

**STAFF DETERMINATION FOR THE PSD APPLICATION TO MODIFY ELECTRIC ARC SHAFT
FURNACE TO ALLOW FOR FULL OPERATION AT THE TRUE DESIGN CAPACITY
TO THE EXISTING PERMIT TO INSTALL (PTI) ALLOWABLE
TO 2.76 MILLION TONS OF STEEL PER YEAR AT THE
NORTH STAR BLUESCOPE, LLC'S FLAT ROLL STEEL
RECYCLING FACILITY (PTI NO. 03-17004)**

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major sources, which are sources with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of major source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within a five-year period are considered to be contemporaneous. In addition, Ohio now has incorporated the PSD and NSR requirements by rule under OAC 3745-31.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major source. The principal requirements of the PSD regulations are:

- 1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.
- 2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

- 1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that has been achieved in practice.
- 2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.
- 3) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing State Implementation Plan (SIP) or are on an approved schedule resulting in full compliance with the SIP.

For rural ozone nonattainment areas, the requirements are:

- 1) LAER - New major sources must install controls that represent the lowest emissions levels (highest control efficiency) that has been achieved in practice.

- 2) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing SIP or are on an approved schedule resulting in full compliance with the SIP.

Finally, New Source Performance Standards (NSPS), SIP emission standards and public participation requirements must be followed in all cases.

Facility Description:

North Star BlueScope Steel, LLC (NSBS) facility is located in Delta, Ohio. NSBS is an existing major stationary source located in Fulton County, which is designated as an attainment area for all regulated criteria pollutants.

NSBS manufactures flat rolled steel products from recycled steel scrap. The primary steel production operations includes: electric arc shaft furnace (EASF) steelmaking, ladle refining (ladle metallurgy facility), a continuous castor, two tunnel furnaces and a rolling mill, and associated ancillary processes. Raw material scrap and other forms of iron will be shipped to the site by railcar and truck.

Process Description:

NSBS produces steel by melting steel scrap in an electric arc shaft furnace (EASF). Scrap is received into a scrap yard and then loaded into charge buckets for charging into the EASF where the metal is melted and then tapped through a bottom tap system into a ladle which is transported to a ladle metallurgy facility (LMF).

NSBS currently operates a twin shell AC Electric Arc Shaft Furnace (EASF) and two Ladle Metallurgy Facilities (LMF) in its melt shop at the Delta Mill. The melt shop fume control system includes a Direct Evacuation Control (DEC) system serving each shell of the furnace with a common drop-out box and water-cooled duct. The DEC system is exhausted by three hot gas fans (2 operating). A large canopy hood above the two furnace shells captures emissions from charging and tapping operations, as well as much of the fugitive EASF emissions. The off-gas from each LMF station is exhausted by a booster fan to the LMF common duct which ties into the end of the canopy duct. The DEC hot gas fan discharge ties into the canopy duct leading to the main ID fans. The main ID fans discharge to a 10-compartment positive pressure reverse air baghouse.

Modifications:

The purpose of the modifications is to request an increase in the maximum annual liquid steel production rate from 2.25 million tons/year to 2.7594 million tons/year. This increase will allow for anticipated improvements in the operating efficiency of the facility. These improvements are related to concentrated efforts to reduce equipment downtime, increase heat size and shorten cycle time. Physical changes to the equipment that will support this effort include: installing 2nd charge crane, re-rating the capacity of the existing ladle cranes, installing a lime injection system in the sidewall of each shell of the Electric Arc Furnace (EASF) and installing one additional caster segment.

NSBS is also proposing to install a second baghouse for the melt shop and re-designing the ductwork for the existing baghouse to better integrate with the new collector. The need for these changes stems from the steadily increasing ambient concentrations of particulate matter found inside the melt shop in recent years.

It is important to note that the maximum short-term production capacity of the facility (315 tons liquid

steel/hour) will not change as a result of these efficiency improvements. This modification seeks only to remove the synthetic production limit of 2.25 million TPY established in the initial PTI for this source and to allow for full operation at the true design capacity of the equipment.

This modification will in turn cause a significant net increase in actual mass emissions of PM, PM₁₀, NO_x, SO₂, VOCs, Lead (Pb), and CO. even though the lb/ton rate will not increase. Therefore, the proposed project will be a major modification subject to Prevention of Significant Deterioration (PSD) review.

New Source Review (NSR)/PSD Applicability

The facility contains an EASF that is an innovative twin shell design with an integrated double shaft scrap preheating system which is rated at 290 tons per hour with 100% scrap charge and 260 tons per hour with 60% scrap and 40% hot briquette iron pellets. The maximum production and the assigned permit allowable for the EASF is 315 tons of steel per hour. As such, the EASF generates particulate emissions for which an emission standard applies, and is therefore, considered an "affected facility" subject to 40 CFR 60 Subpart AAa, "Standards of Performance for Steel Plants Electric Arc Furn. & Argon-O₂."

The Steel Plants Electric Arc Furn. & Argon-O₂ NSPS applies to emissions for PM and opacity. The emission standard for Particulate Matter (PM) emissions applicable to the EASF is 0.0052 grains/dscf. This subpart also has an opacity requirement of 3% for the baghouse and 6% for the shop roof and 10% for dust handling operations associated with the EASF. Method 9 is the required reference method for opacity and Method 5 for PM emissions.

The NSBS facility is classified as a "major" stationary source because it is one of the 28 source categories and the potential emissions including fugitive emissions exceed 100 tons per year in an attainment area. The city of Delta, Ohio is located in Fulton County where the installation was built and is an attainment area for all pollutants. Once a source emits a regulated pollutant that triggers a major modification at a major source level emissions a PSD analysis is required. In addition, all pollutants which will be emitted at a rate in excess of the significance levels would also require the facility to perform a PSD analysis for those pollutants. Table 1 shows the emissions from the proposed modification.

TABLE 1

Emissions From the Proposed Modification

Pollutant	2-Year Average Emissions (TPY)	Future Actual Emissions (TPY)	Net Change (TPY)	PSD Significance Level (TPY)
CO	6507.96	10347.75	3839.79	100
NO _x	177.05	786.65	609.6	40
SO ₂	112.44	345.14	232.7	40
VOC	198.45	483.11	284.66	40
PM ^a	83.45	226.78	143.33	25
PM ₁₀ ^a	75.66	215.78	140.12	15
Lead ^a	0.2	1.63	1.43	0.6

^a Includes fugitive and point emissions.

Based upon the above information, PSD review is required for PM, PM₁₀, NO_x, SO₂, VOC, Lead (Pb), and CO.

BACT Review

As part of the application for any source regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology will be employed by the source. In this specific case, the BACT analysis was conducted for particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and volatile organic compound and lead. Each pollutant will be reviewed separately.

The application used a "top-down" approach to determine an appropriate level of control.

BACT Control for Particulate Matter and Lead

The particulate matter emitted from this source is comprised in part of lead, therefore, the proposed PM BACT is assumed to reflect BACT for lead as well.

NSBS is proposing a direct evacuation control/canopy (DEC) hood system with a fabric filter as BACT. In determining whether a DEC would be considered BACT, NSBS investigated the feasibility of the following capture and control technologies for the EASF PM emissions:

1. side draft hood;
2. full or partial furnace enclosures; and
3. open and closed configuration.

A side draft hood is considered to be an alternative fume extraction system to a DEC to remove process emissions from EASFs. The hood operates only when the furnace is upright with the roof in place. Side draft hoods are typically employed on smaller furnaces. EASF side draft hoods in lieu of the DEC are not considered BACT because side drafts hoods have lower capture efficiency. Also, high melt rate of modern large EASFs essentially require the use of direct evacuation gases from the furnace.

Full or partial furnace enclosures are not considered as a capture option because they hamper operations, such as charging and alloy addition, and can cause too many delays. A review of EPA documents and other publications indicates that furnace enclosures have been used on single furnace systems.

There are two basic roof configurations: open and closed. A closed roof configuration results in lower visible atmospheric emissions of particulate. One disadvantage of the closed roof system is that heavy in-shop heat and fume can accumulate in the work environment, and if there is an exhaust system malfunction or there is a furnace process upset, unacceptable worker exposure conditions can occur. Additionally, with a closed roof configuration, the canopy hood air flow must be higher than the canopy hood air flow in the open roof configuration to assure adequate ventilation and heat removal for the workers.

Fabric filters have advantages over other control devices in that they use less energy for equivalent outlet concentrations, are efficient collectors of very fine emissions, are tolerant of fluctuations in

inlet particle size distribution, and collect dust in dry form, which is easier to handle.

Electrostatic precipitators, cyclones, and scrubbers are not often installed on electric arc shaft furnace operations because they generally do not meet BACT or the Subpart AAa New Source Performance Standard of 0.0052 grains per standard cubic foot.

NSBS committed to the lowest permitted particulate emission performance level of 0.0018 grains/scf for their PSD permit.

The opacity of emissions from the baghouse exhaust will be limited to 3 percent. According to NSPS Subpart AAa, this baghouse opacity limit applies only for opacity of emissions from the "affected facility" which is the EASF.

However, the baghouse will control emissions from other emission sources such as the LMFs. Since the combined emissions from the baghouse will be subject to the 3% opacity limit, and the NSPS opacity limit is far more stringent than the State opacity limit, the NSPS limit is deemed to represent BACT.

BACT Control for Sulfur Dioxide

Sulfur enters into the EASF process as a component of the coke charged with the scrap and injected into the furnace for the foaming slag process and as a component of the scrap. The preponderance of the sulfur emits under substoichiometric conditions in the melt to form sulfides in the slag, principally in the form of calcium sulfide, since there is a lot of free calcium residual in the slag from the added lime. Some of the sulfur may react with injected oxygen or oxidize at the slag surface or in the furnace headspace to form SO₂ and be exhausted from the furnace. A portion of the SO₂ carried over in the exhaust appears to react in the gas stream or at the baghouse with lime carried over from the furnaces. Baghouse dust contains a significant portion of calcium products, and dust processors report that sulfur is contained in the dust as a non-combustible product most probably tied up with the calcium, that remains with the iron rich residue after processing for recoverable metals. A precise material balance may not be possible, but it is projected that the capture of sulfur as reaction compounds in the slag and baghouse dust is well over 90 percent of the input sulfur. Thus, the nature of the EASF process results in good control of potential SO₂ emissions. The projected average SO₂ emission attributable to the proposed EASF process is 0.10 lbs/ton of steel. Other EASF facilities are reported to have been tested or permitted at a range of levels equating to 0.09 to 0.28 lbs/ton of steel.

Traditional SO₂ control alternatives for combustion and process operations include: fuel or feed product modification or substitution and flue gas desulfurization (FGD) technologies.

Fuel substitution is not an option since natural gas used at the oxy-fuel burners is essentially a sulfur free fuel.

Alternative flue gas desulfurization technologies employed for combustion and other controlled process systems include:

1. Wet scrubbing,
2. Spray dryer absorption, and
3. Dry sorbent injection.

The lowest cost sulfur dioxide control alternative using dry injection technology would have a cost effectiveness around \$11,518 per ton of SO₂ controlled, making it economically prohibitive. Our determination is that there is no add-on EASF shop sulfur dioxide control meeting applicability, feasibility and impact criteria for BACT, and that the proposed well designed EASF and LMF systems

and scrap management program meet BACT requirements.

Therefore, the SO₂ emission limit of 0.10 lbs/ton of steel from the proposed EASF process meets the BACT.

BACT Control for Nitrogen Oxides

There are three fundamental mechanisms of NO_x formation. These mechanisms yield (1) thermal NO_x, (2) fuel bound nitrogen NO_x, and (3) prompt NO_x.

