



John R. Kasich, Governor
 Mary Taylor, Lt. Governor
 Craig W. Butler, Director

6/2/2015

Kristin Malosh
 Vallourec Star, LP
 2669 Martin Luther King Jr. Blvd.
 Youngstown, OH 44510

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
 Facility ID: 0250110625
 Permit Number: P0118773
 Permit Type: Administrative Modification
 County: Mahoning

Certified Mail

No	TOXIC REVIEW
Yes	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
 77 South High Street, 17th Floor
 Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

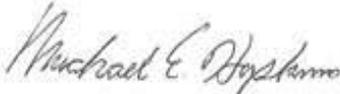
Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Northeast District Office at (330)963-1200 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.
Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA
Ohio EPA-NEDO; Pennsylvania; West Virginia



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
Vallourec Star, LP**

Facility ID:	0250110625
Permit Number:	P0118773
Permit Type:	Administrative Modification
Issued:	6/2/2015
Effective:	6/2/2015



Division of Air Pollution Control
Permit-to-Install
for
Vallourec Star, LP

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Final Permit-to-Install
Vallourec Star, LP
Permit Number: P0118773
Facility ID: 0250110625
Effective Date: 6/2/2015

Authorization

Facility ID: 0250110625
Facility Description: Steel manufacturing facility
Application Number(s): M0003344
Permit Number: P0118773
Permit Description: Administrative permit modification to P905, P908, and P910: to ensure that the emissions units groups, for which emission limits were established during the original PSD permitting process, will remain consistent and complete in the conditions for each of the affected emissions units.
Permit Type: Administrative Modification
Permit Fee: \$1,875.00
Issue Date: 6/2/2015
Effective Date: 6/2/2015

This document constitutes issuance to:

Vallourec Star, LP
2669 Martin Luther King Jr. Blvd.
Youngstown, OH 44510

of a Permit-to-Install for the emissions unit(s) identified on the following page.

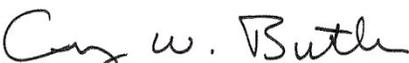
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330)963-1200

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section 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 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


Craig W. Butler
Director



Final Permit-to-Install
Vallourec Star, LP
Permit Number: P0118773
Facility ID: 0250110625
Effective Date:6/2/2015

Authorization (continued)

Permit Number: P0118773

Permit Description: Administrative permit modification to P905, P908, and P910: to ensure that the emissions units groups, for which emission limits were established during the original PSD permitting process, will remain consistent and complete in the conditions for each of the affected emissions units.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P905
Company Equipment ID:	Electric Arc Furnace
Superseded Permit Number:	P0103995
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P908
Company Equipment ID:	AAF Handling System2
Superseded Permit Number:	P0103995
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P910
Company Equipment ID:	Electric Arc Furnace
Superseded Permit Number:	P0103995
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
Vallourec Star, LP
Permit Number: P0118773
Facility ID: 0250110625
Effective Date:6/2/2015

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e)General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of 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. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) 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.

4. Monitoring and Related Record Keeping 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:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) 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:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Northeast District Office.

- (2) 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 Ohio EPA DAPC, Northeast District Office. The written 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 A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Ohio EPA DAPC, Northeast District Office 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.
 - (4) This permit is for an emissions unit located at a Title V facility. 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.

5. 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 Ohio EPA DAPC, Northeast District Office 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).

6. Compliance Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted

local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

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:
- (1) 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.
 - (2) 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.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) 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 Ohio EPA DAPC, Northeast District Office 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 the Ohio EPA. Progress reports shall contain the following:
- (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) 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.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. 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.

9. 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 Ohio EPA DAPC, Northeast District Office.
- 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 Ohio EPA DAPC, Northeast District Office. 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, 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.)

10. 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) not exempt from the requirement to obtain a Permit-to-Install.

11. Construction of New Sources(s) and Authorization to Install

- a) 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.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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 permittee shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

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 operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.

13. Construction Compliance Certification

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. 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.

15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

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 by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. 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.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

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

19. 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.



