hours of Operation:	8,760 hrs/yr
Fuel Rating:	1,020 Btu/CF
Maximum Fuel Consumption:	116.16 MMCF/yr

Total Emissions – B001 Space Heaters

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM	8.7	0.51
PM_{10}	8.7	0.51
$PM_{2.5}$	8.7	0.51
SO_X	0.6	0.035
NO_X	100	5.81
VOC	5.3	0.31
CO	20	1.16

Emissions are calculated using combustion emission factors from EPA WebFIRE for SCC10500106. The PM emission factor is for filterable plus condensable particles.

E001: Lime Storage Silo

Maximum Throughput: 13,140 TPY

Maximum lime usage is based on EAF production ratio of 150 lbs of lime per ton of steel melted and 175,200 tpy maximum steel melted.

Pollutant	Emission Factor (lbs/ton)	Annual Emissions (TPY)
PM	0.02	1.31
PM_{10}	0.10	0.66
$PM_{2.5}$	0.02	0.13

F001: Melt Shop Slag Processing, Storage, and Handling

Slag Storage and Retrieval

Emissions from this process are calculated using the equation from USEPA AP-42, Section 13.2.4:

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \quad (lb/ton)$$

where

E = Emission Factor
k =particle size multiplier (dimensionless)
U= mean wind speed (mph)
M =material moisture content (%)-

The table below shows the values for k based on the particle size:

Aerodynamic Particle Size Multiplier (k)				
< 30 µm	< 15 µm	< 10 µm	< 5 µm	< 2.5 µm
0.74	0.48	0.35	0.20	0.053

The value of *U* is assumed to be 5 mph based on best engineering judgment. The value of M, 0.920 is derived from USEPA AP-42, Table 13.2.4-1.

Throughput: 150 tons/day
Operating days: 250 days/yr

Pollutant	Emission Factor (lbs/ton)	Annual Emissions (TPY)
PM	0.007	0.13
PM_{10} [1]	0.003	0.06
$PM_{2.5}$ [2]	0.0005	0.01

[1] PM_{10} = 1/2 of TSP as per USEPA AP-42, Table 11.19.2-2, Note c.
[2] Per AP-42, Chapter 13.2.4.3, $PM_{2.5}$ is 14% of PM_{10}.

Slag Pile Processing

Front-end loader (HDDV) Annual Vehicle Milage: 500

Pollutant	Emission Factor (lbs/VMT)	Annual Controlled Emissions (TPY)
PM	14	2.63
PM_{10}	7.6	1.43
$PM_{2.5}$	2.7	0.20

Emission Factors are taken from AP-42, Chapter 12.5, Table 12.5-4.
Emissions are controlled by fixed water spray units with control efficiency of 25%.
Since the slag pile is located indoors, wind erosion is not applicable.
Total annual emissions from Melt Shop Slag Processing, Storage, and Handling are summarized in the following table:

Total Emissions – F001 Slag Storage & Retrieval

Pollutant	Total Emissions (TPY)
PM	2.76
PM_{10}	1.49
$PM_{2.5}$	0.21

F002: Plant Roads

Vehicle Type	Unpaved Miles Driven	Paved Miles Driven
LDDV	0	0
LDGV	0	0
HDDV	2,250	20,250

Emission Factors are derived from USEPA AP-42, chapter 12.5 Iron and Steel Production, Table 12.5-4: Uncontrolled Emission Factors for open-dust sources at iron and steel mills.

Operation	Emission Factors lbs/VMT		
	PM	PM_{10}	$PM_{2.5}$
Vehicle travel on unpaved roads – light duty vehicle	1.8	1.0	0.36
Medium duty vehicle	7.3	4.1	1.5
Heavy duty vehicle	14	7.6	2.7
Vehicle travel on paved roads – Light/heavy vehicle mix	0.78	0.44	0.15

The particulate emissions are controlled by water spray and sweeping for paved roads. The corresponding control efficiencies are 25% and 10%, respectively. For unpaved roads, emissions are controlled by water spray truck and chemical dust suppressant application with control efficiencies of 50% and 59%, respectively.

Total annual controlled emissions from roads are as follows:

Total Emissions – F002 Plant Roads

Pollutant	PM	PM_{10}	$PM_{2.5}$
Total Road Emissions (TPY)	8.56	4.76	1.65

Emergency Generator (Source of Minor Significance)

Backup Generator
Manufacturer: Spectrum Detroit Diesel
Model: 60DSEJ
Serial No.: 0728741
Fuel Type: Ultra-low Sulfur Diesel
Manufacture Date: 3/2002
RPM: 1800
Capacity: 60 kW, 80.46 hp, 0.205 MMBtu/hr
Annual Hours of Operation: 500 hrs/yr

Pollutant	Emission Factor (lbs/hp-hr)	Annual Emissions (TPY)
PM	2.20E-03	0.044
PM_{10}	2.20E-03	0.044
$PM_{2.5}$	2.20E-03	0.044
SO_X	2.05E-03	0.04
NO_X	3.10E-02	0.62