Thermal NO_x formation takes place at temperatures above 2000° F, when both nitrogen and oxygen are present and sufficient residence time is allowed. In an EASF, where the furnace temperature reaches 3000 to 3400° F., conditions exist for the formation of NO_x to a relatively high degree. Recent PSD permits have BACT NO_x limits as high as 0.7 lbs/ton, and there is no information to suggest that EASFs have NO_x emission controls or that suitable controls are available. The proposed EASF system average NO_x emissions are projected at 0.54 lbs/ton. Note that this includes both the NO and NO₂ fractions in the emission stream.

Technologies considered for add-on control of NO_x from traditional combustion sources include selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR) (including both urea injection and ammonia injection), and flue gas recirculation (FGR). None of these technologies have ever been applied to this steel source category, and the application of any of these would be considered experimental technology transfer.

Further, the EPA BACT/LAER Clearinghouse indicates no EASFs are employing add-on control technology for NO_x. Since NO_x emissions are understood to be largely generated in the EASF vessel and DEC during the melt phase, it is assumed for cost effectiveness evaluation purposes that is 100% of the proposed potential emissions are captured by the DEC and only this smaller gas stream, as opposed to the full baghouse gas stream, should be considered for the most cost effective control.

In summary, there is no applicable NO_x control technology to reduce NO_x emissions from that proposed, and the well designed and operated EASF and DEC system constitutes BACT for NO_x control. It can also be pointed out that at the design baghouse flow rate the average outlet NO_x concentration over the complete cycle is expected to be less than 20 ppm, which is lower than most, controlled combustion sources.

BACT Control for Carbon Monoxide

CO is generated to some degree during the charging, melting, slagging and tapping phases of the EASF heat cycle. EPA Publication AP-42 gives an uncontrolled EASF emission factor for CO of 18 lbs/ton. This value is considered to be a baseline condition for evaluating control performance, for a shaft-type furnace utilizing a direct evacuation control (DEC) system. This assumption is based on the inherently higher CO emitting nature of the shaft-type electric arc furnace due to the lower temperature of the gas entering the DEC. Most EASF systems now employ a combination of direct evacuation control (DEC) and capture hood exhaust. CO generated during charging and other times when the DEC is not engaged and CO discharged from the furnace during pressure upsets escapes to the plant air, is quenched and is captured by the hood system. Although captured by the hood, there is essentially no opportunity to control CO captured by the DEC, which is estimated to be about 90 to 95 percent of the total CO generated for a properly designed system.

By nature of the shaft furnace design, the base DEC system is enhanced through the use of an air

gap and a combustion air fan to introduce excess air, which provides for good oxidation of the CO to carbon dioxide. CO control is further improved through the use of a combustion chamber in the duct system to increase residence time. The current BACT level established in NSBS's PSD permit is 7.5 pounds per ton or 2,363 lbs/hr (8-hr average). This represents the typical maximum average emission rate for contemporary shaft preheater-style EASF/LMF steel making processes and is the basis for the control alternative reduction benefit.

NSBS has found some limited success in reducing CO emissions with several process changes. The DEC draft control provides optimal combustion control of the CO emissions without causing over-drafting of the furnace, which could adversely effect NO_x emissions. The water-cooled duct and dropout/combustion chamber systems provide for the time, temperature and mixing conditions necessary to maximize CO combustion. Additional features to maximize CO combustion include low NO_x burners in the DEC ducts and a single drop out/combustion chamber for the two alternating shell exhausts, which increases its utilization and improves maintenance of the appropriate combustion temperature. These furnace, shaft, DEC, gap, chamber, duct and combustion control enhancements provide for excellent CO combustion conditions and are estimated to increase the control efficiency for the CO captured by the DEC resulting average controlled emission level of 7.5 lb/ton or less (including EASF and LMF emissions). The installed capital cost of these DEC improvements to optimize CO combustion is relatively expensive at approximately \$3,250,000. The resulting cost effectiveness is \$63 per ton. NSBS proposes that the corresponding emission rate of 2,362.5 lbs CO/hour represents BACT for the shaft-style furnace.

Further, there are no other add-on control technologies being successfully utilized to further reduce CO emissions. Further manipulation of furnace process conditions to reduce CO is found to have a direct adverse affect on NO_x. NSBS proposes that the DEC gap, dropout/combustion chamber, increased water cooled duct length and DEC exhaust fan flow control system having a maximum emission level of 7.5 lb/ton of steel as an 8-hour average is BACT for the EASF/LMF facility.

BACT Control for Volatile Organic Compounds

Volatile organic compounds (VOC) emissions largely result from the volatilization and partial combustion of oils, plastic and other organic matter in the scrap charge. The VOC emissions are intermittent and predominantly limited to brief periods during scrap charging of the EASF. Control incorporates a good scrap management program to prevent the purchase and charging into the furnace scrap that is heavily oiled or contains significant amounts of combustible materials. Every scrap shipment will be inspected for conformance with the NSBS scrap specification. The emission factor proposed for permitting is equal to EPA's VOC emission factor of 0.35 lb/ton of steel produced. Because of the low average concentration and the large gas flow, flue gas incineration is essentially infeasible. NSBS proposes that a well designed and operated furnace system and a good scrap management plan constitutes BACT for VOC emissions.

Ambient Air Quality Monitoring Requirements

The NSBS facility is located in AQCR 177. The area is attainment for all criteria pollutants. U.S. EPA regulations require the establishment of baseline air quality in the vicinity of the proposed project. This is normally accomplished using representative air quality monitoring data. Air quality monitoring can be utilized to demonstrate that the project will have less than a threshold impact. This threshold impact is identified as the PSD monitoring de minimus level. If the projected impact from the proposed project exceeds this level, ambient data must be collected or existing representative data must be identified.

NSBS has conducted initial ambient air quality modeling to determine the potential impact due to the

proposed modification. The following are the projected impacts:

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Predicted Concentration</u>	<u>Monitoring De minimus Concentration</u>
PM10	24-hour	13.7 ug/m3	10 ug/m3
SO2	24-hour	18.7 ug/m3	13 ug/m3
NOx	Annual	5.0 ug/m3	14 ug/m3
CO	8-hour	522 ug/m3	575 ug/m3
Pb	Quarter	0.013 ug/m3	0.1 ug/m3

Predicted impacts exceed the monitoring threshold for PM10 and SO2 but not for the other pollutants. However, Ohio EPA has identified existing ambient data which it judged to be representative of the current air quality within the impact area of NSBS. Therefore, NSBS would not be required to conduct pre-construction monitoring.

Modeling

Air quality dispersion was conducted to assess the effect of this modification on the national ambient air quality standards (NAAQS) and PSD increments. ISCST3 (version 02035) was used in the regulatory default, urban mode. Five years of meteorological data (Toledo/Flint, 1985-1987, 1990-1991) were used. Building downwash was incorporated into the ISCST3 estimates.

Predicted impacts of SO2, CO, PM10 and NOx were above their corresponding PSD significant impact increments. Additional modeling for compliance with both the NAAQS and PSD increments was required for SO2, CO, PM10 and NOx. No further modeling was necessary for Pb.

PSD Increment

All areas surrounding the NSBS facility are Class II PSD areas. It is the Ohio EPA policy that no individual project consumes more than 50% of the available PSD increment. For CO and Pb, projects are constrained to no more than 25% of the NAAQS. The following is the summary of the impact of increment consuming sources (peak annual quarterly and high-second-high short term impacts):

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Modeled Concentration</u>	<u>PSD Increment Concentration</u>
PM10	24-hour	15.1 ug/m3	30 ug/m3
	Annual	4.4 ug/m3	17 ug/m3
SO2	3-hour	95.4 ug/m3	512 ug/m3
	24-hour	30.8 ug/m3	91 ug/m3
	Annual	3.2ug/m3	20 ug/m3
NOx	Annual	9.0 ug/m3	25 ug/m3
CO	1-hour	2897 ug/m3	10000 ug/m3*

8-hour 987 ug/m3 2500 ug/m3*

* 25% of the NAAQS, Ohio Acceptable Incremental Impact.

NAAQS

Existing sources at the facility, existing sources above the PSD significant rates within the NSBS significant impact area (SIA) and sources greater than 100 tons/year outside of the SIA are modeled to determine the combined impact of existing significant sources. A background value is added to account for minor sources not explicitly included in the modeling.

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Modeled Concentration</u>	<u>NAAQS Concentration</u>	<u>Concentration With Background</u>
PM10	24-hour	15.1 ug/m3	150 ug/m3	70.1 ug/m3
	Annual	4.2 ug/m3	50 ug/m3	22.3 ug/m3
SO2	3-hour	117.6 ug/m3	1300 ug/m3	222.0 ug/m3
	24-hour	42.6 ug/m3	365 ug/m3	92.4 ug/m3
	Annual	5.1 ug/m3	80 ug/m3	20.8 ug/m3
NOx	Annual	9.4 ug/m3	100 ug/m3	42.6 ug/m3
CO	1-hour	2897 ug/m3	40,000 ug/m3	7831 ug/m3
	8-hour	987 ug/m3	10,000 ug/m3	3396 ug/m3

Secondary Impact Analysis

NSBS has demonstrated that the predicted pollutant concentrations throughout the study area are below the secondary NAAQS thresholds. The secondary NAAQS are designed to limit the amount of pollutants in the ambient air to levels below those which could have an adverse impact on human welfare, soils and vegetation. The modeling analyses demonstrate that no significant impacts on human welfare, soils or vegetation will occur from the proposed modification.

Growth: No expansion of employees nor growth in the area population is expected.

Soil and Vegetation: The modeled impact of the project impacts for each of the pollutants are well below the national ambient air quality standards, therefore, no adverse impacts are expected.

Visibility: The NSBS facility is located over 200 km from the nearest PSD Class I area (Dolly Sods and Otter Creek). Primary or secondary pollutants associated with this project are not anticipated to affect local or class I visibility.

Toxics Analysis

The Ohio Air Toxics Policy requires evaluation of increases in air toxics above the one ton/year threshold. Emissions rates are modeled to determine whether they exceed the Maximum Acceptable Ground Level Concentration (MAGLC) which is defined under the Air Toxics Policy.

There is no increase from current state allowables and no new toxics will be emitted, so no new toxic evaluation was performed.



Conclusions

Based upon the analysis of the permit to install application and its supporting documentation provided by NSBS, the Ohio EPA staff has determined the proposed modification will comply with all applicable State and Federal environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to NSBS to modify their Electric Arc Shaft Furnace (EASF) and to redesign the lid of each ladle to increase the annual production up to the true design capacity of the equipment.

State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL
FULTON COUNTY**

CERTIFIED MAIL

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:
Lazarus Gov.
Center

**Application No: 03-17004
Fac ID: 0326000073**

DATE: 11/8/2005

North Star BlueScope Steel, LLC
Melissa Dotson
6767 County Rd. 9
Delta, OH 43515

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed of final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$4750** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern, Manager

Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

NWDO

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PUBLIC NOTICE
OHIO ENVIRONMENTAL PROTECTION AGENCY
ISSUANCE OF DRAFT PERMIT TO INSTALL
SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW
TO NORTH STAR BHP STEEL, LIMITED

Public Notice is hereby given that the Staff of the Ohio Environmental Protection Agency (EPA) has recommended to the Director that the Ohio EPA issue a draft action of a Permit to Install (PTI) to North Star BlueScope Steel, LLC (NSBS), located in Delta, Fulton County, Ohio. The draft action (permit no. 03-17004) was issued on November 8, 2005. This draft permit proposes to remove the synthetic production limit of 2.25 million tons/year established in the initial PTI and to allow for full operation at the true design capacity of the equipment.

