ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM

November 21, 2017

SUBJECT: Review of Application
Title V Operating Permit Renewal
Universal Stainless & Alloy Products, Inc.
600 Mayer Street
Bridgeville, PA 15017

RE: Operating Permit File No. 0027
Specialty Steel Manufacturing Plant

TO: JoAnn Truchan, P.E.
Section Chief, Permitting

FROM: David D. Good
Air Quality Engineer

FACILITY DESCRIPTION:

The Universal Stainless & Alloy Products, Inc. plant is a specialty steel manufacturing plant that produces high-speed steels, tool and die steels, and high temperature metals. The facility, which is located in Bridgeville, Allegheny County, Pennsylvania, is composed of one electric arc furnace, one argon-oxygen decarburization vessel, four electro-slag reduction furnaces, one hot rolling mill, and associated reheat and annealing furnaces. The facility is a major source of carbon monoxide (CO) and nitrogen oxides (NO_X) 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 consists of the following emission units:

1. Electric Arc Furnace; 23.14 TPH; 175,200 TPY capacity
2. Argon-Oxygen Decarburization Vessel; 25.1 TPH capacity
3. Teeming Ladle Heaters; 17.8 MMBtu/hr
4. Teeming; 60 TPH, 175,200 TPY capacity
5. Electro-Slag Remelt Holding Furnace; 4.0 MMBtu/hr
6. Electro-Slag Remelt Furnaces A-left, A-right, B, & C with a total capacity of 7.0 TPH.
7. Hot Rolling/Blooming Mill; 104,000 TPY capacity
8. Annealing Furnaces; 24 units (178.8 MMBtu/hr total rated capacity)
9. Reheat Furnaces; 19 units (177.8 MMBtu/hr total rated capacity)
10. Gantry Grinders; 8 TPH capacity
11. Midwest Grinders; 4 units plus one (1) spare (10 TPH capacity each grinder)
12. Plate Warming Furnace; 7.0 MMBtu/hr
13. Western Gear Billet Grinder; 6.8 TPH capacity
14. Vulcan End Grinder;
15. Miscellaneous Space Heating Units; 112 units (13.53 MMBtu/hr total rated capacity)
16. Circulating Water Cooling Towers (Melt Shop cooling tower, three (3) Electroslag Remelt Furnace cooling towers and the VAR Furnace cooling tower)
17. Plant Roads; 1.0 mi. Paved Roads; 0.8 mi. Unpaved Roads; 70,000 sq.ft. Parking Lots

18. Melt Shop Slag Processing, Storage and Handling; 27,500 TPY capacity [Alternative Operating Scenario]
19. AOD Relining Heater, 8.9 MMBtu/hr
20. Transfer Ladle Heater, 8.9 MMBtu/hr

POTENTIAL EMISSION SUMMARY:

Emission Unit	PM	PM10	PM2.5	CO2	SO2	NOx	VOC	CO
Electric Arc Furnace					6.13	17.52	30.66	63.07
Argon-Oxygen Decarburization Vessel						10.51		252.29
Teeming							0.18	0.00
MELT SHOP (includes EAF, AOD and Teeming.	**63.62**	**45.04**	**4.50**	**11547.00**	**11.12**	**28.03**	**30.84**	**315.36**
Teeming Ladle Heaters	0.15	0.15	0.15	8332.14	0.05	5.34	0.42	6.42
Electro-Slag Remelt Holding Furnace	0.13	0.13	0.13	1872.39	0.01	1.72	0.05	1.44
Electro-Slag Remelt	2.22	2.22	1.64				0.06	
Hot Rolling/Blooming Mill							1.30	
Annealing & Plate Warming Furnaces	6.24	6.24	6.24	89547.14	0.49	68.90	4.52	69.00
Reheat Furnaces	1.53	1.53	1.53	87627.94	0.48	61.50	4.42	30.34
Gantry Grinders	0.42	0.04	0.00					
Midwest Grinders	1.28	0.13	0.01					
Western Gear Billet Grinder	0.27	0.03	0.00					
Vulcan End Grinder	1.05	0.11	0.01					
AOD Relining Heater	0.07	0.07	0.07	4166.07	0.02	2.67	0.21	3.21
Transfer Ladle Heater	0.07	0.07	0.07	4166.07	0.02	2.67	0.21	3.21
Miscellaneous Space Heating Units	0.51	0.51	0.51	6331.03	0.03	5.81	0.31	1.16
Lime Silo	0.17	0.09	0.02					
Cooling Towers (EAF & 3-ESR)	8.11							
Melt Shop Slag Processing, Storage and Handling	2.68	1.45	0.20					
Plant Roads	8.56	4.76	1.65					
Vehicle Emissions	1.47	1.47	1.47		4.80	21.14	1.72	4.55
TOTAL (tons per year)	**98.55**	**64.03**	**18.21**	**213590**	**17.03**	**197.76**	**44.05**	**434.70**

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

Emission Unit Data:

See Appendix A.