Final Permit-to-Install
Vallourec Star, LP
Permit Number: P0118773
Facility ID: 0250110625
Effective Date:6/2/2015

B. Facility-Wide Terms and Conditions



Final Permit-to-Install
Vallourec Star, LP
Permit Number: P0118773
Facility ID: 0250110625
Effective Date:6/2/2015

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.
2. The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart YYYYYY: Electric Arc Furnace (P905 or, if installed in the future, P910). The complete 40 CFR Part 63, requirements, including the 40 CFR Part 63, General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District office or local air agency.



Final Permit-to-Install
Vallourec Star, LP
Permit Number: P0118773
Facility ID: 0250110625
Effective Date:6/2/2015

C. Emissions Unit Terms and Conditions

1. P905, Electric Arc Furnace

Operations, Property and/or Equipment Description:

Administrative Modification to PTI No. P0103995: Single shell AC electric arc furnace (EAF) with roof canopy hood fume collection/direct evacuation control system and a 1,200,000 acfm fabric filter mono vent baghouse. This emissions unit will be removed if the replacement EAF (P910) is installed pursuant to expansion Option 2.

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(8) through d)(11) and e)(7).

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	See b)(2)c, b)(2)d, and b)(2)g. The requirements of this rule also include compliance with the requirements of the VE limitations specified in 40 CFR Part 60, Subpart AAa. The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-10 thru 20 for PM/PM ₁₀ , NO _x , SO ₂ , VOC, and CO.
b.	OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through 3745-31-20.
c.	OAC rule 3745-17-07(A)(1) & (B)(3)	The visible emission limitations specified by these rules are less stringent than the visible emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-17-08	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
e.	OAC rule 3745-18-06	The SO ₂ emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through 3745-31-20.
f.	OAC rule 3745-31-05(A)(3)(a)(ii)	See b)(2)h.
g.	40 CFR Part 60, Subpart AAa	<p>Visible particulate emissions from the baghouse shall not exhibit three (3) per cent opacity or greater as a six-minute average.</p> <p>Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) per cent opacity or greater as a six-minute average.</p> <p>The mass 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.</p>
h.	OAC rule 3745-31-05(D)	<p>Pb emissions shall not exceed 1.18tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.</p> <p>Note that incremental increase of less than 0.6 ton per year based upon restrictions listed in c)(1).</p>
i.	OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM₁₀emissions shall not exceed 0.0018 gr/dscf for emissions units P905, P908, and P906 or P909 combined.</p> <p>PM/PM₁₀emissions shall not exceed 17.09 lbs/hr for emissions units P905, P908, and P906 or P909 combined (includes stack and fugitive emissions).</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>PM/PM₁₀ emissions shall not exceed 70.06 tons per year based upon a rolling, 12-month summation for emissions units P905, P908, and P906 or P909 combined (includes stack and fugitive emissions).</p> <p>All PM/PM₁₀ are considered filterable PM.</p> <p>NO_x emissions shall not exceed 68.8 lbs/hr and 0.40 pound per ton of steel for emissions units P905 and P906 or P909 combined.</p> <p>NO_x emissions shall not exceed 280 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.</p> <p>CO emissions shall not exceed 688 lbs/hr and 4.0 pounds per ton of steel for emissions units P905 and P906 or P909 combined.</p> <p>CO emissions shall not exceed 2,800 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.</p> <p>SO₂ emissions shall not exceed 43 lbs/hr and 0.25 pound per ton of steel for emissions units P905 and P906 or P909 combined.</p> <p>SO₂ emissions shall not exceed 175 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.</p> <p>VOC emissions shall not exceed 31 lbs/hr and 0.18 pound per ton of steel for emissions units P905 and P906 or P909 combined.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		VOC emissions shall not exceed 126 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined. See b)(2)b.
j.	40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 -10692) [In accordance with 40 CFR 63.10680(a) and (b)(1), this emissions unit is an electric arc furnace (EAF) that is an area source of hazardous air pollutants (HAPs) and commenced construction on or before September 30, 2008.]	You must achieve compliance with the applicable provisions of 40 CFR Part 63, Subpart YYYYYY by no later than June 30, 2008. You must achieve compliance with opacity limit in 40 CFR Part 63.10686(b)(2) or (c)(2) by no later than December 28, 2010.
k.	OAC rule 3745-114-01	See d)(8), d)(9), d)(10), d)(11) and e)(7).