It is important to note that the maximum short-term production capacity of the facility (315 tons liquid steel/hour) will not change, however, maximum annual liquid steel production rate will increase from 2.25 million tons/year to 2.7594 million tons/year.

Due to the proposed modifications, increase in actual air emissions of several pollutants will result. The proposed allowable criteria pollutant air emission rates which result from net increases at the facility are listed below, in tons per year.

Pollutant	Net Change	PSD Significance Level
CO	3,839.79	100
NO _x	609.6	40
SO ₂	232.7	40
VOCs	284.66	40
PM ^a	143.33	25
PM ₁₀ ^a	140.12	15
Lead ^a	1.43	0.6

^a Includes fugitive and point emissions.

This facility is subject to the applicable attainment provisions of the Ohio EPA permit to install requirements (OAC 3745-31).

The Ohio EPA allows sources to consume less than one half the available increment. This facility has demonstrated that the impact from the project is less than one half the remaining available increment. Based on this analysis, the project complies with the increment requirements.

Within 30 days from the date of this notice, any interested party may submit comments or request a public hearing. Comments are to be sent to Mark Barber of the Northwest District Office, Ohio Environmental Protection Agency, 347 North Dunbridge Road, Bowling Green, Ohio, 43402.

Copies of the draft permit application and technical support information may be reviewed and/or copies made by first calling to make an appointment at the Northwest District Office at the above address during normal business hours. Telephone number: (419) 352-8461.



**Permit To Install
Terms and Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 03-17004

Application Number: 03-17004
Facility ID: 0326000073
Permit Fee: **To be entered upon final issuance**
Name of Facility: North Star BlueScope Steel, LLC
Person to Contact: Melissa Dotson
Address: 6767 County Rd. 9
Delta, OH 43515

Location of proposed air contaminant source(s) [emissions unit(s)]:
**6767County Road 9
Delta, Ohio**

Description of proposed emissions unit(s):
Modification to P901,P902, P903,P014 to provide for increased production capacity and installation of a new baghouse.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

North Star BlueScope Steel, LLC
PTI Application: 03-17004
Issued: To be entered upon final issuance
Part I - GENERAL TERMS AND CONDITIONS

Facility ID: 0326000073

A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - i. The date, place (as defined in the permit), and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
 - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written

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reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the

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permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

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7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

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8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of

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the Ohio EPA. Progress reports shall contain the following:

- i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
- ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit-To-Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in

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B. State Only Enforceable Permit-To-Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of

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the permit if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

6. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

7. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

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If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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C. Permit-To-Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
S02	345.1
NOx	786.7
CO	10347.5
OC	483.1
PE	214.1
PM10	202.9
Pb	1.06
Hg	0.54

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Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P901 - 315 tons/hr Twin Shaft Twin Shell Electric Arc Furnace (EAF), Modification of PTI #03-13977 issued on 8/5/2003 to allow for an increase in annual throughput.	OAC rule 3745-31-10 through OAC rule 3745-31-20
	OAC Rule 3745-31-05 (A)(3) OAC rule 3745-18-06(F)
	40 CFR Part 60, Subpart AAa
	OAC rule 3745-17-11(B)(2)

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OAC rule 3745-17-07(A)	Applicable Emissions <u>Limitations/Control Measures</u>	46.9 tons Particulate Emissions (PE)/rolling 12-month period (fugitive)
OAC rule 3745-17-08(B)	See A.I.2.a. and A.I.2.j.	
OAC rule 3745-17-07(B)	78.80 lbs Sulfur Dioxide (SO ₂)	35.7 tons PM ₁₀ /rolling 12-month period (fugitive)
OAC rule 3745-23-06 (B)	/hr, 345.1 tons SO ₂ /rolling 12-month period	0.23 ton Pb/rolling 12-month period (fugitive)
OAC rule 3745-21-08(B)	179.60 lbs nitrogen oxides (NO _x)/hr, 786.7 tons NO _x /rolling 12-month period	0.12 ton Hg/rolling 12-month period (fugitive)
	2362.50 lbs Carbon Monoxide (CO)/hr, 10347.8 tons CO/rolling 12-month period	See A.I.2.c.
	110.30 lbs Organic Compounds (OC)/hr, 483.1 tons OC/rolling 12-month period	See A.I.2.e.
	110.30 lbs Organic Compounds (OC)/hr, 483.1 tons OC/rolling 12-month period	See A.I.2.b and A.I.2.d.
	0.0018 grains particulate matter less than 10 microns (PM ₁₀)/dscf, 88.1 tons PM ₁₀ /yr (Stack #1), See A.I.2.i.	See A.I.2.e.
	0.0018 grains particulate matter less than 10 microns (PM ₁₀)/dscf, 88.1 tons PM ₁₀ /yr (Stack #1), See A.I.2.i.	See A.I.2.l.
	0.10 lb Pb/hr, 0.44 tons Pb/yr (Baghouse #1 Stack)	See A.I.2.g.
	0.10 lb Pb/hr, 0.44 tons Pb/yr (Baghouse #1 Stack)	See A.I.2.h.
	0.050 lb Hg/hr, 0.22 ton Hg/yr (Baghouse #1 Stack)	See A.I.2.f.
	0.050 lb Hg/hr, 0.22 ton Hg/yr (Baghouse #1 Stack)	See A.I.2.k.
	0.0018 grains PM ₁₀ /dscf, 79.1 tons PM ₁₀ /yr (Baghouse #2 Stack), See A.I.2.i.	
	0.0018 grains PM ₁₀ /dscf, 79.1 tons PM ₁₀ /yr (Baghouse #2 Stack), See A.I.2.i.	
	0.09 lb Pb/hr, 0.39 tons Pb/yr (Baghouse #2 Stack)	
	0.09 lb Pb/hr, 0.39 tons Pb/yr (Baghouse #2 Stack)	
	0.045 lb Hg/hr, 0.20 ton Hg/yr (Baghouse #2 Stack)	
	0.045 lb Hg/hr, 0.20 ton Hg/yr (Baghouse #2 Stack)	

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2. Additional Terms and Conditions

2.a The permittee shall employ Best Available Control Technology (BACT) for controlling NO_x, SO₂, CO, PE/PM₁₀, Pb, Hg, and Volatile Organic Compounds (VOC)* on this emissions unit. BACT has been determined to be the following determinations have been made for each pollutant:

PE/PM₁₀ Operation of a control system consisting of two baghouses with an overall capture efficiency of 98% and a maximum outlet grain loading of 0.0018 grains /dscf.

CO The operation of a Direct Evacuation Control (DEC) system with air gap, and operation of a cooled post combustion chamber with burners that achieves an overall emission rate of 7.5 lbs of CO/ton of liquid steel produced.**

NO_x The operation of a Direct Evacuation Control (DEC) system with air gap, and operation of a cooled post combustion chamber with burners that achieves an overall emission rate of 0.57 lb of NO_x /ton of liquid steel produced.**

SO₂ The development maintenance, and process operations under a scrap management plan that achieves an overall emission rate of 0.25 lb of SO₂/ton of liquid steel produced.**

VOC The development maintenance, and process operations under a scrap management plan that achieves an overall emission rate of 0.35 lb of VOC/ton of liquid steel produced.**

Pb, Hg Operation of a control system consisting of two baghouses with an overall capture efficiency of 98% and a maximum outlet grain loading of 0.0018 grains /dscf, and the development, maintenance, and operation under a scrap management plan.

* For the purposes of the BACT review, it was assumed all OC was VOC. The regulation of OC effectively regulates VOC.

** These emission rates are for emission units P901, P902, and P903 combined.

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- 2.b** The permittee shall not cause to be discharged into the atmosphere any gasses which:
- i. exit from the stack of the baghouses controlling the EAF and exhibit 3% opacity or greater; and
 - ii. exit from the melt shop due solely to the operation of the EAF and exhibit 6% opacity or greater.
- 2.c** The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through OAC rule 3745-31-20, and 40 CFR Part 60, Subpart AAa.
- 2.d** The standard for particulate matter specified by 40 CFR 60.272a(a)(1) is less stringent than the emission limit established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.
- 2.e** The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.
- 2.f** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 (B) by committing to comply with the BACT requirements established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20 in this Permit to Install.
- On February 14, 2005, OAC rule 3745-23-06 was rescinded; therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.
- 2.g** This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.h** This emissions unit is exempt from the visible emissions limitations specified in OAC rule 3745-17-08(B), pursuant to OAC rule 3745-17-07(B)(11)(e).
- 2.i** All particulate matter emitted is PM₁₀.
- 2.j** The emission limitations established under this rule are for emissions units

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P901, P902, and P903 combined.

- 2.k** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the BACT requirements established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31- 20 in this Permit to Install.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.l** The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.

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Issued: To be entered upon final issuance**II. Operational Restrictions**

1. The permittee shall limit production in emissions units P901 to an average of 315 tons of liquid steel per hour. Annual production from emissions units P901 shall not exceed 2.76 million tons of liquid steel per year, based upon a rolling, 12-month summation of the monthly liquid steel production.

A rolling production limitation for emissions unit P901 was most recently established in Permit to Install (PTI) #03-13977 issued on August 3, 2003 and, as such, rolling production records exist. The applicant shall use the existing records to determine compliance upon startup under this permit. Therefore, it is not necessary to establish federally enforceable restrictions for the first 12 months of operation under the provisions of this permit.

2. The permittee shall implement the following control practices:
 - a. the post combustion chamber ignition burner set point shall be at a minimum of 1.0 MW (megawatt) during any EAF steel making operation;
 - b. the active EAF DEC offgas ignition burner set point shall be at a minimum of 1.0 MW during any EAF steel making operation; and,
 - c. the combustion air fan for the active EAF shell shall be set to ensure excess combustion air.
3. The control system's fan motor amperes set points and damper positions shall be maintained at a level established during the most recent emission testing that demonstrated the emissions unit was in compliance.
4. The permittee shall follow the procedures outlined in its "Scrap Management Program" in order to minimize the use of scrap that contains mercury, lead, oils, plastics, and organic materials that are charged in the EAF. The "Scrap Management Program" was reviewed and approved by Ohio EPA, NWDO and shall be viewed as part of the operational requirements for the permit. Any change to the "Scrap Management Program" that would increase the amount of these compounds present in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by Ohio EPA, NWDO.

III. Monitoring and/or Recordkeeping Requirements

Emissions Unit ID: P901

1. The permittee shall monitor the stack emissions from the two baghouses controlling emissions units P901, P902, and P903. Observations of the opacity of the visible emissions from these control devices shall be performed by a certified visible emission observer as follows:
 - a. The permittee shall conduct visible emission observations in on each control device in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Visible emission observations shall be conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9 for a least three 6-minute periods.
 - c. The opacities shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations shall be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause or location of visible emissions observed during a single incident.
 - d. The permittee shall ensure that an adequate number of personnel on site are "certified" to conduct visible emission observations in accordance with Method 9 procedures. The permittee may choose to have visible emissions observations contracted out, i.e. "certified" personnel may be provided by another company.
 - e. The permittee shall maintain copies of all daily opacity observations required above. The records shall identify the persons responsible for conducting the readings and verification that their Method 9 certifications are up-to-date.
2. The permittee shall monitor the operation of each control system and maintain records in accordance with the following requirements:
 - a. The permittee shall check and record on a once-per-shift basis the control system fan motor amperes and damper positions. The monitoring devices may be installed in any appropriate location such that reproducible monitoring will result. The Ohio EPA, NWDO may require the permittee to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR Part 60.
 - b. When the permittee is required to demonstrate compliance with the visible emission limitation in condition A.1.2.b. and at any other time, the Ohio EPA, NWDO may require that all control system fan motor amperes and damper positions be determined during all periods in which a hood is operated for the purpose of capturing emissions.