Potential and Allowable Emissions:

See Appendix B.

Fugitive Emission Sources:

Melt Shop Building, Melt Shop Slag Processing, Handling and Storage, Annealing & Plate Warming Furnaces, Reheat Furnaces, Grinders, AOD Reline & Transfer Ladle Heaters, Space Heaters, Plant Paved and Unpaved Roads

EMISSION SOURCES OF MINOR SIGNIFICANCE:

1. Three electrically-heated laboratory ovens in sample preparation area
2. Plant maintenance and vehicle repair facilities (general repairs, welding, non-solvent cleaning, and metal cutting)
3. Hand-held equipment for occasional surface grinding or surface finishing of steel products to remove surface imperfections
4. Bench-scale laboratory equipment for chemical analysis of steels (4 electrically operated element analyzers)
5. 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, and 2 sample-machining lathes)
6. Diesel storage tank (1,000 gallons capacity)
7. Diesel storage tank (300 gallons capacity)
8. Waste Oil Tank
9. Quench Tank for Clam Shell Furnace
10. Cold degreaser tub
11. Lime storage silo
12. Vacuum Arc Remelt (VAR) Furnace

EMISSION CONTROL:

The Electric Arc Furnace (EAF), Argon-Oxygen Decarburization (AOD) Vessel, and Teeming operations are completely enclosed by the Melt Shop building with emissions exhausted to and controlled by a single shop baghouse (EAF Melt Shop Baghouse, Stack S001).

The Electro-Slag Remelt Holding Furnace is completely contained within the Electro-Slag Remelt Building. The Electro-Slag Remelt Furnaces are completely contained within the Electro-Slag Remelt Furnaces Building with emissions exhausted to and controlled by the Remelt Furnaces Baghouse (Stack S002).

The Hot Rolling/Blooming Mill operations are uncontrolled.

The Annealing Furnaces, Reheat Furnaces, Teeming Ladle Heater, AOD Relining Heater and Transfer Ladle Heater are contained within plant buildings. All of the Annealing Furnaces, Reheat Furnaces, Teeming Ladle Heaters, AOD Relining Heater and Transfer Ladle Heater are equipped with low-NOx burners.

The Gantry Grinders are completely contained within the Conditioning Building and are controlled by Integral Cartridge Type Dust Collectors. The Midwest Grinders are completely contained within the Grinding Building that is equipped with dust collection hoods vented to the Grinding Building Baghouse (Stack S004).

The Plate Warming Furnace is completely contained within the Long Product Building. The Western Gear Billet Grinder is completely contained within the Grinding Building and is controlled by the Western Gear Billet Grinder Baghouse (Stack S003).

Miscellaneous Space Heating Units are located within plant buildings throughout the plant. There are no controls on these units. Melt Shop Slag Processing, Storage and Handling is conducted inside the slag processing building. At the present time this processing is operated by International Mill Services. When necessary, wet suppression is used to control fugitive PM emissions this operation. Fugitive PM emissions from plant paved and unpaved roads are controlled by wet suppression, chemical treatment, and paved road sweeping.

TESTING/MONITORING REQUIREMENTS:

Article XXI §2103.12.h.1 and §2108.02

The permittee shall perform emission tests for exhaust gas PM/PM-10 concentrations and equivalent emission rates (lb/hr), and 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 (§2103.12.h.1; §2108.02). 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. (§2103.12.a.2.B) 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. (§2102.04.b.6)

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. (§2103.12.a.2.B) The permittee shall, within 60 days of permit issuance, purchase, install, and start-up instrumentation to 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. (§2102.04.b.6)

The permittee shall conduct weekly visual inspections of the Gantry Grinders exhaust systems and Integral Dust Collectors to insure the equipment appears to be operating properly and that the integrity of the control equipment exhaust systems are not compromised by damage, malfunction or deterioration. (§2103.12.h.1)

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. (§2103.12.a.2.B) 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. (§2102.04.b.6)

The permittee shall conduct an inspection on the Hetran Building Dust Collector once per week and check and record the fan motor amperes for the emission control system on a once-per-shift basis. (§2103.12.a.2.B) The permittee shall, at all times, have instrumentation to continuously monitor the differential pressure drop across each compartment of the dust collector 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. (§2102.04.b.6)

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. (§2103.12.a.2.B) 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. (§2102.04.b.6)

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.