(2) Additional Terms and Conditions

- a. The requirements of this Permit to Install supersede the requirements of PTI No. P0103995 issued on April 10, 2009.
- b. Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of direct-shell evacuation control system (DEC system), good furnace melting practices and proper operation of the EAC oxy-fuel burners, acceptance of a PE limitation of 0.0018 gr/dscf, acceptance of a NO_x limitation of 0.40 lb/ton of steel, acceptance of a SO₂ limitation of 0.25 lb/ton of steel, acceptance of a VOC limitation of 0.18 lb/ton of steel, and acceptance of a CO limitation of 4.0 lbs/ton of steel produced constitute BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rules 3745-31-(10) thru (20) above.
- c. The electric arc furnace shall be installed with a roof canopy hood fume collection system in addition to a direct evacuation control (DEC) system. These systems shall be capable of capturing a minimum of 99 percent of the generated emissions of particulate from the air contaminant source operation including charging, melting, refining, and tapping periods in the steel making cycle.
- d. Particulate emissions captured by the fume collection systems for the electric arc furnace shall be exhausted to the EAF/LMFmono ventfabric filter control device.
- e. The permittee shall follow the "Scrap Management Program" that was submitted to Ohio EPA, Northeast District Office (NEDO) and that was developed to

minimize the use of scrap that contains extraneous materials such as oiled steel, pipes with residues and coatings, enameled materials, transmissions, shock absorbers, tinned materials, rubber, concrete, dirt, or wood that may contaminate the scrap charged into the EAF. The "Scrap Management Program" shall be viewed as part of the operational requirements for the EAF permit. Any change to the "Scrap Management Program" that would increase the amounts of these compounds in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by the NEDO.

- f. The values for either the fan motor amperes and damper position for each operating fan or the volumetric flow rate through each separately ducted hood, as determined during the most recent visible particulate emission compliance demonstration, shall be maintained at all times when the EAF is operating (40 CFR Part 60.274a(c)).
- g. The control system fan motor amperes and all damper position, the volumetric flow rate through each separately ducted hood, or the volumetric flow rate at the control device inlet and all damper positions shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to d)(4) of this permit. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period (40 CFR Part 60.274a(c)).
- h. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead (Pb) emissions from emissions units P905 and P906 or P909, combined, since the uncontrolled potential to emit for Pb is less than ten tons per year.
- i. The scrap metals processed in this emissions unit is restricted to only those materials that comply with the scrap acquisition and inspection plan described in d)(7).
- j. The permittee may, in the future, opt to install a separate electric arc furnace (P910) at the caster/VDT/LMF building. Should the new electric arc furnace get installed, upon startup of emissions unit P910, the permittee shall cease the liquid steel production from this emissions unit (P905).

c) Operational Restrictions

- (1) The permittee shall restrict the annual liquid steel production to 1,400,000 tons per year, based upon a rolling, 12-month summation of the production rates. This is an existing emissions unit which has existing records of the amount of liquid steel production and therefore does not need to be restricted on a monthly basis.
- (2) See 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 - 10692).