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- c. The permittee may petition the Ohio EPA, NWDO for reestablishment of these parameters whenever the permittee can demonstrate to the agency's satisfaction that the operating conditions upon which the parameters were previously established are no longer applicable. Operation at other than baseline values will be considered by the Ohio EPA to be unacceptable operation and maintenance of the control system.
 - d. The permittee shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture systems (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition the Ohio EPA, NWDO to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
 3. Observations of the opacity of the visible emissions from the meltshop shall be performed by a certified visible emission observer as follows:
 - a. The permittee shall conduct visible emission observations in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Shop opacity observations shall be conducted at least once when the furnace is operating in the melting and refining period.
 - c. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop. Shop opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.
 - d. The permittee shall ensure that an adequate number of personnel on site are "certified" to conduct visible emission observations in accordance with Method 9 procedures. The permittee may choose to have visible emissions observations contracted out, i.e. "certified" personnel may be provided by another company.

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- e. The permittee shall maintain copies of all daily opacity observations required above. The records shall identify the persons responsible for conducting the readings and verification that their Method 9 certifications are up-to-date.
4. The permittee shall maintain on site a record of all baghouse dust analysis for both baghouses serving emissions units P901, P902, and P903. At a minimum, the analysis shall contain a record of the Pb content in percent by weight.
 5. The permittee shall maintain daily production records of the following for emissions unit P901:
 - a. the number of hours of operation;
 - b. the tons of liquid steel produced; and,
 - c. the average hourly production rate (b divided by a).
 6. The permittee shall maintain monthly records of the following for emissions unit P901, P902, and P903 combined:
 - a. the tons of liquid steel produced;
 - b. the emissions* of SO₂, CO, OC, and NO_x, and the fugitive emissions**of PE, PM₁₀, Pb, and Hg;
 - c. of annual production of liquid steel, based on a rolling 12-month summation, and
 - d. the annual emissions of SO₂, CO, OC, NO_x, and the fugitive emissions of PE, PM₁₀, Pb, and Hg, based on a rolling 12-month summation.

* The permittee shall use the continuous monitoring requirements in condition A.III.9. to determine monthly CO emissions For all other pollutants, the permittee shall use the emission factors established from the testing requirements in condition A.V.1.

** The fugitive PE emissions shall be calculated from the emission factors 1.4 pounds of PE per ton of steel produced for the EAF (emissions unit P901,with 98% capture)and 0.6 pound of PE per ton of steel produced for the Ladle Metalurgy Furnaces (LMFs, emissions units P902 and P903, with 99% capture) applied to the monthly production rates. Fugitive PM₁₀ shall be calculated

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assuming 76% by weight of all PE is PM₁₀. For fugitive Pb and Hg, the permittee shall calculate emissions by applying the weight percentages established by the most recent testing/analysis which has been performed for these metals.

7. The permittee shall maintain monthly records of the following for emissions unit P901, P902, and P903 combined:
 - a. the hours of operation;
 - b. the stack emissions* of PM₁₀, Pb, and Hg;
 - c. the annual stack emissions of PM₁₀, Pb, and Hg, based on a rolling 12-month summation.
- * The permittee shall calculate the emission rates for each baghouse stack. For stack PM₁₀, the permittee shall use the hourly emission rates established in condition A.V.1. For stack Pb and Hg, the permittee shall calculate emissions by applying the weight percentages established by the most recent testing/analysis which has been performed for these metals.
8. The permittee shall maintain daily records of all instances where the computer program for monitoring the set points established in condition A.II.2. above for emissions unit P901 required cessation of, or delays in, furnace operations. The records shall include the reasons for any delay and/or cessation in furnace operations, the duration, a description of the corrective actions taken, and a determination whether or not a malfunction resulting in a violation of a condition of the permit has occurred.
9. The permittee shall operate and maintain equipment to continuously monitor and record CO from both exhaust systems serving this emissions unit, in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of all data obtained by the continuous CO monitoring systems including, but not limited to, parts per million CO on an instantaneous (one minute) basis, emission of CO in lbs per hour in the appropriate averaging period (8-hour block), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

IV. Reporting Requirements

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1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. any exceedance of the production restrictions contained in condition A.II.1.;
 - b. the rolling, 12-month emissions limitations specified in condition A.I.1. of this permit.
 - c. all periods of time during which the control system's set points established in condition A.II.2. were not met; and
 - d. all periods of time during which any of the control system fan motor ampere values or damper positions established in condition A.II.3. were not met.
 - e. all periods of time during which the scrap was not handled in accordance with the permittee's "Scrap Management Program".

The permittee shall submit these deviation reports in accordance with the general terms and conditions of this permit.

2. The permittee shall submit a semiannual written report of all exceedances of the opacity restrictions contained in condition A.I.2.b.. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity exceeds these limits. If no deviations occurred during the reporting period, the permittee shall submit a report which states that no deviations occurred. These reports shall be submitted by January 31st and July 31st of each year and shall cover the previous six month period.
3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, NWDO documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of CO values in excess of any limitations specified in the terms and conditions of this permit. These reports shall also contain the total CO emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA NWDO documenting any continuous CO monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60 section 60.7. The summary shall be submitted to the Ohio EPA NWDO within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions units P901, P902, and P903 in accordance with the following requirements:
 - a. The emission testing shall be conducted within 180 days after the installation of the second baghouse controlling these emissions units.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, CO, SO₂, OC, and Hg, the allowable outlet grain loadings for PM₁₀, and the opacity requirements specified in A.I.2.b.i. and A.I.2.b.ii. The mass emission testing shall also be used to demonstrate compliance with the lb/ton of liquid steel emission rates established in condition A.I.2.a.
 - c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates: for NO_x, Methods 1 through 4 and 7 of 40 CFR, Part 60, Appendix A; for CO, Methods 1 through 4 and 10 of 40 CFR, Part 60, Appendix A; for SO₂, Methods 1 through 4 and 6 of 40 CFR, Part 60, Appendix A; for PM₁₀, Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M, for OC, Methods 1 through 4 and Method 18, 25 or 25A of 40 CFR, Part 60, Appendix A; for Hg*, Methods 1 through 5 and 29 of 40 CFR, Part 60, Appendix A; and for opacity, Method 9 of 40 CFR, Part 60, Appendix A. Testing for NO_x, CO, SO₂, and OC must be performed on both baghouses simultaneously. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.
 - d. During the performance testing to demonstrate compliance with the outlet grain

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loading for PM₁₀, and the opacity requirements, the following additional testing requirements shall be employed:

- i. The sampling time and sample volume for each Method 201 run shall be at least 4 hours and 4.50 dscm (160 dscf) and the sampling time shall include an integral number of heats.
- ii. Opacity measurements shall be taken concurrently with each Method 201 run.
- iii. The test runs shall be conducted concurrently, unless inclement weather interferes.
- iv. The permittee shall obtain and record the following information:
 - (a). all control system fan motor amperes and damper positions during all periods in which a hood is operated for the purpose of capturing emissions from the EAF's;
 - (b). charge weights and materials and tap weights and materials;
 - (c). heat times, including start and stop times, and a log of process operation, including periods of no operation during testing; and
 - (d). control device operation log.
- e. The tests shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Ohio EPA, NWDO.
- f. Except as specified in condition A.V.1.d., the sampling time for each run shall be 8 hours in duration.
- g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA's refusal to accept the results of the emission tests.
- h. Personnel from the Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the

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performance of the control equipment.

- i. A comprehensive written report on the results of the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA NWDO.
 - * As part of the testing for Hg the permittee shall determine the weight percentages of Hg as compared to PM₁₀, and the total mass emission rate for PM₁₀. Testing for Hg shall be performed under "worst case" conditions.
2. Compliance with the emission limitations established in this permit shall be determined in accordance with the following methods:
- a. Emission Limitation:
 78.80 lbs SO₂ /hr, 0.25 lb of SO₂ /ton of liquid steel produced
 179.60 lbs NO_x/hr, 0.57 lb of NO_x /ton of liquid steel produced
 2362.50 lbs CO/hr, 7.5 lbs of CO/ton of liquid steel produced
 110.30 lbs OC/hr, 0.35 lb of VOC/ton of liquid steel produced

 Applicable Compliance Method:
 Compliance with the hourly CO mass emission limitations shall be determined in accordance with the test methods and procedures specified in condition A.V.1. and the monitoring requirements specified in condition A.III.9. Compliance with the other mass emission limitations and lbs/ton of liquid steel produced limitations shall be determined in accordance with the test methods and procedures specified in condition A.V.1.
 - b. Emission Limitation:
Baghouse #1 Stack Emissions
 0.0018 grains PM₁₀/dscf, 88.1 tons PM₁₀/rolling 12-month period
 0.10 lb Pb/hr, 0.44 tons Pb/rolling 12-month period
 0.050 lb Hg/hr, 0.22 ton Hg/rolling 12-month period

Baghouse #2 Stack Emissions
 0.0018 grains PM₁₀/dscf, 79.1 tons PM₁₀/rolling 12-month period
 0.09 lb Pb/hr, 0.39 tons Pb/rolling 12-month period
 0.045 lb Hg/hr, 0.20 ton Hg/rolling 12-month period

 Applicable Compliance Method:
 Compliance with the allowable outlet grain loading and the hourly mass emission limitations for Hg shall be determined in accordance with the test methods and procedures specified in condition A.V.1. The stack Pb emissions were established based on a maximum weight percentage of the PM₁₀

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limit of 0.5% for Pb and will be verified in accordance with the analysis specified in condition A.III.4. Compliance with the annual emission limitations shall be determined in accordance with record keeping procedures specified in condition A.III.7.

- c. Emission Limitation:
345.1 tons SO₂/rolling 12-month period
786.7 tons NO_x/rolling 12-month period
10347.8 tons CO/rolling 12-month period
483.1 tons OC/rolling 12-month period
- Applicable Compliance Method:
Compliance with the annual emission limitations shall be determined in accordance with record keeping procedures specified in condition A.III.6.
- d. Emission Limitation:
Fugitive Emissions
46.9 tons PE/rolling 12-month period
35.7 tons PM₁₀/rolling 12-month period
0.23 ton Pb/rolling 12-month period
0.12 ton Hg/rolling 12-month period
- Applicable Compliance Method:
Compliance with the annual emission limitations shall be determined in accordance with the record keeping procedures specified in condition A.III.7.
- e. Emission Limitation:
The permittee shall not cause to be discharged into the atmosphere any gasses which exit from the stack of the baghouse controlling the EAF and exhibit 3% opacity or greater; and
- Applicable Compliance Method:
Compliance with the annual emission limitation shall be determined in accordance with record keeping procedures specified in condition A.III.1.
- f. Emission Limitation:
The permittee shall not cause to be discharged into the atmosphere any gasses which exit from the melt shop due solely to the operation of the EAF and exhibit 6% opacity or greater.
- Applicable Compliance Method:

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Compliance with the annual emission limitation shall be determined in accordance with record keeping procedures specified in condition A.III.3.