Pollutant	Emission Factor (lbs/hp-hr)	Annual Emissions (TPY)
VOC	2.51E-03	0.05
CO	6.68E-03	0.13

HAP Pollutant	Emission Factor (lb/MMBtu)	Annual Emissions (TPY)
Formaldehyde	1.18E-03	0.0002
Benzene	9.33E-04	0.0002
Toluene	4.09E-04	0.0001
Xylene	2.85E-04	0.0001
Propylene	2.58E-04	0.0001
1,3-Butadiene	3.91E-05	0.00001
Acetaldehyde	7.67E-04	0.0002
Acrolein	9.25E-05	0.0000
Total HAPs	3.96E-03	0.0008

Emission factors are from EPA AP 42 Table 3.3-1.

G001: Cooling Towers

Cooling Tower	Re-circulation Rate (gal/min)	Drift Factor (lbs/10^3 gal)	Drift Rate (lbs/min)	Maximum TDS (mg/l)	PM Hourly Emissions (lb/hr)	PM Annual Emissions (tons/yr)
Melt Shop Cooling Tower	4,200	1.7	7.14	2450	1.31	5.75
ESR Cooling Tower #1	834	1.7	1.42	2600	0.28	1.21
ESR Cooling Tower #2	834	1.7	1.42	2600	0.28	1.21
ESR Cooling Tower #3	834	1.7	1.42	2600	0.28	1.21
VAR Cooling Tower #1	1,000	1.7	1.7	2350	0.30	1.31
Total					2.44	10.69

Drift factor is derived from AP-42, Table 13.4-1.

P001: Electric Arc Furnace

Process Description:	Electric Arc Furnace (EAF)
Facility ID:	P001
Production Rate:	23.14 tons steel per hour
Max. Production Capacity:	175,200 tons per year
Raw Materials:	Steel Scrap, Limestone, Alloying Elements
Control Device:	Melt Shop Baghouse
Capture Efficiency:	99%
Control Efficiency:	98.33%
Stack I.D.:	S001

Total Emissions – P001 Electric Arc Furnace

Pollutant	Emission Factor (lb/ton)	Annual Emissions (TPY)
PM [1](filterable)	11.3	26.26
PM_{10} [1] (filterable)	6.55	15.2
$PM_{2.5}$ [2]	0.655	1.52
SO_X [1]	0.07	6.13
NO_X [1]	0.2	17.52
VOC [1]	0.35	30.66
CO [3]	0.72	63.07

[1] Emission Factors are derived from EPA WebFIRE, for SCC 30300904: Industrial Processes; Primary Metal Production; Steel Manufacturing; Electric Arc Furnace: Alloy Steel (Stack).

[2] Emission factor taken from ACHD reference - $PM_{2.5}$ = 10% of PM_{10}.

[3] As per ACHD letter dated 12/15/98, testing was conducted for CO emissions by the fabric filter inlet containing the combined captured exhaust gases from the EAF and AOD on 10/25 & 10/26/95. Review of these tests by the Department during this review suggest 20% (0.6 lb/ton) of the emissions are attributed to the EAF and 80% (2.4 lb/ton) are attributed to the AOD. These test factors have been increased by 20% (i.e., multiplier of 1.2).

P002: Argon-Oxygen Decarburization Vessel

Process Description:	Argon-Oxygen Decarburization (AOD) Vessel
Facility ID:	P002
Production Rate:	25.1 TPH
Maximum Production Capacity:	175,200 TPY
Raw Materials:	Molten Steel, Scrap Steel, Alloy Elements, Flux
Control Device:	Melt Shop Baghouse
Stack I.D.:	S001

Maximum AOD design capacity is 370,980 TPY, however capacity is physically limited to EAF capacity of 175,200 TPY.

Total Emissions – Argon Oxygen Decarburization Vessel

Pollutant	Emission Factor (lb/ton)	Annual Emissions (TPY)
PM [1]	16	37.19
PM_{10} [2]	12.8	29.75
$PM_{2.5}$ [3]	1.28	2.98
CO [4]	2.88	252.29
SO_X [1]	0	0
NO_X [5]	0.12	10.51
VOC [1]	0	0
Cr [6]	0.87	1.64
Ni [6]	0.38	0.72
Pb [6]	0.039	0.07

[1] Emission factor taken from ACHD reference letter dated December 15, 1998

[2] Emission factor taken from ACHD reference - PM_{10} = 80% of TSP

[3] Emission factor taken from ACHD reference - $PM_{2.5}$ = 10% of PM_{10}

[4] As per ACHD letter dated 12/15/98, testing was conducted for CO emissions by the fabric filter inlet containing the combined captured exhaust gases from the EAF and AOD on 10/25 & 10/26/95. Review of these tests by the Department suggest 20% (0.6 lb/ton) of the emissions are attributed to the EAF and 80% (2.4 lb/ton) are attributed to the AOD. These test factors have been increased by 20% (i.e., multiplier of 1.2).