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall maintain monthly records of the following information:
 - a. the hours of operation for each calendar month;
 - b. the liquid steel production rate for each calendar month;
 - c. the rolling, 12-month summation of the hours of operation;
 - d. the rolling, 12-month summation of the liquid steel production rates; and
 - e. the rolling, 12-month summation of the PM/PM₁₀, VOC, CO, SO₂, NO_x and Pb emissions.
- (2) Visible particulate emissions observations of the EAF/LMF mono vent positive pressure fabric filter baghouse shall occur at least once per day of operation. Observations shall occur when the EAF is operating in the melting and refining phase of a heat cycle. Additional observations shall be made during the electric arc heating phase of the LMF processing cycle. These observations shall be taken in accordance with Method 9 of 40 CFR Part 60, Appendix A, and shall include at least three six-minute periods during EAF melting and refining and at least one six-minute period of the LMF electric arc heating phase in the processing cycle. The LMF observation may coincide with the EAF observations. The opacity shall be recorded where the greatest opacity of the visible emissions from the vents are observed in accordance with the procedures listed in Method 9 of 40 CFR Part 60, Appendix A. Records shall be maintained of all the visible particulate emissions observed. (40 CFR Part 60 Subpart AAa requires these opacity observations.)
- (3) The permittee shall perform observations of shop opacity by a certified visible emission observer in lieu of installing and maintaining a furnace static pressure monitoring device on the DEC equipped EAF. Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period (40 CFR Part 60.273a (d)).
- (4) The permittee shall either (a) check and record the fabric filter control system fan motor amperes and damper position for each of the operating fans on a once-per-shift basis ; (b) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or (c) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check record damper positions on a once-per-shift basis. The monitoring device(s) shall be installed in a location in the exhaust duct such that reproducible flow rate data may be obtained. The flow rate monitoring device(s) shall have an accuracy of +/- 10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The permittee may be required to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR, Part 60. The values of these parameters as determined during the most recent visible particulate emission compliance demonstration shall be maintained at the appropriate levels for each applicable period. Operation at other than baseline values may be considered unacceptable operation and maintenance of the

control system. The permittee may petition for reestablishment of these parameters whenever the permittee can demonstrate satisfactorily that the operating conditions upon which the parameters were previously established are no longer applicable.

Checking and recording of the pressure drop readings across the baghouse will not be required due to additional installation requirements of monitoring device(s), as specified in this section. OEPA, however, reserves the right to request pressure drop readings, if problems arise.

- (5) The permittee shall perform monthly operational status inspections of the equipment that are important to the performance of the total capture system (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 the ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition for the approval of an alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
- (6) Shop opacity observations shall be conducted at least once per day for eighteen minutes when the furnace is operating in the meltdown and refining period. (The "shop" is the building that houses the EAF.) Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity 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 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. The shop opacity observations shall be taken at the shop roofline.
- (7) The permittee shall develop and write a Scrap Management Plan (Plan) for the selection and inspection of iron and steel scrap received for charge in the EAF. This plan shall provide for and define effective procedures to eliminate or minimize, to the extent practicable, mercury and organics charged to the electric arc furnace. The Plan is subject to approval by Ohio EPA and must be submitted to Ohio EPA, Northeast District Office, within 90 days of permit issuance. A copy of the plan must be maintained onsite and made readily available to all plant personnel having materials acquisition or inspection duties. A copy of the material specifications must be provided to all scrap suppliers. The Plan, at a minimum, shall include the following components:
 - a. A materials acquisition program which shall include:
 - i. Specifications for the supplier/marketer of the scrap metals that will minimize organic contaminants and mercury from the scrap received for charge to the electric arc furnace. The plan, at a minimum, shall call for the identification and removal of the following materials:

used oil filters,

plastic parts,
organic liquids (transmission fluid, motor oil, etc.),
metal containers with residual organic liquids, and
free liquids.

This program shall be applicable for scrap charged to this emissions unit.

- ii. Specifications for the supplier/marketer of automotive bodies requiring the removal of readily accessible mercury-containing devices from under the trunks and hoods and removal of lead components such as batteries and wheel weights.

A copy of the procedures used by the scrap supplier must be obtained and maintained onsite for either removing accessible mercury switches or for purchasing automobile bodies that have had readily accessible mercury switches removed, as applicable.