VI. Miscellaneous Requirements

1. An alternative exhaust gas discharge configuration for the baghouse controlling the EAF may be used if found to be acceptable by Ohio EPA, pursuant to the requirements of federal and state rules. No less than 60 days prior to changing the exhaust gas discharge configuration, a complete description of the changed must be submitted to Ohio EPA. The final plan must be approved by Ohio EPA prior to any alteration of the exhaust gas discharge configuration. The above exhaust gas discharge requirement is based on the proposed emission limits for the entire plant.
2. Within 180 days of the effective date of this permit, the permittee shall update the existing written quality assurance/quality control plan for the new and existing continuous CO monitoring system designed to ensure continuous valid and representative readings of CO. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.
3. A statement of certification of the existing continuous CO monitoring system shall be maintained on site and shall consist of a letter from the Ohio EPA detailing the results of an Agency review of the certification tests and a statement by the Agency that the system is considered certified in accordance with the requirements of 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Proof of certification shall be made available to the Ohio EPA NWDO upon request.
4. Prior to the installation of the new continuous CO monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 and 6 for approval by the Ohio EPA, Central Office.
5. Within 180 days of the installation of the second baghouse controlling this emissions unit, the permittee shall conduct certification tests of the new continuous CO monitoring system pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Personnel from the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days after the test is completed. Copies of the test results shall be sent to the appropriate Ohio EPA District Office or local air agency and the Ohio EPA, Central Office. Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio

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EPA Central Office that the system meets all requirements of ORC section 3704.03(l) and 40 CFR Part 60, Appendix B, Performance Specification 4 and 6.

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P901 - 315 tons/hr Twin Shaft Twin Shell Electric Arc Furnace (EAF)		See B.III.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The Permit to Install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the Permit to Install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the Permit to Install application and the Screen3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen3 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutants:

Pollutant: Manganese
TLV (mg/m3): 200

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Maximum Hourly Emission Rate (lbs/hr): 1.13

Predicted 1-Hour Maximum Ground-Level Concentration (mg/m³): 2.08

MAGLC (mg/m³): 4.76

Pollutant: Zinc

TLV (mg/m³): 2000

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Maximum Hourly Emission Rate (lbs/hr): 21.0

Predicted 1-Hour Maximum Ground-Level Concentration (mg/m³): 38.7MAGLC (mg/m³): 47.6

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
 - a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

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- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P902 - Ladle Melt Furnace -Modification of PTI #03-13977 issued on 8/5/2003 to allow for an increase in annual throughput.	OAC rule 3745-31-10 through OAC rule 3745-31-20
	OAC Rule 3745-31-05 (A)(3) OAC rule 3745-18-06(F)
	40 CFR Part 60, Subpart AAa
	OAC rule 3745-17-11(B)(2)

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OAC rule	Applicable Emissions <u>Limitations/Control Measures</u>	
OAC rule 3745-17-07(A)		46.9 tons Particulate Emissions (PE)/rolling 12-month period (fugitive)
OAC rule 3745-17-08(B)	See A.I.2.a. and A.I.2.j.	
OAC rule 3745-17-07(B)	78.80 lbs Sulfur Dioxide (SO ₂) /hr, 345.1 tons SO ₂ /rolling 12-month period	35.7 tons PM ₁₀ /rolling 12-month period (fugitive)
OAC rule 3745-23-06 (B)		0.23 ton Pb/rolling 12-month period (fugitive)
OAC rule 3745-21-08(B)	179.60 lbs nitrogen oxides (NO _x)/hr, 786.7 tons NO _x /rolling 12-month period	0.12 ton Hg/rolling 12-month period (fugitive)
	2362.50 lbs Carbon Monoxide (CO)/hr, 10347.8 tons CO/rolling 12-month period	See A.I.2.c. See A.I.2.e.
	110.30 lbs Organic Compounds (OC)/hr, 483.1 tons OC/rolling 12-month period	See A.I.2.b and A.I.2.d. See A.I.2.e.
	0.0018 grains particulate matter less than 10 microns (PM ₁₀)/dscf, 88.1 tons PM ₁₀ /yr (Stack #1), See A.I.2.i.	See A.I.2.l. See A.I.2.g. See A.I.2.h.
	0.10 lb Pb/hr, 0.44 tons Pb/yr (Baghouse #1 Stack)	See A.I.2.f.
	0.050 lb Hg/hr, 0.22 ton Hg/yr (Baghouse #1 Stack)	See A.I.2.k.
	0.0018 grains PM ₁₀ /dscf, 79.1 tons PM ₁₀ /yr (Baghouse #2 Stack), See A.I.2.i.	
	0.09 lb Pb/hr, 0.39 tons Pb/yr (Baghouse #2 Stack)	
	0.045 lb Hg/hr, 0.20 ton Hg/yr (Baghouse #2 Stack)	

2. Additional Terms and Conditions

2.a The permittee shall employ Best Available Control Technology (BACT) for controlling NO_x, SO₂, CO, PE/PM₁₀, Pb, Hg, and Volatile Organic Compounds (VOC)* on this emissions unit. BACT has been determined to be the following determinations have been made for each pollutant:

- PE/PM₁₀ Operation of a control system consisting of two baghouses with an overall capture efficiency of 98% and a maximum outlet grain loading of 0.0018 grains /dscf.
- CO The operation of a Direct Evacuation Control (DEC) system with air gap, and operation of a cooled post combustion chamber with burners that achieves an overall emission rate of 7.5 lbs of CO/ton of liquid steel produced.**
- NO_x The operation of a Direct Evacuation Control (DEC) system with air gap, and operation of a cooled post combustion chamber with burners that achieves an overall emission rate of 0.57 lb of NO_x /ton of liquid steel produced.**
- SO₂ The development maintenance, and process operations under a scrap management plan that achieves an overall emission rate of 0.25 lb of SO₂/ton of liquid steel produced.**
- VOC The development maintenance, and process operations under a scrap management plan that achieves an overall emission rate of 0.35 lb of VOC/ton of liquid steel produced.**
- Pb, Hg Operation of a control system consisting of two baghouses with an overall capture efficiency of 98% and a maximum outlet grain loading of 0.0018 grains /dscf, and the development, maintenance, and operation under a scrap management plan.

* For the purposes of the BACT review, it was assumed all OC was VOC. The regulation of OC effectively regulates VOC.

** These emission rates are for emission units P901, P902, and P903 combined.

2.b The permittee shall not cause to be discharged into the atmosphere any gasses which:

- i. exit from the stack of the baghouses controlling the EAF and exhibit 3%

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- opacity or greater; and
- ii. exit from the melt shop due solely to the operation of the EAF and exhibit 6% opacity or greater.
- 2.c** The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through OAC rule 3745-31-20, and 40 CFR Part 60, Subpart AAa.
- 2.d** The standard for particulate matter specified by 40 CFR 60.272a(a)(1) is less stringent than the emission limit established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.
- 2.e** The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.
- 2.f** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 (B) by committing to comply with the BACT requirements established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20 in this Permit to Install.
- On February 14, 2005, OAC rule 3745-23-06 was rescinded; therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.
- 2.g** This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.h** This emissions unit is exempt from the visible emissions limitations specified in OAC rule 3745-17-08(B), pursuant to OAC rule 3745-17-07(B)(11)(e).
- 2.i** All particulate matter emitted is PM₁₀.
- 2.j** The emission limitations established under this rule are for emissions units P901, P902, and P903 combined.

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- 2.k** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the BACT requirements established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20 in this Permit to Install.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.l** The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.

Issued: To be entered upon final issuance**II. Operational Restrictions**

1. The permittee shall limit production in emissions units P901 to an average of 315 tons of liquid steel per hour. Annual production from emissions units P901 shall not exceed 2.76 million tons of liquid steel per year, based upon a rolling, 12-month summation of the monthly liquid steel production.

A rolling production limitation for emissions unit P901 was most recently established in Permit to Install (PTI) #03-13977 issued on August 3, 2003 and, as such, rolling production records exist. The applicant shall use the existing records to determine compliance upon startup under this permit. Therefore, it is not necessary to establish federally enforceable restrictions for the first 12 months of operation under the provisions of this permit.

2. The permittee shall implement the following control practices:
 - a. the post combustion chamber ignition burner set point shall be at a minimum of 1.0 MW (megawatt) during any EAF steel making operation;
 - b. the active EAF DEC offgas ignition burner set point shall be at a minimum of 1.0 MW during any EAF steel making operation; and,
 - c. the combustion air fan for the active EAF shell shall be set to ensure excess combustion air.
3. The control system's fan motor amperes set points and damper positions shall be maintained at a level established during the most recent emission testing that demonstrated the emissions unit was in compliance.
4. The permittee shall follow the procedures outlined in its "Scrap Management Program" in order to minimize the use of scrap that contains mercury, lead, oils, plastics, and organic materials that are charged in the EAF. The "Scrap Management Program" was reviewed and approved by Ohio EPA, NWDO and shall be viewed as part of the operational requirements for the permit. Any change to the "Scrap Management Program" that would increase the amount of these compounds present in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by Ohio EPA, NWDO.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall monitor the stack emissions from the two baghouses controlling emissions units P901, P902, and P903. Observations of the opacity of the visible emissions from these control devices shall be performed by a certified visible emission observer as follows:
 - a. The permittee shall conduct visible emission observations in on each control device in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Visible emission observations shall be conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9 for a least three 6-minute periods.
 - c. The opacities shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations shall be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause or location of visible emissions observed during a single incident.
 - d. The permittee shall ensure that an adequate number of personnel on site are "certified" to conduct visible emission observations in accordance with Method 9 procedures. The permittee may choose to have visible emissions observations contracted out, i.e. "certified" personnel may be provided by another company.
 - e. The permittee shall maintain copies of all daily opacity observations required above. The records shall identify the persons responsible for conducting the readings and verification that their Method 9 certifications are up-to-date.
2. The permittee shall monitor the operation of each control system and maintain records in accordance with the following requirements:
 - a. The permittee shall check and record on a once-per-shift basis the control system fan motor amperes and damper positions. The monitoring devices may be installed in any appropriate location such that reproducible monitoring will result. The Ohio EPA, NWDO may require the permittee to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR Part 60.
 - b. When the permittee is required to demonstrate compliance with the visible emission limitation in condition A.I.2.b. and at any other time, the Ohio EPA, NWDO may require that all control system fan motor amperes and damper positions be determined during all periods in which a hood is operated for the purpose of capturing emissions.

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- c. The permittee may petition the Ohio EPA, NWDO for reestablishment of these parameters whenever the permittee can demonstrate to the agency's satisfaction that the operating conditions upon which the parameters were previously established are no longer applicable. Operation at other than baseline values will be considered by the Ohio EPA to be unacceptable operation and maintenance of the control system.
 - d. The permittee shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture systems (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition the Ohio EPA, NWDO to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
 3. Observations of the opacity of the visible emissions from the meltshop shall be performed by a certified visible emission observer as follows:
 - a. The permittee shall conduct visible emission observations in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Shop opacity observations shall be conducted at least once when the furnace is operating in the melting and refining period.
 - c. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop. Shop opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.
 - d. The permittee shall ensure that an adequate number of personnel on site are "certified" to conduct visible emission observations in accordance with Method 9 procedures. The permittee may choose to have visible emissions observations contracted out, i.e. "certified" personnel may be provided by another company.

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- e. The permittee shall maintain copies of all daily opacity observations required above. The records shall identify the persons responsible for conducting the readings and verification that their Method 9 certifications are up-to-date.
4. The permittee shall maintain on site a record of all baghouse dust analysis for both baghouses serving emissions units P901, P902, and P903. At a minimum, the analysis shall contain a record of the Pb content in percent by weight.
 5. The permittee shall maintain daily production records of the following for emissions unit P901:
 - a. the number of hours of operation;
 - b. the tons of liquid steel produced; and,
 - c. the average hourly production rate (b divided by a).
 6. The permittee shall maintain monthly records of the following for emissions unit P901, P902, and P903 combined:
 - a. the tons of liquid steel produced;
 - b. the emissions* of SO₂, CO, OC, and NO_x, and the fugitive emissions**of PE, PM₁₀, Pb, and Hg;
 - c. of annual production of liquid steel, based on a rolling 12-month summation, and
 - d. the annual emissions of SO₂, CO, OC, NO_x, and the fugitive emissions of PE, PM₁₀, Pb, and Hg, based on a rolling 12-month summation.