[5] Emission factor from WebFIRE SCC 30300934. This factor has been increased by 20% (i.e., multiplier of 1.2).

[6] Emission factors taken from ACHD letter dated December 15, 1998 referencing Table 3-8 from EPA Publication EPA-450/3-82-020a "Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Industry-Background Information for Proposed Revisions to Standards."

P003: Teeming Ladle Heaters

Process Description: Teeming Ladle Heaters
Facility ID: P003
Capacity: Two 8.9 MMBtu/hr burners totaling 17.8 MMBtu/hr
Fuel: Natural Gas
Control Device: North American 4575-9 HiRAM Burners

Maximum Potential Combustion (Combustion of natural gas):

Rating (MMBtu/hr):	17.8 MMBtu/hr
Hours of Operation:	8,760 hr/yr
Rating (Btu/yr):	1.56E11
Heating Value:	1,020 Btu/CF
Gas Usage (MMCF/yr):	152.87

Total Emissions – P003 Teeming Ladle Heaters

Pollutant	Emission Factor (lb/MMCF)	Total Emissions (TPY)
PM [1]	7.6	0.581
PM_{10} [1]	7.6	0.581
$PM_{2.5}$ [1]	7.6	0.581
SO_X [1]	0.6	0.05
NO_X [2]	69.8	5.34
VOC [1]	5.5	0.42
CO [1]	84	6.42

[1] Emission factors are from EPA WebFIRE for SCC 10200603 (External Combustion Boilers; Industrial; Natural Gas ; < 10 Million Btu/hr).

[2] Emission factor is based on information provided by burner manufacturer.

P005: Teeming

Process Description: Teeming
Facility ID: P005
Capacity: 60 TPH
Max. Production Capacity: 175,200 TPY
Fuel/Raw Material: Molten Steel
Control Device(s): Melt Shop Baghouse
Stack I.D.: S001

Total Emissions – P005 Teeming

Pollutant	Emission Factor (lbs/ton)	Total Emissions (TPY)
PM [1]	0.07	0.16
PM_{10} [1]	0.03	0.07
$PM_{2.5}$ [1]	0.003	0.01
VOC [1]	0.002	0.18

[1] Emission factors are taken from EPA WebFIRE for SCC 30300921 (Industrial Processes; Primary Metal Production; Steel Manufacturing; Teeming (Unleaded Steel)).

[2] $PM_{2.5}$ is taken to be 10% of PM_{10}, per emission limitations included in the Title V Operating Permit.

P006: Electro-Slag Remelt Holding Furnaces

Process Description:	Two (2) Electro-Slag Remelt Holding Furnaces
Facility ID:	P006
Capacity:	7.0 MMBtu/hr Total
Annual Fuel Consumption:	60.12 MMCF
Fuel/Raw Material:	Natural Gas
Control Device(s):	None

Natural gas combustion:

Rating (MMBtu/hr):	7 MMBtu/hr
Operation Hours:	8,760 hr/yr
Heating Value:	1,020 Btu/CF
Rating (MMBtu/yr):	61,320
Fuel Consumption:	60.12 MMCF/yr

Total Emissions – P006 Electro-Slag Remelt Holding Furnaces

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	7.6	0.23
PM_{10} [1]	7.6	0.23
$PM_{2.5}$ [1]	7.6	0.23
SO_X [2]	0.6	0.018
NO_X [1]	100	3.006
VOC [2]	2.8	0.08
CO [1]	84	2.52

[1] Emission factors from EPA WebFIRE version 6.25 SCC 10200603 (External Combustion Boilers; Industrial; Natural Gas; < 10 Million Btu/hr)

[2] Emission factors from EPA WebFIRE version 6.25 SCC 30490003 (Industrial Processes; Secondary Metal Production; Fuel Fired Equipment; Natural Gas: Process Heaters)

P007: Electro-Slag Remelt Furnaces

Process Description:	Electro-Slag Remelt Furnaces (4 ESR Remelt Furnaces: A-left, A-right, B & C)
Facility ID:	P007
Capacity:	7 TPH, Total of Four Furnaces
Total Annual Production:	61,320 TPY
Fuel/Raw Material:	N/A (electric)/Alloy Steel Ingots, Slag
Control Device(s):	ESR Baghouse
Stack I.D.:	S002

ESR Baghouse Capture Efficiency:	99%
Control Efficiency:	98%

Total Emissions – P007 Electro-Slag Remelt Furnaces

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	2.43	2.22
PM_{10} [1]	2.43	2.22
$PM_{2.5}$ [2]	1.80	1.64
VOC [3]	0.002	0.06

[1] Emission factor is derived from material balance as detailed in Title V Permit Application dated November 30, 1999.

[2] Per AP-42 Table 12.5-2, 74% of PM is PM2.5.