APPLICABLE REQUIREMENTS:

Article XXI, Requirements for Issuance.

The requirements of Article XXI, Parts B and C for the issuance of major source operating permits have been met for this facility. Article XXI, Part D, Part E & Part H will have the necessary sections addressed individually.

New Source Performance Standards (§2105.05, 40 CFR Part 60 Subpart AAa)

In July 1996, Universal Stainless modified the electric arc furnace G by replacing the 15 MVA transformer with a larger 30 MVA transformer. In January 1997, USAP 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.

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/PM10, 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 40 Subpart AAa to comply with the requirements of 40 CFR Part 64.

National Emission Standards for Hazardous Air Pollutants for Area Sources (40 CFR Part 63 Subpart YYYYY):

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 TVOP 0027 for specific applicable conditions.

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 No. 3 through 11
    h) Reheat Furnaces No. 3 through 20
    i) Space Heaters
    j) AOD Relining Heater
    k) Transfer Ladle Heater

2. The permittee shall at all times 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 of the above records for at least two (2) years and shall make them available to the Department upon request.

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.

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 twelve-month period. The production in any one heat shall not exceed 44 tons.

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 #1 and #2 shall be limited to 0.61 lbs/hr and 1.8 TPY.

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.

ACHD Installation Permit No. 0027-I005

Permit No. 0027-I005 was issued by the Department for two (2) new 16.6 mmBtu/hour Bloomer Reheat Furnaces 13 & 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 (PM10), 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.

ACHD Installation Permit No. 0027-I006

Permit No. 0027-I006 was issued by the Department for three (3) new 7.44 mmBtu/hour Hood Annealing Furnaces 11, 12 & 13, one (1) new 3.72 mmBtu/hour Ingot Hood Furnace CP-5, and one (1) 3.8 mmBtu/hour new Bar Products Annealing Furnace BAR-1 which are each equipped with low-NOx burners. The potential emissions from the installation are 0.24 tons/yr of particulate matter, 0.24 tons/yr of particulate matter <10 microns (PM10), 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.

ACHD Installation Permit No. 0027-I007

Permit No. 0027-I007 was issued by the Department for one (1) new 8.8 mmBtu/hour Annealing Furnaces 14 and one (1) new 8.8 mmBtu/hour Clamshell Furnace CLM2 which are each equipped with low-NOx burners. The potential emissions from the installation are 0.144 tons/yr of particulate matter, 0.144 tons/yr of particulate matter <10 microns (PM10), 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.

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-NOx burners. The potential emissions from the installation are 0.145 tons/yr of particulate matter, 0.145 tons/yr of particulate matter <10 microns (PM10), 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.

ACHD Installation Permit No. 0027-I009

Permit No. 0027-I009 was issued by the Department for one (1) new 8.9 mmBtu/hour AOD Relining Heater and one (1) 8.9mmBtu/hour Transfer Ladle Heater each equipped with low-NOx burners. The potential emissions from the installation are 0.146 tons/yr of particulate matter, 0.146 tons/yr of particulate matter <10 microns (PM10), 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.

Article XXI, ACHD Pollutant Emission Standards for Combustion Sources (§2104.02.a, §2104.03.a)

The permittee has specified during this review that all fuel-fired emission units at this plant are direct fired emission units. Therefore, the requirements of §2104.02.a, §2104.03.a are not applicable to this source.

Article XXI, ACHD Particulate Mass Emission Standards for Specific Controlled Process Sources (§2104.02.c.9.b, (§2103.12.a.2.B)

The facility is not subject to §2104.02.c.9.b as they do not meet the definition of "primary steel maker". RACT has been applied on all existing sources, including the emissions from the EAF and AOD Vessel.