* The permittee shall use the continuous monitoring requirements in condition A.III.9. to determine monthly CO emissions For all other pollutants, the permittee shall use the emission factors established from the testing requirements in condition A.V.1.

** The fugitive PE emissions shall be calculated from the emission factors 1.4 pounds of PE per ton of steel produced for the EAF (emissions unit P901, with 98% capture) and 0.6 pound of PE per ton of steel produced for the Ladle Metalurgy Furnaces (LMFs, emissions units P902 and P903, with 99% capture) applied to the monthly production rates. Fugitive PM₁₀ shall be calculated assuming 76% by weight of all PE is PM₁₀. For fugitive Pb and Hg, the permittee shall calculate emissions by applying the weight percentages established by the most recent testing/analysis which has been performed for these metals.
 7. The permittee shall maintain monthly records of the following for emissions unit P901, P902, and P903 combined:

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- a. the hours of operation;
- b. the stack emissions* of PM₁₀, Pb, and Hg;
- c. the annual stack emissions of PM₁₀, Pb, and Hg, based on a rolling 12-month summation.

* The permittee shall calculate the emission rates for each baghouse stack. For stack PM₁₀, the permittee shall use the hourly emission rates established in condition A.V.1. For stack Pb and Hg, the permittee shall calculate emissions by applying the weight percentages established by the most recent testing/analysis which has been performed for these metals.

8. The permittee shall maintain daily records of all instances where the computer program for monitoring the set points established in condition A.II.2. above for emissions unit P901 required cessation of, or delays in, furnace operations. The records shall include the reasons for any delay and/or cessation in furnace operations, the duration, a description of the corrective actions taken, and a determination whether or not a malfunction resulting in a violation of a condition of the permit has occurred.
9. The permittee shall operate and maintain equipment to continuously monitor and record CO from both exhaust systems serving this emissions unit, in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of all data obtained by the continuous CO monitoring systems including, but not limited to, parts per million CO on an instantaneous (one minute) basis, emission of CO in lbs per hour in the appropriate averaging period (8-hour block), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. any exceedance of the production restrictions contained in condition A.II.1.;
 - b. the rolling, 12-month emissions limitations specified in condition A.I.1. of this

permit.

- c. all periods of time during which the control system's set points established in condition A.II.2 were not met; and
- d. all periods of time during which any of the control system fan motor ampere values or damper positions established in condition A.II.3. were not met.
- e. all periods of time during which the scrap was not handled in accordance with the permittee's "Scrap Management Program".

The permittee shall submit these deviation reports in accordance with the general terms and conditions of this permit.

2. The permittee shall submit a semiannual written report of all exceedances of the opacity restrictions contained in condition A.I.2.b.. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity exceeds these limits. If no deviations occurred during the reporting period, the permittee shall submit a report which states that no deviations occurred. These reports shall be submitted by January 31st and July 31st of each year and shall cover the previous six month period.
3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, NWDO documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of CO values in excess of any limitations specified in the terms and conditions of this permit. These reports shall also contain the total CO emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA NWDO documenting any continuous CO monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly

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report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60 section 60.7. The summary shall be submitted to the Ohio EPA NWDO within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions units P901, P902, and P903 in accordance with the following requirements:
 - a. The emission testing shall be conducted within 180 days after the installation of the second baghouse controlling these emissions units.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, CO, SO₂, OC, and Hg, the allowable outlet grain loadings for PM₁₀, and the opacity requirements specified in A.1.2.b.i.

and A.1.2.b.ii. The mass emission testing shall also be used to demonstrate compliance with the lb/ton of liquid steel emission rates established in condition A.1.2.a.

- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates: for NO_x, Methods 1 through 4 and 7 of 40 CFR, Part 60, Appendix A; for CO, Methods 1 through 4 and 10 of 40 CFR, Part 60, Appendix A; for SO₂, Methods 1 through 4 and 6 of 40 CFR, Part 60, Appendix A; for PM₁₀, Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M, for OC, Methods 1 through 4 and Method 18, 25 or 25A of 40 CFR, Part 60, Appendix A; for Hg*, Methods 1 through 5 and 29 of 40 CFR, Part 60, Appendix A; and for opacity, Method 9 of 40 CFR, Part 60, Appendix A. Testing for NO_x, CO, SO₂, and OC must be performed on both baghouses simultaneously. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.
- d. During the performance testing to demonstrate compliance with the outlet grain loading for PM₁₀, and the opacity requirements, the following additional testing requirements shall be employed:
 - i. The sampling time and sample volume for each Method 201 run shall be at least 4 hours and 4.50 dscm (160 dscf) and the sampling time shall include an integral number of heats.
 - ii. Opacity measurements shall be taken concurrently with each Method 201 run.
 - iii. The test runs shall be conducted concurrently, unless inclement weather interferes.
 - iv. The permittee shall obtain and record the following information:
 - (a). all control system fan motor amperes and damper positions during all periods in which a hood is operated for the purpose of capturing emissions from the EAF's;
 - (b). charge weights and materials and tap weights and materials;
 - (c). heat times, including start and stop times, and a log of process operation, including periods of no operation during testing; and
 - (d). control device operation log.
- e. The tests shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Ohio EPA,

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NWDO.

- f. Except as specified in condition A.V.1.d., the sampling time for each run shall be 8 hours in duration.
 - g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA's refusal to accept the results of the emission tests.
 - h. Personnel from the Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - i. A comprehensive written report on the results of the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA NWDO.
 - * As part of the testing for Hg the permittee shall determine the weight percentages of Hg as compared to PM₁₀, and the total mass emission rate for PM₁₀. Testing for Hg shall be performed under "worst case" conditions.
2. Compliance with the emission limitations established in this permit shall be determined in accordance with the following methods:
- a. Emission Limitation:
 78.80 lbs SO₂ /hr, 0.25 lb of SO₂ /ton of liquid steel produced
 179.60 lbs NO_x/hr, 0.57 lb of NO_x /ton of liquid steel produced
 2362.50 lbs CO/hr, 7.5 lbs of CO/ton of liquid steel produced
 110.30 lbs OC/hr, 0.35 lb of VOC/ton of liquid steel produced
- Applicable Compliance Method:
 Compliance with the hourly CO mass emission limitations shall be determined in

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accordance with the test methods and procedures specified in condition A.V.1. and the monitoring requirements specified in condition A.III.9. Compliance with the other mass emission limitations and lbs/ton of liquid steel produced limitations shall be determined in accordance with the test methods and procedures specified in condition A.V.1.

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- b. Emission Limitation:
Baghouse #1 Stack Emissions
0.0018 grains PM₁₀/dscf, 88.1 tons PM₁₀/rolling 12-month period
0.10 lb Pb/hr, 0.44 tons Pb/rolling 12-month period
0.050 lb Hg/hr, 0.22 ton Hg/rolling 12-month period

Baghouse #2 Stack Emissions
0.0018 grains PM₁₀/dscf, 79.1 tons PM₁₀/rolling 12-month period
0.09 lb Pb/hr, 0.39 tons Pb/rolling 12-month period
0.045 lb Hg/hr, 0.20 ton Hg/rolling 12-month period

Applicable Compliance Method:

Compliance with the allowable outlet grain loading and the hourly mass emission limitations for Hg shall be determined in accordance with the test methods and procedures specified in condition A.V.1. The stack Pb emissions were established based on a maximum weight percentage of the PM₁₀ limit of 0.5% for Pb and will be verified in accordance with the analysis specified in condition A.III.4. Compliance with the annual emission limitations shall be determined in accordance with record keeping procedures specified in condition A.III.7.

- c. Emission Limitation:
345.1 tons SO₂/rolling 12-month period
786.7 tons NO_x/rolling 12-month period
10347.8 tons CO/rolling 12-month period
483.1 tons OC/rolling 12-month period

Applicable Compliance Method:

Compliance with the annual emission limitations shall be determined in accordance with record keeping procedures specified in condition A.III.6.

- d. Emission Limitation:
Fugitive Emissions
46.9 tons PE/rolling 12-month period
35.7 tons PM₁₀/rolling 12-month period
0.23 ton Pb/rolling 12-month period
0.12 ton Hg/rolling 12-month period

Applicable Compliance Method:

Compliance with the annual emission limitations shall be determined in accordance with the record keeping procedures specified in condition A.III.7.

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e. Emission Limitation:

The permittee shall not cause to be discharged into the atmosphere any gasses which exit from the stack of the baghouse controlling the EAF and exhibit 3% opacity or greater; and

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Applicable Compliance Method:

Compliance with the annual emission limitation shall be determined in accordance with record keeping procedures specified in condition A.III.1.

e. Emission Limitation:

The permittee shall not cause to be discharged into the atmosphere any gasses which exit from the melt shop due solely to the operation of the EAF and exhibit 6% opacity or greater.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be determined in accordance with record keeping procedures specified in condition A.III.3.

VI. Miscellaneous Requirements

1. An alternative exhaust gas discharge configuration for the baghouse controlling the EAF may be used if found to be acceptable by Ohio EPA, pursuant to the requirements of federal and state rules. No less than 60 days prior to changing the exhaust gas discharge configuration, a complete description of the changed must be submitted to Ohio EPA. The final plan must be approved by Ohio EPA prior to any alteration of the exhaust gas discharge configuration. The above exhaust gas discharge requirement is based on the proposed emission limits for the entire plant.
2. Within 180 days of the effective date of this permit, the permittee shall update the existing written quality assurance/quality control plan for the new and existing continuous CO monitoring system designed to ensure continuous valid and representative readings of CO. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.
3. A statement of certification of the existing continuous CO monitoring system shall be maintained on site and shall consist of a letter from the Ohio EPA detailing the results of an Agency review of the certification tests and a statement by the Agency that the system is considered certified in accordance with the requirements of 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Proof of certification shall be made available to the Ohio EPA NWDO upon request.
4. Prior to the installation of the new continuous CO monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in

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accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 and 6 for approval by the Ohio EPA, Central Office.

5. Within 180 days of the installation of the second baghouse controlling this emissions unit, the permittee shall conduct certification tests of the new continuous CO monitoring system pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Personnel from the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days after the test is completed. Copies of the test results shall be sent to the appropriate Ohio EPA District Office or local air agency and the Ohio EPA, Central Office. Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 4 and 6.