[3] Emission factor taken from ACHD reference letter dated 12/15/98.

P010: Hot Rolling/Blooming Mill

Maximum Production Capacity: 104,000 TPY

Total Emissions – P010 Blooming Mill

Pollutant	Emission Factor (lbs/ton steel)	Annual Emissions (TPY)
PM	-	-
PM_{10}	-	-
$PM_{2.5}$	-	-
VOC [1]	0.025	1.3

[1] VOC emission factor is from EPA-600/2-84-003, Organic Emissions from Ferrous Metallurgical Industries.

P011 & P018: Annealing Furnaces and Plate-Warming Furnace

Maximum Production Capacity (Combustion of Natural Gas)
Rating (MMBtu/hr) [without low NO_X burners] 129.6
Rating (MMBtu/hr) [with low NO_X burners] 61.7
Maximum Production Capacity (Tons of Alloy Steel) 80,369 TPY

Total Emissions – P011 & P018 Annealing Furnaces and Plate-Warming Furnace

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	7.6	6.24
PM_{10} [1]	7.6	6.24
$PM_{2.5}$ [1]	7.6	6.24
SO_X [1]	0.6	0.49
NO_X [1,2]	100	68.9
VOC [1]	5.5	4.52
CO [1]	84	69

[1] Emission factors are from EPA WebFIRE for SCC10200603 External Combustion Boilers; Industrial; Natural Gas; < 10 Million Btu/hr (AP 42 Chapter 1.4, July 1998).
[2] NO_X Emission Factor for Low NO_X Burners is 50 lb/10 6 scf.

P012: Reheat Furnaces

Reheat furnaces SCC 30300933 & 10200603
Maximum Production Capacity (Combustion of Natural Gas)
Rating (MMBtu/hr) 187.2
Hours of Operation (hr/yr) 8,760
Gas Usage (MMcf/yr) 1,607.72
Maximum Production Capacity (tons of Alloy Steel/yr) 103,956

Total Emissions – P012 Reheat Furnaces

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	7.6	6.11
PM_{10} [1]	7.6	6.11
$PM_{2.5}$ [1]	7.6	6.11
SO_X [1]	0.6	0.48
NO_X [2]	76.5	61.5
VOC [1]	5.5	4.42
CO [2]	37.74	30.34

[1] Emission factor from EPA WebFIRE SCC10200603 (AP 42 Chapter 1.4, July 1998).
[2] Emission factors come from the ACHD spreadsheet used for the potential-to-emit calculations associated with the 2010 application renewal process.

P013: Gantry Grinders (Source of Minor Significance)

SCC 30400340 Industrial Processes; Secondary Metal Production; Grey Iron Foundries; Grinding/Cleaning
Two units

Maximum Production Capacity:	70,080 TPY
Control Device:	Integral Particulate Control Device
Capture Efficiency:	97%
Control Efficiency:	99%

Total Emissions – P013 Gantry Grinders

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	0.3	0.42
PM_{10} [2]	0.03	0.04
$PM_{2.5}$ [3]	0.003	0.004

[1] Emission factor taken from EPA WebFIRE, SCC 30400340 Industrial Processes; Secondary Metal Production; Grey Iron Foundries; Grinding/Cleaning (AP-42 Table 12.10-7, dated January 1995).

[2] 10% of TSP = PM_{10} for grinding as per FIRE 6.25, SCC 30400340 and per ACHD ref. Letter dated 12/15/1998.

[3] Emission factor taken from ACHD reference - $PM_{2.5}$ = 10% of PM^{10}.

P015: Midwest Grinders (Source of Minor Significance)

4 units plus one spare

Maximum Production Capacity:	87,600 TPY
Control Device:	Grinder Building Baghouse
Capture Efficiency:	95%
Control Efficiency:	95%

Total Emissions – P015 Midwest Grinders

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	0.3	1.28
PM_{10} [2]	0.03	0.128
$PM_{2.5}$ [3]	0.003	0.013

[1] Emission factor taken from AP-42 Table 12.10-7, dated January 1995, cleaning, finishing, Emitted to Work Environment.

[2] 10% of TSP = PM_{10} for grinding as per ACHD ref. Letter dated 12/15/1998.

[3] Emission factor taken from ACHD reference - $PM_{2.5}$ = 10% of PM_{10}

P019: Western Gear Billet Grinder (Source of Minor Significance)

Maximum Production Capacity:	6.8 TPH, 60,000 TPY
Control Device:	Western Gear Grinder Baghouse
Capture Efficiency:	98%
Control Efficiency:	99.99%

Total Emissions – P019 Western Gear Billet Grinder

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1]	0.3	0.18
PM_{10} [2]	0.03	0.018
$PM_{2.5}$ [3]	0.003	0.002

[1] Emission factor taken from AP-42 Table 12.10-7, dated January 1995, Cleaning, finishing, Emitted to Work Environment.
[2] 10% of TSP = PM_{10} for grinding as per FIRE 6.25, SCC 30400340.
[3] Emission factor taken from ACHD reference - $PM_{2.5}$ = 10% of PM_{10}.
[4] PM Capture and control efficiencies for the Western Gear Grinder Baghouse are engineering estimates.