- b. Procedures for visual inspection of scrap metals which shall include:
 - i. procedures to document the amount (by weight) of each shipment of scrap received and the estimated percent of each shipment inspected; a representative portion of not less than 10 percent of each shipment of scrap metal received for charge into any scrap preheater and the electric arc furnace shall be inspected for the specifications contained in "i." above;
 - ii. identification of the location(s) where inspections are to be performed for each type of shipment, which shall provide a reasonable vantage point for visual inspections, with the consideration of worker safety; and
 - iii. provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and, unless satisfactory corrective measures are taken, limiting purchases whose shipments fail to meet specifications. The Plan shall describe what corrective actions are acceptable and when purchases will be limited.
 - iv. Record keeping requirements which shall include the following for each shipment:
 - (a) the amount, date received, type of scrap, and the supplier/marketer or each shipment of scrap metal received;
 - (b) the amount of material inspected, the date of inspection, and the inspector's name;
 - (c) the results of the inspection on a shipment-by-shipment basis, to include a description and estimated amount of any material not

meeting the specifications in "i" above and the marketer/supplier of the rejected scrap metals;

- (d) documentation of the return or disposal of the material rejected during each inspection;
- (e) certification, in writing, that each supplier/marketer of any scrap metals charged to this emissions unit has received the specifications of the Plan and agrees to these requirements; and
- (f) documentation that each supplier/marketer of scrap metals charged to this emissions unit has removed required materials in i.(a) and i.(b) above; or if the materials are not readily accessible, a description as to why the material could not be removed.

Note that this term shall not supersede the provisions and compliance dates listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692). The permittee is required to comply with the most stringent of the terms and sections of the term and the provisions of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) whichever the case maybe after the compliance dates of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit.

The permittee shall update their Plan after the compliance dates of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681-10692) for this emissions unit to include which terms are the most stringent, but no later than the compliance date listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit for submitting the Scrap Management Plan listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681-10692).

- (8) The permit-to-install (PTI) application for this/these emissions units, P905 and P906 or P909, were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
 - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

- i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
 - c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: Zinc Oxide

TLV (mg/m³): 10

Maximum Hourly Emission Rate (lbs/hr): 2.80

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 9.69

MAGLC (ug/m³): 238.10

The permittee, has demonstrated that emissions of Zinc Oxide, from emissions unit(s) P905 and P906 or P909, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

- (9) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV 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 toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" 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 a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI, PTIO, or FEPTIO (as applicable) prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (10) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
 - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

- (11) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- (12) See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 - 10692).

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month liquid steel production rate limitation and, for the first 12 calendar months of operation following start-up, all exceedances of the allowable cumulative liquid steel production levels for this emissions unit.
- (2) The permittee shall submit deviation (excursion) reports that identify all exceedances of the visible particulate emission limit for the fabric filter control device. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is three percent or greater.
- (3) The permittee shall submit deviation (excursion) reports that identify all exceedances of the fugitive visible particulate emission limit for the electric arc furnace shop. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is six percent or greater.
- (4) The permittee shall submit deviation (excursion) reports that identify either operation of control system fan motor amperes at values exceeding + or - 15 percent of the value established during the most recent demonstration of compliance or operation at volumetric flow rates lower than those established during the compliance demonstration, when the EAF was operating (40 CFR Part 60.276a(c)).
- (5) The permittee shall submit deviation (excursion) reports that identify all instances when any portion of the Scrap Management Plan was not followed or the information required to be documented was not recorded.
- (6) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month summation of the PM/PM₁₀, VOC, CO, SO₂, NO_x, and Pb emissions.
- (7) The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.
- (8) See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 - 10692).

f) Testing Requirements

(1) Compliance with the emissions limitations and/or control requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

PM/PM₁₀emissions shall not exceed 0.0018 gr/dscf for emissions units P905, P908, and P906 or P909 combined.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in f)(2).

b. Emission Limitation:

PM/PM₁₀emissions shall not exceed 17.09 lbs/hr for emissions units P905, P908, and P906 or P909 combined (includes stack and fugitive emissions).