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P902 - Ladle Melt Furnace - Modification of PTI #03-13977 issued on 8/5/2003 to allow for an increase in annual throughput.		See B.III.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. The Permit to Install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the Permit to Install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the Permit to Install application and the Screen3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen3 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutants:

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Pollutant: Manganese

TLV (mg/m³): 200

Maximum Hourly Emission Rate (lbs/hr): 1.13

Predicted 1-Hour Maximum Ground-Level Concentration (mg/m³): 2.08

MAGLC (mg/m³): 4.76

Pollutant: Zinc

TLV (mg/m³): 2000

Maximum Hourly Emission Rate (lbs/hr): 21.0

Predicted 1-Hour Maximum Ground-Level Concentration (mg/m³): 38.7

MAGLC (mg/m³): 47.6

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
 - a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis

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level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
 - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P903 - Ladle Melt Furnace -Modification of PTI #03-13977 issued on 8/5/2003 to allow for an increase in annual throughput.	OAC rule 3745-31-10 through OAC rule 3745-31-20
	OAC Rule 3745-31-05 (A)(3) OAC rule 3745-18-06(F)
	40 CFR Part 60, Subpart AAa
	OAC rule 3745-17-11(B)(2)

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OAC rule	Applicable Emissions <u>Limitations/Control Measures</u>	
OAC rule 3745-17-07(A)		46.9 tons Particulate Emissions (PE)/rolling 12-month period (fugitive)
OAC rule 3745-17-08(B)	See A.I.2.a. and A.I.2.j.	
OAC rule 3745-17-07(B)	78.80 lbs Sulfur Dioxide (SO ₂) /hr, 345.1 tons SO ₂ /rolling 12-month period	35.7 tons PM ₁₀ /rolling 12-month period (fugitive)
OAC rule 3745-23-06 (B)		0.23 ton Pb/rolling 12-month period (fugitive)
OAC rule 3745-21-08(B)	179.60 lbs nitrogen oxides (NO _x)/hr, 786.7 tons NO _x /rolling 12-month period	0.12 ton Hg/rolling 12-month period (fugitive)
	2362.50 lbs Carbon Monoxide (CO)/hr, 10347.8 tons CO/rolling 12-month period	See A.I.2.c. See A.I.2.e.
	110.30 lbs Organic Compounds (OC)/hr, 483.1 tons OC/rolling 12-month period	See A.I.2.b and A.I.2.d. See A.I.2.e.
	0.0018 grains particulate matter less than 10 microns (PM ₁₀)/dscf, 88.1 tons PM ₁₀ /yr (Stack #1), See A.I.2.i.	See A.I.2.l. See A.I.2.g. See A.I.2.h.
	0.10 lb Pb/hr, 0.44 tons Pb/yr (Baghouse #1 Stack)	See A.I.2.f.
	0.050 lb Hg/hr, 0.22 ton Hg/yr (Baghouse #1 Stack)	See A.I.2.k.
	0.0018 grains PM ₁₀ /dscf, 79.1 tons PM ₁₀ /yr (Baghouse #2 Stack), See A.I.2.i.	
	0.09 lb Pb/hr, 0.39 tons Pb/yr (Baghouse #2 Stack)	
	0.045 lb Hg/hr, 0.20 ton Hg/yr (Baghouse #2 Stack)	

2. Additional Terms and Conditions

2.a The permittee shall employ Best Available Control Technology (BACT) for controlling NO_x, SO₂, CO, PE/PM₁₀, Pb, Hg, and Volatile Organic Compounds (VOC)* on this emissions unit. BACT has been determined to be the following determinations have been made for each pollutant:

- PE/PM₁₀ Operation of a control system consisting of two baghouses with an overall capture efficiency of 98% and a maximum outlet grain loading of 0.0018 grains /dscf.
- CO The operation of a Direct Evacuation Control (DEC) system with air gap, and operation of a cooled post combustion chamber with burners that achieves an overall emission rate of 7.5 lbs of CO/ton of liquid steel produced.**
- NO_x The operation of a Direct Evacuation Control (DEC) system with air gap, and operation of a cooled post combustion chamber with burners that achieves an overall emission rate of 0.57 lb of NO_x /ton of liquid steel produced.**
- SO₂ The development maintenance, and process operations under a scrap management plan that achieves an overall emission rate of 0.25 lb of SO₂/ton of liquid steel produced.**
- VOC The development maintenance, and process operations under a scrap management plan that achieves an overall emission rate of 0.35 lb of VOC/ton of liquid steel produced.**
- Pb, Hg Operation of a control system consisting of two baghouses with an overall capture efficiency of 98% and a maximum outlet grain loading of 0.0018 grains /dscf, and the development, maintenance, and operation under a scrap management plan.

* For the purposes of the BACT review, it was assumed all OC was VOC. The regulation of OC effectively regulates VOC.

** These emission rates are for emission units P901, P902, and P903 combined.

2.b The permittee shall not cause to be discharged into the atmosphere any gasses which:

- i. exit from the stack of the baghouses controlling the EAF and exhibit 3%

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- opacity or greater; and
- ii. exit from the melt shop due solely to the operation of the EAF and exhibit 6% opacity or greater.
- 2.c** The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through OAC rule 3745-31-20, and 40 CFR Part 60, Subpart AAa.
- 2.d** The standard for particulate matter specified by 40 CFR 60.272a(a)(1) is less stringent than the emission limit established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.
- 2.e** The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.
- 2.f** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 (B) by committing to comply with the BACT requirements established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20 in this Permit to Install.
- On February 14, 2005, OAC rule 3745-23-06 was rescinded; therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.
- 2.g** This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.h** This emissions unit is exempt from the visible emissions limitations specified in OAC rule 3745-17-08(B), pursuant to OAC rule 3745-17-07(B)(11)(e).
- 2.i** All particulate matter emitted is PM₁₀.
- 2.j** The emission limitations established under this rule are for emissions units P901, P902, and P903 combined.

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- 2.k** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the BACT requirements established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20 in this Permit to Install.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.l** The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.

II. Operational Restrictions

1. The permittee shall limit production in emissions units P901 to an average of 315 tons of liquid steel per hour. Annual production from emissions units P901 shall not exceed 2.76 million tons of liquid steel per year, based upon a rolling, 12-month summation of the monthly liquid steel production.

A rolling production limitation for emissions unit P901 was most recently established in Permit to Install (PTI) #03-13977 issued on August 3, 2003 and, as such, rolling production records exist. The applicant shall use the existing records to determine compliance upon startup under this permit. Therefore, it is not necessary to establish federally enforceable restrictions for the first 12 months of operation under the provisions of this permit.

2. The permittee shall implement the following control practices:
 - a. the post combustion chamber ignition burner set point shall be at a minimum of 1.0 MW (megawatt) during any EAF steel making operation;
 - b. the active EAF DEC offgas ignition burner set point shall be at a minimum of 1.0 MW during any EAF steel making operation; and,
 - c. the combustion air fan for the active EAF shell shall be set to ensure excess combustion air.
3. The control system's fan motor amperes set points and damper positions shall be maintained at a level established during the most recent emission testing that demonstrated the emissions unit was in compliance.
4. The permittee shall follow the procedures outlined in its "Scrap Management Program" in order to minimize the use of scrap that contains mercury, lead, oils, plastics, and organic materials that are charged in the EAF. The "Scrap Management Program" was reviewed and approved by Ohio EPA, NWDO and shall be viewed as part of the operational requirements for the permit. Any change to the "Scrap Management Program" that would increase the amount of these compounds present in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by Ohio EPA, NWDO.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall monitor the stack emissions from the two baghouses controlling emissions units P901, P902, and P903. Observations of the opacity of the visible emissions from these control devices shall be performed by a certified visible emission observer as follows:

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- a. The permittee shall conduct visible emission observations in on each control device in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Visible emission observations shall be conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9 for a least three 6-minute periods.
 - c. The opacities shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations shall be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause or location of visible emissions observed during a single incident.
 - d. The permittee shall ensure that an adequate number of personnel on site are "certified" to conduct visible emission observations in accordance with Method 9 procedures. The permittee may choose to have visible emissions observations contracted out, i.e. "certified" personnel may be provided by another company.
 - e. The permittee shall maintain copies of all daily opacity observations required above. The records shall identify the persons responsible for conducting the readings and verification that their Method 9 certifications are up-to-date.
2. The permittee shall monitor the operation of each control system and maintain records in accordance with the following requirements:
 - a. The permittee shall check and record on a once-per-shift basis the control system fan motor amperes and damper positions. The monitoring devices may be installed in any appropriate location such that reproducible monitoring will result. The Ohio EPA, NWDO may require the permittee to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR Part 60.
 - b. When the permittee is required to demonstrate compliance with the visible emission limitation in condition A.I.2.b. and at any other time, the Ohio EPA, NWDO may require that all control system fan motor amperes and damper positions be determined during all periods in which a hood is operated for the purpose of capturing emissions.

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- c. The permittee may petition the Ohio EPA, NWDO for reestablishment of these parameters whenever the permittee can demonstrate to the agency's satisfaction that the operating conditions upon which the parameters were previously established are no longer applicable. Operation at other than baseline values will be considered by the Ohio EPA to be unacceptable operation and maintenance of the control system.
 - d. The permittee shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture systems (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition the Ohio EPA, NWDO to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
 3. Observations of the opacity of the visible emissions from the meltshop shall be performed by a certified visible emission observer as follows:
 - a. The permittee shall conduct visible emission observations in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Shop opacity observations shall be conducted at least once when the furnace is operating in the melting and refining period.
 - c. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop. Shop opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.
 - d. The permittee shall ensure that an adequate number of personnel on site are "certified" to conduct visible emission observations in accordance with Method 9 procedures. The permittee may choose to have visible emissions observations contracted out, i.e. "certified" personnel may be provided by another company.

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- e. The permittee shall maintain copies of all daily opacity observations required above. The records shall identify the persons responsible for conducting the readings and verification that their Method 9 certifications are up-to-date.
4. The permittee shall maintain on site a record of all baghouse dust analysis for both baghouses serving emissions units P901, P902, and P903. At a minimum, the analysis shall contain a record of the Pb content in percent by weight.
 5. The permittee shall maintain daily production records of the following for emissions unit P901:
 - a. the number of hours of operation;
 - b. the tons of liquid steel produced; and,
 - c. the average hourly production rate (b divided by a).
 6. The permittee shall maintain monthly records of the following for emissions unit P901, P902, and P903 combined:
 - a. the tons of liquid steel produced;
 - b. the emissions* of SO₂, CO, OC, and NO_x, and the fugitive emissions**of PE, PM₁₀, Pb, and Hg;
 - c. of annual production of liquid steel, based on a rolling 12-month summation, and
 - d. the annual emissions of SO₂, CO, OC, NO_x, and the fugitive emissions of PE, PM₁₀, Pb, and Hg, based on a rolling 12-month summation.

* The permittee shall use the continuous monitoring requirements in condition A.III.9. to determine monthly CO emissions For all other pollutants, the permittee shall use the emission factors established from the testing requirements in condition A.V.1.

** The fugitive PE emissions shall be calculated from the emission factors 1.4 pounds of PE per ton of steel produced for the EAF (emissions unit P901,with 98% capture)and 0.6 pound of PE per ton of steel produced for the Ladle Metallurgy Furnaces (LMFs, emissions units P902 and P903, with 99% capture) applied to the monthly production rates. Fugitive PM₁₀ shall be calculated assuming 76% by weight of all PE is PM₁₀. For fugitive Pb and Hg, the permittee

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shall calculate emissions by applying the weight percentages established by the most recent testing/analysis which has been performed for these metals.

7. The permittee shall maintain monthly records of the following for emissions unit P901, P902, and P903 combined:
 - a. the hours of operation;
 - b. the stack emissions* of PM₁₀, Pb, and Hg;
 - c. the annual stack emissions of PM₁₀, Pb, and Hg, based on a rolling 12-month summation.

* The permittee shall calculate the emission rates for each baghouse stack. For stack PM₁₀, the permittee shall use the hourly emission rates established in condition A.V.1. For stack Pb and Hg, the permittee shall calculate emissions by applying the weight percentages established by the most recent testing/analysis which has been performed for these metals.

8. The permittee shall maintain daily records of all instances where the computer program for monitoring the set points established in condition A.II.2. above for emissions unit P901 required cessation of, or delays in, furnace operations. The records shall include the reasons for any delay and/or cessation in furnace operations, the duration, a description of the corrective actions taken, and a determination whether or not a malfunction resulting in a violation of a condition of the permit has occurred.
9. The permittee shall operate and maintain equipment to continuously monitor and record CO from both exhaust systems serving this emissions unit, in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of all data obtained by the continuous CO monitoring systems including, but not limited to, parts per million CO on an instantaneous (one minute) basis, emission of CO in lbs per hour in the appropriate averaging period (8-hour block), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. any exceedance of the production restrictions contained in condition A.II.1.;
 - b. the rolling, 12-month emissions limitations specified in condition A.I.1. of this

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- c. all periods of time during which the control system's set points established in condition A.II.2 were not met; and
- d. all periods of time during which any of the control system fan motor ampere values or damper positions established in condition A.II.3. were not met.
- e. all periods of time during which the scrap was not handled in accordance with the permittee's "Scrap Management Program".