P022: Vulcan End Grinder (Source of Minor Significance)

Maximum Production Capacity [1]: 16 TPH; 140,160 TPY
Control Device: Vulcan End Grinder Baghouse
Capture Efficiency: 95%
Control Efficiency 99.99%

Total Emissions – P022 Vulcan End Grinder

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [2]	0.3	1.05
PM_{10} [3]	0.03	0.105
$PM_{2.5}$ [4]	0.003	0.011

[1] Maximum production based on letter to ACHD of October 20, 2005.
[2] Emission factor taken from WebFIRE version 6.25, SCC 30400340 (AP-42 Table 12.10-7, dated January 1995) and ACHD October 20, 2005 letter.
[3] 10% of TSP = PM_{10} for grinding as per FIRE 6.25, SCC 30400340.
[4] Emission factor taken from ACHD reference - $PM_{2.5}$ = 10% of PM_{10}.
[5] PM Capture and control efficiencies are engineering estimates.

P023: AOD Relining Heater

SCC=30300934 Industrial Processes; Primary Metal Production; Steel Manufacturing; Heat Treating Furnaces: Annealing &
SCC=10200603 External Combustion Boilers; Industrial; Natural Gas; < 10 Million Btu/hr

Maximum Potential Combustion (Combustion of Natural Gas)
Rating: 8.9 MMBtu/hr
Operation Hours: 8,760 hr/yr
Annual Fuel Consumption: 76.44 MMCF/yr
Control Device(s): North American 4575-9 HiRAM Burners

Total Emissions – P023 AOD Relining Heater

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1,2]	7.6	0.29
PM_{10} [1,2]	7.6	0.29
$PM_{2.5}$ [1,2]	7.6	0.29
SO_X [1]	0.6	0.023
NO_X [3]	69.8	2.67
VOC [1]	5.5	0.21
CO [1]	84	3.21

[1] Emission factor from EPA WebFIRE SCC10200603.
[2] Include both filterable and condensable particulate.
[3] Emission factor is based on information provided by burner manufacturer.

P024: Transfer Ladle Heater

Capacity: 8.9 MMBtu/hr burner
Fuel: Natural Gas
Control Device(s): North American 4575-9 HiRAM Burners

Maximum Potential Combustion (Combustion of Natural Gas)
Rating: 8.9 MMBtu/hr
Operation Hours: 8,760 hr/yr
Annual Fuel Consumption: 76.44 MMCF

Total Emissions – P024 Transfer Ladle Heater

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM [1,2]	7.6	0.29
PM_{10} [1,2]	7.6	0.29
$PM_{2.5}$ [1,2]	7.6	0.29
SO_X [1]	0.6	0.023
NO_X [3]	69.8	2.7
VOC [1]	5.5	0.21
CO [1]	84	3.21

[1] Emission factor from EPA WebFIRE SCC10200603
[2] Filterable PM
[3] Emission factor is based on information provided by burner manufacturer.

V001: Off-Road Vehicles

Gallons of Diesel Fuel Used 70.0 (Mgal/yr)

Total Emissions – V001 Off-Road Vehicles

Pollutant	Emission Factor (lbs/Mgal)	Annual Emissions (TPY)
PM	42	1.47
PM_{10}	42	1.47
$PM_{2.5}$	42	1.47
SO_X	137	4.8
NO_X	604	21.14
VOC	49	1.72
CO	130	4.55

Emission factors are taken from ACHD air emission inventory spreadsheet.

Belchfire Torches (Source of Minor Significance)

ESR Electrode Preheat Torches: 3 units
Manufacturer: Belchfire Torch Products
Model: Model EX Gas Fuel and Air Torch
Fuel Type: Natural Gas
Manufacturing Date: Est. 2017
Burner Rating (MMBtu/hr): 1.4
Fuel HHV Value (Btu/SCF): 1,026
Fuel Usage (MMCF/hr): 0.00136

Total Emissions – Belchfire Torches

Pollutant	Emission Factor (lbs/MMCF)	Annual Emissions (TPY)
PM_{10}	7.6	0.136
SO_X	0.6	0.011
NO_X	100	1.79
VOC	5.5	0.1
CO	84	1.51
Formaldehyde	0.075	0.001
Benzene	0.0021	0.00004
N-Hexane	1.8	0.032
toluene	0.0034	0.0001
Total HAPS	2	0.034

Emission factors are from EPA AP 42 Chapter 1.4.