Article XXI, ACHD Pollutant Emission Standards for General Process Sources (§2104.02.b,

§2104.03.c)

Pursuant to Article XXI, the following pollutant emissions standards apply to the facility process sources:

1. Pursuant to Article XXI, §2104.02.b, particulate matter (PM) emissions from the Teeming Process, Electro-Slag Remelt Holding Furnace, Annealing Furnaces, Reheat Furnaces, Plate Warming Furnace, Teeming Ladle Heaters, AOD Relining Heater, Transfer Ladle Heater, Hot Rolling/Blooming Mill, Gantry Grinders, Midwest Grinders, and Western Gear Billet Grinder shall not exceed 7 pounds in any 60 minute period or 100 pounds in any 24-hour period. (§2104.02.b)
2. The concentration of sulfur oxides, expressed as sulfur dioxide (SO2), in the effluent gases from the Electric Arc Furnace, AOD Vessel, and Electro-Slag Remelt Shop, and the other emission units specified above shall not exceed the lesser of the potential to emit or 500 ppm (dry volumetric basis) at any time. (§2104.03.c)

Streamlining of Allowable Particulate Emission Limits

The Teeming Process, and Midwest Grinders are controlled by baghouses or Dust Collectors and the respective controlled PM emissions are less than the allowable emission limits of §2104.02.b. In addition, the potential to emit PM, based on AP-42, from the Annealing Furnaces, Reheat Furnaces, and Plate Warming Furnace is less than the allowable PM emission limit of §2104.02.b. The respective controlled potential emissions, and maximum potential emissions based on AP-42, for these processes have been determined as RACT and are incorporated into the major source operating permit.

The Electro-Slag Remelt Shop, including the Electro-Slag Holding Furnace, Gantry Grinders, and Western Gear Billet Grinder, have PM emission limits established in prior ACHD operating or installation permits. Such permitted PM emission limits are incorporated into the major source operating permit as the respective allowable PM emission limits, which shall also satisfy §2104.02.b. The permittee shall conduct these operations, and operate air pollution control equipment associated with applicable equipment, in accordance with good air pollution control practice at all times the processes are in operation, and comply with associated monitoring, record keeping and reporting, in order to comply with the allowable emission limits.

Article XXI, ACHD Particulate Matter Emission Limitations for Materials Handling, Processing, and Storage and Plant Roads (§2104.05, §2104.02.b, and §2105.49)

Pursuant to Article XXI, the following pollutant emissions standards apply to the facility:

1. Particulate matter emissions from dry bulk materials (e.g., steel slag) storage and handling operations shall each not exceed seven (7) pounds in any 60 minute period or 100 pounds in any 24-hour period, except no person shall be required to reduce emissions to a greater degree than 99 percent (§2104.02.b).

2. The permittee shall conduct dry bulk materials storage and handling operations in a manner such that emissions from these operations are not visible at or beyond the facility property line at any time. (§2104.05)

3. The permittee shall take actions to minimize the potential for fugitive emissions from vehicular traffic, including but not limited to, the following: (§2105.49)

    a. The periodic scraping of fine dust from haul roads;
    b. The use of water sprays and dust suppressants;
    c. Periodic street sweeping of paved roads; and
    d. Maintain vehicle speed below ten (10) miles per hour.

Streamlining of Allowable Particulate Emission Limits

The PM emissions from Bulk Materials Handling, Processing, and Storage, estimated using AP-42 emission factors

with an estimated control efficiency for wet suppression control of fugitive PM emissions, are less than the allowable emission limits of §2104.02.b. Therefore, the controlled potential emissions for the above processes are incorporated into the major source operating permit as the respective allowable particulate emission limits used to comply with this rule. The permittee shall conduct these operations in accordance with good engineering and air pollution control practices at all times in order to comply with the allowable emission limits.

Emissions 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 a total of twenty-five (25) or more tons of PM_{10}, NO_X, CO, and VOC.

NON-APPLICABLE REQUIREMENTS

New Source Performance Standards (§2105.05, 40 CFR Part 60)

The requirements of 40 CFR Part 60 Subpart AA (Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983) are not included in the permit for the Electric Arc Furnace because this unit was constructed in 1962, prior to the construction commencement applicability dates in the regulation.

The requirements of 40 CFR Part 60 Subpart AAa (Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983) are not included in the permit for the Argon-Oxygen Decarburization Vessel because this unit was installed in 1977, prior to the construction commencement applicability date in the regulation.

Risk Management Program (§2104.08, 40 CFR Part 68)

The facility currently does not store a listed regulated material above the threshold quantities specified by the regulation. Should the facility, as defined in 40 CFR Part 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in Part 68.10 and shall certify compliance with the requirements of Part 68 as part of the facility's annual compliance certification.

REGULATED POLLUTANTS WITH NO ESTABLISHED REGULATORY EMISSION LIMITATION:

Section 2103.12.a.2.B of Article XXI requires that RACT be applied to pollutants regulated by Article XXI without established regulatory emission limitations. RACT for PM/PM-10. CO, SO_X, and VOC emissions from the facility emission units have been determined to be proper operation and maintenance of the equipment according to good engineering and air pollution control practices. Therefore, the emission limitations for these pollutants will be the maximum potential emissions under proper operation of the emission units as shown in the above emission summary.