Applicable Compliance Method:

To determine the hourly particulate emission rate for P905, P908 and P906 or P909 (combined), the following equations shall be used:

i. $E1(\text{emissions from baghouse}) = (980,000 \text{ dscfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes}/\text{hr})$

where:

$E1 = \text{particulate emissions from baghouse (lbs/hr); and}$

$980,000 \text{ dscfm} = \text{maximum baghouse flow rate.}$

ii. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced}/\text{hr}) (1.4 \text{ pounds PE}/\text{ton of steel}) (1-0.99)(0.76)$

where:

$E2 = \text{fugitive particulate emissions (lbs/hr);}$

$1.4 \text{ pounds PE}/\text{ton steel} = \text{emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86);}$

$0.99 = \text{capture efficiency for EAF canopy hood fume collection system; and}$

$0.76 = \text{fraction of total PM emissions assumed to be PM}_{10} \text{ (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).}$

iii. E_3 (emissions from additive, alloy, flux handling, & silos) = $A \cdot B$

where:

E_3 = particulate emissions from additive, alloy, flux handling, & silos (lbs/hr);

A = alloy, additives, flux handling, and silos emission factor, 8.0×10^{-4} lb/ton (emission factor provided by facility); and

B = maximum material throughput per hour, 172 tons/hr.

iv. $E_{\text{total}} = E_1 + E_2 + E_3$

where:

E_{total} = total hourly PM_{10} emissions from P908, P906 or P909, and P905, combined (lbs/hr);

E_1 = particulate emissions from baghouse (lbs/hr);

E_2 = fugitive particulate emissions (lbs/hr); and

E_3 = particulate emissions from additive, alloy, flux handling, & silos (lb/hr).

If required by the Ohio EPA, compliance with the PM/PM_{10} emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 5D.

c. Emission Limitation:

PM/PM_{10} emissions shall not exceed 70.06 tons per year based upon a rolling, 12-month summation for emissions units P905, P908, and P906 or P909 combined (includes stack and fugitive emissions).

Applicable Compliance Method:

To determine the annual particulate emission rate for P905, P908 and P906 or P909 (combined), the following equations shall be used:

i. $E_1(\text{stack emissions}) = (980,000 \text{ dscfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes}/\text{hr}) (\text{actual hours of operation}/\text{year}) (1 \text{ ton}/2000 \text{ pounds})$

where:

E_1 = particulate emissions from baghouse (tons/year); and

980,000 dscfm = maximum baghouse flow rate.

ii. E_2 (fugitive emissions) = (tons of steel produced/year) (1.4 pounds PE/ton of steel)(1-0.99) (1 ton/2000 pounds)(0.76)

where:

E_2 = fugitive particulate emissions (tons/year);

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86);

0.99 = capture efficiency for EAF canopy hood fume collection system; and

0.76 = fraction of total PE emissions assumed to be PM_{10} (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

iii. E_3 (emissions from additive, alloy, flux handling, & silos) = $A \cdot B / 2000$ lbs

where:

E_3 = particulate emissions from additive, alloy, flux handling, & silos (tons/year);

A = alloy, additives, and flux handling system's emission factor, 8.0×10^{-4} lb/ton; and

B = maximum material throughput per year, 1,400,000 tons.

iv. $E_{total} = E_1 + E_2 + E_3$

where:

E_{total} = total annual PM/ PM_{10} emissions from P908, P906 or P909, and P905, combined (tons/year);

E_1 = particulate emissions from baghouse (tons/year);

E_2 = fugitive particulate emissions (tons/year); and

E_3 = particulate emissions from additive, alloy, flux handling, & silos.

d. Emission Limitation:

NO_x emissions shall not exceed 68.8 lbs/hr and 0.40 pound per ton of steel for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the NO_x emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 7 or 7E.

e. Emission Limitation:

NO_x emissions shall not exceed 280 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

To determine the yearly NO_x emission rate for P905 and P906 or P909 (combined), the following equation shall be used:

$$E = (0.40 \text{ pound NO}_x/\text{ton of steel}) (\text{tons of steel produced/yr}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = NO_x emissions (tons/yr); and

0.40 pound NO_x/ton of steel = permit allowable emission rate for NO_x.

f. Emission Limitation:

CO emissions shall not exceed 688 lbs/hr and 4.0 pounds per ton of steel for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the CO emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 10.

g. Emission Limitation:

CO emissions shall not exceed 2,800 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

To determine the annual CO emission rate for emissions units P905 and P906 or P909 (combined), the following equation shall be used:

$$E = (4.0 \text{ pounds CO/ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = CO emissions (tons/yr); and

4.0 pounds CO/ton of steel = permit allowable emission rate for CO.

h. Emission Limitation:

SO₂ emissions shall not exceed 43 lbs/hr and 0.25 pound per ton of steel for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the SO₂ emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 6 or 6C.

i. Emission Limitation:

SO₂ emissions shall not exceed 175 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

To determine the annual SO₂ emission rate for P905 and P906 or P909 (combined), the following equation shall be used:

$E = (0.25 \text{ pound SO}_2/\text{ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$

where:

E = SO₂ emissions (tons/yr); and

0.25 pound SO₂/ton of steel = permit allowable emission rate for SO₂.

j. Emission Limitation:

VOC emissions shall not exceed 31 lbs/hr and 0.18 pound per ton of steel for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the VOC emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 18, 25 or 25A.

k. Emission Limitation:

VOC emissions shall not exceed 126 tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.



Applicable Compliance Method:

To determine the annual VOC emission rate for P905 and P906 or P909 (combined), the following equation shall be used:

$$E = (0.18 \text{ pound VOC/ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = VOC emissions (ton/yr); and

0.18 pound VOC/ton of steel = permit allowable emission rate for VOC.

I. Emission Limitation:

Pb emissions shall not exceed 1.18tons per year based upon a rolling, 12-month summation for emissions units P905 and P906 or P909 combined.

Applicable Compliance Method:

To determine the annual Pb emission rate for the EAF the following equation shall be used:

$$E = (E \text{ total /yr}) (0.017)$$

where:

E = Pb emissions (tons/yr);

E total /yr = total annual PM/PM₁₀ emissions from EAF, as determined in f)(1)c; and

0.017 = the average Pb content of the baghouse dust, as a weight fraction.

Alternatively, the average content analysis of the baghouse dust for the reporting period may be used to calculate the Pb emission.

m. Emission Limitation:

Visible emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emission limitation for fugitive dust shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and OAC rule 3745-17-03.

n. Emission Limitation:

Visible particulate emissions from the baghouse shall not exhibit three (3) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for the operation(s) identified above shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after startup of this emissions unit.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PM/PM₁₀, NO_x, CO, VOC, and SO₂.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

PM/PM₁₀ - Method 5D of 40 CFR Part 60, Appendix A

NO_x- Method 7 or 7E of 40 CFR Part 60, Appendix A

CO - Method 10 of 40 CFR Part 60, Appendix A

VOC - Method 18, 25, or 25A of 40 CFR Part 60, Appendix A

SO₂ - Method 6A of 40 CFR Part 60, Appendix A

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

e. 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 Northeast District Office. 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 test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



- f. Personnel from the Ohio EPA Northeast District Office 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.
 - g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.
- g) Miscellaneous Requirements
- (1) None.



2. P908, Alloy, Additives, and Flux Handling System #2

Operations, Property and/or Equipment Description:

Administrative Modification to PTI No. P0103995: Alloy, Additives, Flux, and Lime Handling System #2, exhausts to EAF/LMF Baghouse and silo bin vent filters.

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM₁₀emissions shall not exceed 0.0018 gr/dscf for emissions units P908, P906 or P909, and P905 or P910 combined.</p> <p>PM/PM₁₀emissions shall not exceed 17.09 lbs/hr for emissions units P908, P906 or P909, and P905 or P910 combined (includes stack and fugitive emissions).</p> <p>PM/PM₁₀emissions shall not exceed 70.06 tons per year based upon a rolling 12-month summation for emissions units P908, P906 or P909, and P905 or P910 combined (includes stack and fugitive emissions).</p> <p>All PM/PM₁₀ are considered filterable PM.</p> <p>See b)(2)c.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A)(1), 3745-17-07(B)(1), and 3745-17-08.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	OAC rule 3745-17-07(A)(1)	See b)(2)g.
c.	OAC rule 3745-17-07(B)(1)	Visible particulate emissions from fugitive dust source shall not exceed twenty-percent opacity as a three-minute average, except as provided by the rule.
d.	OAC rule 3745-17-08	See b)(2)d thru b)(2)f.
e.	OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rules 3745-31-10 thru 20.