POTENTIAL EMISSION SUMMARY (TPY):

Total Annual Emissions from all sources on the facility (TPY)

I.D.	Source Description	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_X	VOC	CO	CO_2
P001	Electric Arc Furnace	26.3	15.2	1.52	6.13	17.52	30.66	63.07	-
P002	Argon-Oxygen Decarburization Vessel	37.2	29.8	2.98	0	10.51	0	252.29	-
P003	Teeming Ladle Heaters	0.58	0.58	0.58	0.046	5.34	0.42	6.42	9,154
P005	Teeming	0.16	0.07	0.01			0.18		-
P006	Electro-Slag Remelt Holding Furnaces	0.23	0.23	0.23	0.018	3.01	0.08	2.52	3,600
P007	Electro-Slag Remelt Furnaces	2.22	2.22	1.64	-	-	0.06	-	-
P010	Hot Rolling/Blooming Mill	-	-	-	-	-	1.3	-	-
P011& P018	Annealing Furnaces	6.24	6.24	6.24	0.49	68.9	4.52	69	98,384
P012	Reheat Furnaces	6.11	6.11	6.11	0.48	61.5	4.42	30.34	96,276
P013	Gantry Grinders	0.42	0.042	0.004	-	-	-	-	-
P015	Midwest Grinders	1.28	0.128	0.013	-	-	-	-	-
P019	Western Gear Billet Grinder	0.18	0.018	0.002	-	-	-	-	-
P022	Vulcan End Grinder	1.05	0.105	0.011	-	-	-	-	-
P023	AOD Reline Heater	0.29	0.29	0.29	0.023	2.67	0.21	3.21	4,577
P024	Transfer Ladle Heaters	0.29	0.29	0.29	0.023	2.67	0.21	3.21	4,577
B001	Miscellaneous Space Heaters	0.505	0.505	0.505	0.035	5.81	0.31	1.16	6,331
E001	Lime Silo	1.31	0.66	0.13	-	-	-	-	-
F001	Slag Storage and Retrieval	2.76	1.49	0.21	-	-	-	-	-
F002	Road Emissions	8.56	4.76	1.65	-	-	-	-	-
V001	Off-Road Vehicle	1.47	1.47	1.47	4.80	21.14	1.72	4.55	-
TOTAL (tons per year)		**107.81**	**80.87**	**34.57**	**12.05**	**199.05**	**44.08**	**435.78**	**222,900**

REGULATORY APPLICABILITY:

1. **Article XXI Requirements for Issuance:**

   See Permit Application No. 0027, Section 5. The requirements of Article XXI, Parts B and C for the issuance of operating permits have been met for this facility. Article XXI, Part D, Part E & Part H will have the necessary sections addressed individually.

   §2105.48 (Areas Subject to §2105.40 through §2105.47): Universal Stainless is located outside of the area specified in Article XXI, Section 2105.48.a. Therefore, the requirements of Article XXI, Sections §2105.40 through §2105.47, do not apply to this source.

2. **Testing Requirements:**

   Testing for exhaust gas PM/PM_{10} concentrations and equivalent emission rates (lb/hr), CO, and VOC emission rates (lb/hr) at the Melt Shop Baghouse is required at least once every five (5) years. The Department reserves the right to require additional testing if necessary, in the future to assure compliance with the terms and conditions of this Title V Operating Permit.

3. **Applicable New Source Performance Standards (NSPS):**

   40 CFR Part 60, 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.
   In July 1996, USAP - Bridgeville modified the electric arc furnace by replacing the 15 MVA transformer with a larger 30 MVA transformer. In January 1997, USAP - Bridgeville added computerized controls, a water-cooled roof, a chimney, and increased the size of the electrodes from 15 inches to 18 inches. On the basis of this information, the Department believes the electric arc furnace was modified and is subject to 40 CFR Part 60, Subpart AAa – New Source Performance Standards (NSPS) for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983.

4. **Applicable NESHAP and MACT Standards:**

   40 CFR, Part 63, Subpart YYYYY – National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities.
   The requirements of 40 CFR Part 63 Subpart YYYYY were found to be applicable to the EAF and AOD Vessel. The particulate emissions standards of 40 CFR Part 60, Subpart AAa satisfy the particulate emission standards of 40 CFR Part 63 Subpart YYYYY. Please see TV permit #0027-OP25 for specific applicable conditions.

5. **40 CFR Part 64, "Compliance Assurance Monitoring":**

   The requirements of 40 CFR Part 64, "Compliance Assurance Monitoring" were found to be applicable to the EAF and AOD Vessel as "other" emission units for emissions of PM/PM_{10}, due to the Melt Shop Baghouse for particulate control. The emission units do not utilize a control device for any other pollutants whose emissions exceed 100% of the amount (tons per year) required for classification as a major source. The source will continue to monitor the baghouse operating parameters in accordance with 40 CFR Part 63 Subpart YYYYY and 40 CFR Part 60 Subpart AAa to comply with the requirements of 40 CFR Part 64.