METHOD OF COMPLIANCE DETERMINATION:

Compliance with the EAF and AOD Vessel emission limitations will be demonstrated by the PM/PM-10, CO, and VOC emission testing and EAF Melt Shop Baghouse performance testing and monitoring described earlier, as well as record keeping and reporting requirements. These requirements shall include: records to demonstrate compliance with the requirements of §2105.06 and RACT Order No. 241, including the number of heats and production for the EAF (daily, monthly, 12-month); the time and duration of each furnace charge and tap (per charge/tap, monthly average, 12-month); the differential pressure drop across each compartment of the Melt Shop Baghouse; and stack test protocols and reports. The permittee shall maintain a copy of the manufacturer's specifications for the Melt Shop Baghouse and records of control system inspections and performance evaluations and all records of calibration checks, adjustments, and maintenance performed on all equipment that is subject to this permit. (§2103.12.j)

For the other emission units controlled by a baghouse, including the Teeming operation, Electro-Slag Remelt Shop, Gantry Grinders, Midwest Grinders, and Western Gear Billet Grinder, methods of compliance determination shall

include record keeping of control system inspections and performance evaluations and all records of calibration checks, adjustments, and maintenance performed on all equipment that is subject to this permit. (§2103.12.j) In addition, all emission units are subject to production/throughput and fuel usage record keeping requirements.

Compliance with the fugitive particulate matter emission limitations for the steel slag handling and storage operations and for plant roads will be demonstrated according to appropriate work practice and fugitive dust control measures.

The permittee shall record all instances of non-compliance with the conditions of this permit upon occurrence along with corrective action taken to restore compliance. (§2103.12.h.1) All records shall be retained by the facility for at least five (5) years. These records shall be made available to the Department upon request for inspection and/or copying. (§2103.12.j.2)

See the Major Source Operating Permit No. 0027 for the specific compliance methods, record keeping and reporting requirements for the facility.

GREENHOUSE GASES:

The total Carbon Dioxide potential to emit at Universal Stainless is 213,590 tons per year (See Appendix for calculations). There are presently no Greenhouse Gas requirements at the Universal Stainless facility.

RECOMMENDATIONS:

The facility is in compliance with all applicable regulations of Article XXI and it is recommended that the Operating Permit No. 0027 be issued.

APPENDIX A

Emission Unit Data

Emission Unit Data

Unit:	**Electric Arc Furnace**
Max. Capacity:	23.14 TPH; 175,200 TPY; 56 tons/heat
Date installed:	1962
Fuel/Raw Material:	Steel Scrap, Limestone, Alloy Elements
Exhaust	Stack S001; 482,811 acfm at 103 F
Emission controls:	Melt Shop Baghouse

Unit:	**Argon-Oxygen Decarburization Vessel**
Max. Capacity:	25.1 TPH; 175,200 TPY
Date Installed:	1977
Fuel/Raw Material:	Molten Steel, Scrap Steel, Alloy Elements, Flux
Exhaust	Stack S001; 482,811 acfm at 103 F
Emission controls:	Melt Shop Baghouse

Unit:	**Teeming Ladle Heaters**
Max. Capacity:	17.8 MMBtu/hr
Date Installed:	2009
Fuel/Raw Material:	Natural Gas
Exhaust	The Teeming Ladle Heaters are contained within the Melt Shop Building
Emission controls:	N/A

Unit:	**Teeming**
Max. Capacity:	60 TPH; 175,200 TPY
Date Installed:	Unknown
Fuel/Raw Material:	Molten Steel
Exhaust	Stack S001; 482,811 acfm at 103 F
Emission controls:	Melt Shop Baghouse

Unit:	**Elecro-Slag Remelt Holding Furnace**
Max. Capacity:	4.0 MMBtu/hr
Date Installed:	Unknown
Fuel/Raw Material:	Natural Gas
Exhaust	The Electro-Slag Remelt Holding Furnace is completely contained within the Electro-Slag Remelt Shop Building.
Emission controls:	None

Unit:	**Electro-Slag Remelt Furnaces A-left, A-right, B & C**
Max. Capacity:	7 TPH total for A-left, A-right, & B and C.
Date Installed:	1969, 1974, 2002
Fuel/Raw Material:	N/A (electric)
Exhaust	Stack S002; 18,000 acfm
Emission controls:	Remelt Shop Baghouse