The permittee shall submit these deviation reports in accordance with the general terms and conditions of this permit.

- 2. The permittee shall submit a semiannual written report of all exceedances of the opacity restrictions contained in condition A.I.2.b.. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity exceeds these limits. If no deviations occurred during the reporting period, the permittee shall submit a report which states that no deviations occurred. These reports shall be submitted by January 31st and July 31st of each year and shall cover the previous six month period.
- 3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, NWDO documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of CO values in excess of any limitations specified in the terms and conditions of this permit. These reports shall also contain the total CO emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA NWDO documenting any continuous CO monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit

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a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60 section 60.7. The summary shall be submitted to the Ohio EPA NWDO within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions units P901, P902, and P903 in accordance with the following requirements:
 - a. The emission testing shall be conducted within 180 days after the installation of the second baghouse controlling these emissions units.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, CO, SO₂, OC, and Hg, the allowable outlet grain loadings for PM₁₀, and the opacity requirements specified in A.1.2.b.i.

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and A.1.2.b.ii. The mass emission testing shall also be used to demonstrate compliance with the lb/ton of liquid steel emission rates established in condition A.1.2.a.

- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates: for NO_x, Methods 1 through 4 and 7 of 40 CFR, Part 60, Appendix A; for CO, Methods 1 through 4 and 10 of 40 CFR, Part 60, Appendix A; for SO₂, Methods 1 through 4 and 6 of 40 CFR, Part 60, Appendix A; for PM₁₀, Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M, for OC, Methods 1 through 4 and Method 18, 25 or 25A of 40 CFR, Part 60, Appendix A; for Hg*, Methods 1 through 5 and 29 of 40 CFR, Part 60, Appendix A; and for opacity, Method 9 of 40 CFR, Part 60, Appendix A. Testing for NO_x, CO, SO₂, and OC must be performed on both baghouses simultaneously. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.
- d. During the performance testing to demonstrate compliance with the outlet grain loading for PM₁₀, and the opacity requirements, the following additional testing requirements shall be employed:
 - i. The sampling time and sample volume for each Method 201 run shall be at least 4 hours and 4.50 dscm (160 dscf) and the sampling time shall include an integral number of heats.
 - ii. Opacity measurements shall be taken concurrently with each Method 201 run.
 - iii. The test runs shall be conducted concurrently, unless inclement weather interferes.
 - iv. The permittee shall obtain and record the following information:
 - (a). all control system fan motor amperes and damper positions during all periods in which a hood is operated for the purpose of capturing emissions from the EAF's;
 - (b). charge weights and materials and tap weights and materials;
 - (c). heat times, including start and stop times, and a log of process operation, including periods of no operation during testing; and

- (d). control device operation log.
 - e. The tests shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Ohio EPA, NWDO.
 - f. Except as specified in condition A.V.1.d., the sampling time for each run shall be 8 hours in duration.
 - g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA's refusal to accept the results of the emission tests.
 - h. Personnel from the Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - i. A comprehensive written report on the results of the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA NWDO.
 - * As part of the testing for Hg the permittee shall determine the weight percentages of Hg as compared to PM₁₀, and the total mass emission rate for PM₁₀. Testing for Hg shall be performed under "worst case" conditions.
2. Compliance with the emission limitations established in this permit shall be determined in accordance with the following methods:
- a. Emission Limitation:
78.80 lbs SO₂ /hr, 0.25 lb of SO₂ /ton of liquid steel produced
179.60 lbs NO_x/hr, 0.57 lb of NO_x /ton of liquid steel produced
2362.50 lbs CO/hr, 7.5 lbs of CO/ton of liquid steel produced
110.30 lbs OC/hr, 0.35 lb of VOC/ton of liquid steel produced

Applicable Compliance Method:

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Compliance with the hourly CO mass emission limitations shall be determined in accordance with the test methods and procedures specified in condition A.V.1. and the monitoring requirements specified in condition A.III.9. Compliance with the other mass emission limitations and lbs/ton of liquid steel produced limitations shall be determined in accordance with the test methods and procedures specified in condition A.V.1.

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- b. Emission Limitation:
Baghouse #1 Stack Emissions
0.0018 grains PM₁₀/dscf, 88.1 tons PM₁₀/rolling 12-month period
0.10 lb Pb/hr, 0.44 tons Pb/rolling 12-month period
0.050 lb Hg/hr, 0.22 ton Hg/rolling 12-month period

Baghouse #2 Stack Emissions
0.0018 grains PM₁₀/dscf, 79.1 tons PM₁₀/rolling 12-month period
0.09 lb Pb/hr, 0.39 tons Pb/rolling 12-month period
0.045 lb Hg/hr, 0.20 ton Hg/rolling 12-month period

Applicable Compliance Method:

Compliance with the allowable outlet grain loading and the hourly mass emission limitations for Hg shall be determined in accordance with the test methods and procedures specified in condition A.V.1. The stack Pb emissions were established based on a maximum weight percentage of the PM₁₀ limit of 0.5% for Pb and will be verified in accordance with the analysis specified in condition A.III.4. Compliance with the annual emission limitations shall be determined in accordance with record keeping procedures specified in condition A.III.7.

- c. Emission Limitation:
345.1 tons SO₂/rolling 12-month period
786.7 tons NO_x/rolling 12-month period
10347.8 tons CO/rolling 12-month period
483.1 tons OC/rolling 12-month period

Applicable Compliance Method:

Compliance with the annual emission limitations shall be determined in accordance with record keeping procedures specified in condition A.III.6.

- d. Emission Limitation:
Fugitive Emissions
46.9 tons PE/rolling 12-month period
35.7 tons PM₁₀/rolling 12-month period
0.23 ton Pb/rolling 12-month period
0.12 ton Hg/rolling 12-month period

Applicable Compliance Method:

Compliance with the annual emission limitations shall be determined in accordance with the record keeping procedures specified in condition A.III.7.

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- e. Emission Limitation:
The permittee shall not cause to be discharged into the atmosphere any gasses which exit from the stack of the baghouse controlling the EAF and exhibit 3% opacity or greater; and

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Applicable Compliance Method:

Compliance with the annual emission limitation shall be determined in accordance with record keeping procedures specified in condition A.III.1.

f. Emission Limitation:

The permittee shall not cause to be discharged into the atmosphere any gasses which exit from the melt shop due solely to the operation of the EAF and exhibit 6% opacity or greater.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be determined in accordance with record keeping procedures specified in condition A.III.3.

VI. Miscellaneous Requirements

1. An alternative exhaust gas discharge configuration for the baghouse controlling the EAF may be used if found to be acceptable by Ohio EPA, pursuant to the requirements of federal and state rules. No less than 60 days prior to changing the exhaust gas discharge configuration, a complete description of the changed must be submitted to Ohio EPA. The final plan must be approved by Ohio EPA prior to any alteration of the exhaust gas discharge configuration. The above exhaust gas discharge requirement is based on the proposed emission limits for the entire plant.
2. Within 180 days of the effective date of this permit, the permittee shall update the existing written quality assurance/quality control plan for the new and existing continuous CO monitoring system designed to ensure continuous valid and representative readings of CO. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.
3. A statement of certification of the existing continuous CO monitoring system shall be maintained on site and shall consist of a letter from the Ohio EPA detailing the results of an Agency review of the certification tests and a statement by the Agency that the system is considered certified in accordance with the requirements of 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Proof of certification shall be made available to the Ohio EPA NWDO upon request.
4. Prior to the installation of the new continuous CO monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance

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Specification 4 and 6 for approval by the Ohio EPA, Central Office.

5. Within 180 days of the installation of the second baghouse controlling this emissions unit, the permittee shall conduct certification tests of the new continuous CO monitoring system pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Personnel from the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days after the test is completed. Copies of the test results shall be sent to the appropriate Ohio EPA District Office or local air agency and the Ohio EPA, Central Office. Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 4 and 6.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P903 - Ladle Melt Furnace -Modification of PTI #03-13977 issued on 8/5/2003 to allow for an increase in annual throughput.		See B.III.

2. **Additional Terms and Conditions**

None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The Permit to Install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the Permit to Install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the Permit to Install application and the Screen3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen3 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutants:

Pollutant: Manganese
 TLV (mg/m3): 200
 Maximum Hourly Emission Rate (lbs/hr): 1.13
 Predicted 1-Hour Maximum Ground-Level Concentration (mg/m3): 2.08

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MAGLC (mg/m3): 4.76

Pollutant: Zinc

TLV (mg/m3): 2000

Maximum Hourly Emission Rate (lbs/hr): 21.0

Predicted 1-Hour Maximum Ground-Level Concentration (mg/m3): 38.7

MAGLC (mg/m3): 47.6

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
 - a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

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3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"
 - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P015 - Cooling Tower	OAC rule 3745-31-10 through OAC rule 3745-31-20	See A.1.2.a.
	OAC rule 3745-31-05 (A)(3)	See A.1..2.b. 0.50 lbs Particulate Emissions (PE)/hr & 2.2 tons PE/yr
	OAC rule 3745-17-11 (B)(4)	See A.2.c.
	OAC rule 3745-17-07 (A)(1)	visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

- 2.a The permittee shall employ Best Available Control Technology (BACT) for controlling PE/PM₁₀ on this emissions unit. The BACT requirements for this emissions unit has been determined to be use of high efficiency drift eliminators.
- 2.b The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through OAC rule 3745-31-20, and OAC rule 3745-17-07 (A)(1).
- 2.c The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

B. Operational Restrictions

1. The permittee shall not exceed an average total dissolved solids content of 1,000 parts per million (ppm) in this emissions unit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform the following monitoring requirements for emissions unit P003 on a weekly basis:
 - a. test and record the total dissolved solids content, in ppm*; and,
 - b. if monitored on a greater frequency, determine the average dissolved solids content, in ppm on a weekly basis.

* The permittee may as measure conductivity in lieu of a direct measurement for dissolved solids content.

D. Reporting Requirements

1. In accordance with the General Terms and Conditions of this permit, the permittee shall submit deviation (excursion) reports in that identify any exceedances of the average total dissolved solids content.

E. Testing Requirements

1. Compliance with the allowable emission limitations in this permit shall be determined according to the following methods:

- a. Emission Limitation
0.50 lbs PE/hr & 2.2 tons PE/yr

Applicable Compliance Method

The lbs/hr emission limitation shall was established by applying the maximum drift loss factor 0.005 percent to the maximum average total dissolved solids content of 1,000 ppm and a maximum flow rate of 1,200,000 gallons per hour for the cooling water. Therefore, provided the permittee demonstrates compliance with the average dissolved solids content, compliance with the hourly emission limitation will be assumed. If required, the permittee shall submit a testing proposal which will demonstrate that the maximum drift loss does not exceed 0.005 percent. Compliance with the annual emission limitation shall be demonstrated by the multiplying the hourly emission rate by the maximum operating schedule of 8760 hrs/yr, and by the conversion factor of 2000 lbs/ton.

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b. Emission Limitation

Visible PE shall not exceed 20 percent opacity as a six-minute average, except as provided by rule

Applicable Compliance Method

If required, compliance with the visible emissions limitation shall be determined by OAC rule 3745-17-03(B)(1).

F. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P015 - Cooling Tower		

2. Additional Terms and Conditions

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None