6. **ACHD RACT Plan Approval Order and Agreement No. 241:**

   Section 2105.06 of Article XXI requires that RACT be applied to all major sources of NO_X. Plan Approval Order and Agreement Upon Consent Number 241, dated December 19, 1996, submitted to the US EPA as a

site specific SIP revision to Allegheny County's portion of the PA SIP, has established the following NO_X RACT requirements:

1. The permittee shall at no time operate the following equipment unless it is being maintained and operated in accordance with good engineering practice and within the manufacturer's specifications:
    a. Electric Arc Furnace
    b. Argon-Oxygen Decarburization Vessel
    c. Teeming Ladle Heater
    d. Ingot Reheat Furnace
    e. Teeming Process
    f. Hot Rolling Process
    g. Annealing Furnaces Nos. 3 to 11
    h. Reheat Furnaces Nos. 3 to 20
    i. Space Heaters
    j. AOD Relining Heater
    k. Transfer Ladle Heater

2. The permittee shall always maintain all appropriate records to provide sufficient data and calculations to clearly demonstrate compliance with Section 2105.06 of Article XXI and the RACT Order. These data and information shall include, but not be limited to:
    a. Production and operating records for the Electric Arc Furnace, the AOD Vessel, the Teeming Process, and the Hot Rolling Process and
    b. Records of fuel type and fuel usage

3. The permittee shall retain all the above records for at least two years and shall make them available to the Department upon request.

7. **RACT III:**

As a major source of NO_X emissions, USAP - Bridgeville was subjected to Reasonable Available Control Technology III (RACT III) required for the 2015 Ozone National Ambient Air Quality Standards (NAAQS). The department has determined that the RACT III requirements are identical to the RACT II requirements and are as stringent as RACT II.

The table below shows facility sources subject to the Presumptive requirements per PA Code 129.112(c):

I.D.	Source Description	RACT III Presumptive Citation	RACT III Requirement
P001	Electric Arc Furnace	129.112(c)(11)	The permittee shall install, maintain and operate these sources in accordance with the manufacturer's specifications and with good operating practices.
P002	Argon Oxygen Decarburization Vessel	129.112(c)(11)	
P003	Teeming Ladle Heaters	129.112(c)(4)	
P006	Electro-Slag Remelt Holding Furnaces	129.112(c)(4)	
P011	Annealing Furnaces	129.112(c)(4)	
P012	Reheat Furnaces	129.112(c)(4)	

I.D.	Source Description	RACT III Presumptive Citation	RACT III Requirement
P018	Plate Warming Furnace	129.112(c)(4)	
P023	AOD Reline Heater	129.112(c)(4)	
P024	Transfer Ladle Heater	129.112(c)(4)	
B001	Space Heaters	129.112(c)(4)	

8. **ACHD Installation Permit No. 0054-I002:**

   All exhaust from the Western Gear Billet Grinder shall be vented through the Western Gear Billet Grinder baghouse dust collector. The baghouse shall be equipped with automatic cleaning controls and instrumentation that shall continuously measure the differential pressure drop across the baghouse to within 2.0% of the measuring span of the device while treating particulate emissions from the grinder. The differential pressure drop across the baghouse shall maintain an operating range of from 8.5" w.c. to 12" w.c. at all times while treating particulate emissions from the grinder. The outlet grain loading for the baghouse shall not exceed 0.002 grains/dscf, at any time. The subject baghouse shall have a design exhaust flow rate of 10,000 acfm @ 12" w.c. PM and PM_{10} emissions from the Western Gear Billet Grinder baghouse shall not exceed 0.16 lb/hr and 0.7 TPY.

9. **ACHD Operating Permit No. 7037009-000-16400:**

   The production of steel at the Electric Arc Furnace (EAF) shall not exceed 175,200 tons of steel in any consecutive 12-month period. The production in any one heat shall not exceed 44 tons.

10. **ACHD Operating Permit No. 7037009-000-65301:**

    Exhaust from the Gantry Grinders shall be vented through the Conditioning Building Baghouse. Total emissions of PM from the Gantry Grinders Nos. 1 and 2 shall be limited to 0.61 lbs/hr and 1.8 TPY.

11. **ACHD Operating Permit No. 7037033-000-92300:**

    Exhaust from the Electro-Slag Remelt operations shall be vented through the Electro-Slag Remelt Furnaces Baghouse. The baghouse shall be operating as per manufacturer's specifications at all times when the melting and/or grinding equipment are in operation. Emissions of Particulate Matter from the Electro-Slag Remelt operations shall be limited to 0.20 lbs/hr and 1752 lbs/yr.

12. **ACHD Installation Permit No. 0027-I005:**

    Permit No. 0027-I005 was issued by the Department for two new 16.6 MMBtu/hour Bloomer Reheat Furnace Nos. 13 and 21 which are equipped with low-NO_X burners. The potential emissions from the installation are 0.27 tons/yr of particulate matter, 0.27 tons/yr of particulate matter <10 microns (PM_{10}), 10.9 tons/yr of nitrogen oxides, 0.09 tons/yr of sulfur oxides, 5.4 tons/yr of carbon monoxide, and 0.78 tons/yr of volatile organic compounds.