Unit:	**Hot Rolling/Blooming Mill**
Max. Capacity:	104,000 TPY
Date Installed:	1972
Fuel/Raw Material:	Alloy Steel Ingots
Exhaust	N/A
Emission controls:	N/A

Unit:	**Annealing Furnaces**
Max. Capacity:	24 Units (178.8 MMBtu/hr total rated capacity)
Date Installed:	Unknown
Fuel/Raw Material:	Natural Gas
Exhaust	N/A
Emission controls:	Low-NOx burners for all annealing furnaces

Unit:	**Reheat Furnaces**
Max. Capacity:	19 Units (177.8 MMBtu/hr total rated capacity)
Date Installed:	Unknown
Fuel/Raw Material:	Natural Gas
Exhaust	N/A
Emission controls:	Low-NOx burners for all reheat furnaces

Unit:	**Gantry Grinders**
Max. Capacity:	8 TPH
Date Installed:	Unknown
Fuel/Raw Material:	Alloy Steel Billets and Ingots
Exhaust	The Gantry Grinders are completely contained within the Conditioning Building.
Emission controls:	Integral Dust Collectors

Unit:	**Midwest Grinders**
Max. Capacity:	10 TPH, each grinder
Date Installed:	1998 (2 Units); 2002 (2 Units); 2005 (1-spare)
Fuel/Raw Material:	Conditioned Alloy Steel Ingots and Billets
Exhaust	The Midwest Grinders are completely contained within the Grinding Building that is equipped with dust collection hoods vented to the Grinding Building Baghouse.
Emission controls:	Grinding Building Baghouse

Unit:	**Plate Warming Furnace**
Max. Capacity:	7.0 MMBtu/hr; 5,800 TPY Steel
Date Installed:	1996
Fuel/Raw Material:	Natural Gas/Alloy Steel Plates
Exhaust	The Plate Warming Furnace is completely contained within the Long Product Building.
Emission controls:	N/A

Unit:	**Western Gear Billet Grinder**
Max. Capacity:	6.8 TPH Steel
Date Installed:	2001
Fuel/Raw Material:	Alloy Steel Billets
Exhaust	Stack S003; 10,000 acfm at 70 F
Emission controls:	Western Gear Billet Grinder Baghouse

Unit:	**Miscellaneous Space Heating Units**
Max. Capacity:	112 Units (13.53MMBtu/hr total rated capacity)
Date Installed:	Unknown
Fuel/Raw Material:	Natural Gas
Exhaust	Space Heating Units are located within plant buildings.
Emission controls:	N/A

Unit:	**AOD Relining Heater**
Max. Capacity:	8.9 MMBtu/hr
Date Installed:	2009

Fuel/Raw Material:	Natural Gas/Alloy Steel Plates
Exhaust	The AOD Relining Heater is completely contained within the Melt Shop Building.
Emission controls:	N/A

Unit:	**Transfer Ladle Heater**
Max. Capacity:	8.9 MMBtu/hr
Date Installed:	2009
Fuel/Raw Material:	Natural Gas/Alloy Steel Plates
Exhaust	The Transfer Ladle Heater is completely contained within the Melt Shop Building.
Emission controls:	N/A

Unit:	**Melt Shop Slag Processing, Storage and Handling**
Max. Capacity:	27,500 TPY
Date Installed:	N/A
Fuel/Raw Material:	Steel Slag
Exhaust	N/A
Emission controls:	Wet Suppression

Unit:	**Circulating Water Cooling Towers**
Process Description:	Five cooling towers [Melt Shop Cooling Tower, three Electro-Slag Remelt (ESR) Furnace Cooling Towers and theVAR Furnace Cooling Tower]
Max. Capacity:	Recirculation Rates: Melt Shop cooling tower is 2,800 gallons per minute (gpm), each ESR cooling tower is 834 gpm and the VAR Furnace cooling tower is 500 gpm.
Dates Installed:	N/A
Raw materials:	Public drinking water for make-up water
Control Device:	Mist eliminators

Unit:	**Plant Roads**
Max. Capacity:	1.0 mi. Paved roads; 0.8 mi. Unpaved Roads; 70,000 sq. ft. Parking Lots
Date Installed:	N/A
Fuel/Raw Material:	N/A
Exhaust	N/A
Emission controls:	Wet Suppression; Chemical Treatment; Paved Road Sweeping

APPENDIX B

See attached spreadsheet for potential emission calculations