13. **ACHD Installation Permit No. 0027-I006:**

    Permit No. 0027-I006 was issued by the Department for: three new 7.44 MMBtu/hour Hood Annealing Furnace Nos. 11, 12, and 13; one new 3.72 MMBtu/hour Ingot Hood Furnace CP-5; and one 3.8 MMBtu/hour new Bar Products Annealing Furnace BAR-1 which are each equipped with low-NO_X burners. The potential

emissions from the installation are 0.24 tons/yr of particulate matter, 0.24 tons/yr of particulate matter <10 microns (PM_{10}), 8.37 tons/yr of nitrogen oxides, 0.08 tons/yr of sulfur oxides, 5.62 tons/yr of carbon monoxide, and 0.71 tons/yr of volatile organic compounds.

14. **ACHD Installation Permit No. 0027-I007:**

Permit No. 0027-I007 was issued by the Department for one new 8.8 MMBtu/hour Annealing Furnace No. 14 and one new 8.8 MMBtu/hour Clamshell Furnace CLM2 which are each equipped with low-NO_X burners. The potential emissions from the installation are 0.144 tons/yr of particulate matter, 0.144 tons/yr of particulate matter <10 microns (PM_{10}), 5.275 tons/yr of nitrogen oxides, 0.045 tons/yr of sulfur oxides, 6.348 tons/yr of carbon monoxide, and 0.416 tons/yr of volatile organic compounds.

15. **ACHD Installation Permit No. 0027-I008:**

Permit No. 0027-I008 was issued by the Department for two (2) new 8.9 MMBtu/hour Teeming Ladle Heaters, each equipped with low-NO_X burners. The potential emissions from the installation are 0.145 tons/yr of particulate matter, 0.145 tons/yr of particulate matter <10 microns (PM_{10}), 5.335 tons/yr of nitrogen oxides, 0.046 tons/yr of sulfur oxides, 6.421 tons/yr of carbon monoxide, and 0.42 tons/yr of volatile organic compounds.

16. **ACHD Installation Permit No. 0027-I009:**

Permit No. 0027-I009 was issued by the Department for one new 8.9 MMBtu/hour AOD Relining Heater and one 8.9 MMBtu/hour Transfer Ladle Heater, each equipped with low-NO_X burners. The potential emissions from the installation are 0.146 tons/yr of particulate matter, 0.146 tons/yr of particulate matter <10 microns (PM_{10}), 5.336 tons/yr of nitrogen oxides, 0.046 tons/yr of sulfur oxides, 6.42 tons/yr of carbon monoxide, and 0.42 tons/yr of volatile organic compounds.

17. **Emission Inventory:**

This facility is required to provide annual Emission Inventory reports per §2108.01.e of Article XXI because this facility has the potential to emit more than 25 tpy of PM, PM_{10}, $PM_{2.5}$, NO_X, CO, and VOC.

18. **Risk Management Plan; CAA Section 112(r):**

The facility is not required to have a risk management plan currently because none of the regulated chemicals exceed the thresholds in the regulation.

19. **Greenhouse Gas Reporting (40 CFR Part 98):**

The total Carbon Dioxide potential to emit at Universal Stainless facility is 222,900 tons per year. There are presently no Title V applicable requirements for greenhouse gases. Should actual emissions of CO_2e at the facility exceed 25,000 metric tons in any 12-month period, the facility would have to submit reports in accordance with 40 CFR Part 98.

20. **Environmental Justice**:

Universal stainless is located near an environmental justice (EJ) area, defined by the Pennsylvania DEP as "any census tract where 20 percent or more individuals live at or below the federal poverty line, and/or 30 percent or more of the population identifies as a non-white minority, based on data from the U.S. Census Bureau and the federal guidelines for poverty". Because this facility is an existing source, alternative site location is not possible. The operating permit contains all testing, monitoring, recordkeeping, and reporting requirements (as required under §70.6(a)(3)).

EMISSIONS SUMMARY:

Emissions Summary for USAP - Bridgeville

Pollutant	Total (tpy*)
Particulate Matter	107.8
Particulate Matter <10 µm (PM_{10})	80.9
Particulate Matter <2.5 µm ($PM_{2.5}$)	34.6
Nitrogen Oxides (NO_X)	199.1
Sulfur Oxides (SO_X)	12.05
Carbon Monoxide (CO)	435.8
Volatile Organic Compounds (VOC)	44.1
Hazardous Air Pollutants (HAP)	2.43
Greenhouse Gases (CO_2e)	222,900

* A year is defined as any consecutive 12-month period.

RECOMMENDATION:

All applicable Federal, State, and County regulations have been addressed in the permit application. The Title V Operating Permit for USAP – Bridgeville should be approved with the emission limitations and terms and conditions in Permit No. 0027-OP25.