(2) Additional Terms and Conditions

- a. The permittee may, in the future, opt to install a separate electric arc furnace (P910) at the caster/VTD/LMF building. Should this new electric arc furnace get installed, the permittee will incorporate three storage silos into this emissions unit (P908). The addition of three storage silos is necessary to hold additional materials for the EAF operation.
- b. Particulate emissions from this emissions unit were evaluated as though P908 was already equipped with three storage silos. Therefore, it is not necessary to evaluate the incremental increase of particulate emissions from the three storage silos, if installed in the future.
- c. Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of bulk material bin system, with an emission limitation of 0.0018 gr/dscf of exhaust gases, and the use of silo bin vent filters, with an emission limitation of 0.005 gr/dscf of exhaust gas, constitute BACT for this emissions unit. The emission limitations based on the BACT requirements are listed under OAC rules 3745-31-10 thru 20 above.
- d. Alloys, additives, and charge carbon are dumped into a receiving hopper. The receiving hopper shall be enclosed on all sides with an opening for the truck. At the opening, overlapping plastic sheets shall be draped to allow for passage of the truck while maintaining the enclosure.
- e. The alloy batch holding bins shall be loaded by means of an enclosed belt conveyor and a rotary loading spout or shuttle conveyor for bin loading. After loading, the storage bins, trim bins, and batch holding bins shall be covered. The enclosures shall be sufficient to minimize, at all times, visible emissions of fugitive dust at all transfer points.
- f. The permittee shall make certain that all emissions from the silos shall be vented to the respective silo bin vent control devices.

e) Reporting Requirements

- (1) The permittee shall submit semiannual written reports which identify all time periods when the silos were not vented to the silo bin vent control devices. These reports shall be submitted by January 31 and July 31 of each year and shall cover the previous 6-month period.
- (2) The permittee shall submit semiannual written reports which:
 - a. identify all days during which any visible particulate emissions were observed from any non-stack egress point and/or the storage silo bin vents associated with this emissions unit; and
 - b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted by January 31 and July 31 of each year and shall cover the previous 6-month period.

f) Testing Requirements

- (1) Compliance with the emissions limitations and/or control requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

PM/PM₁₀emissions shall not exceed 0.0018 gr/dscf for emissions units P908, P906 or P909, and P905 or P910 combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the PM/PM₁₀ emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 5.

b. Emission Limitation:

PM/PM₁₀emissions shall not exceed 17.09 lbs/hr for emissions units P908, P906 or P909, and P905 or P910 combined (includes stack and fugitive emissions).

Applicable Compliance Method:

To determine the hourly particulate emission rate for emissions units P908, P906 or P909, and P905 or P910 (combined), the following equations shall be used:

- i. $E_1(\text{emissions from baghouse}) = (980,000 \text{ dscfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes}/\text{hr})$

where:

E1 = particulate emissions from baghouse (lbs/hr); and

980,000 dscfm= maximum baghouse flow rate.

- ii. $E2$ (fugitive emissions) = (tons of steel produced/hr) (1.4 pounds PE/ton of steel) $(1-0.99)(0.76)$

where:

$E2$ = fugitive particulate emissions (lbs/hr);

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86);

0.99 = capture efficiency for EAF canopy hood fume collection system; and

0.76 = fraction of total PM emissions assumed to be PM_{10} (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

- iii. $E3$ (emissions from additive, alloy, flux handling, & silos) = $A*B$

where:

$E3$ = particulate emissions from additive, alloy, flux handling, & silos (lbs/hr);

A = alloy, additives, flux handling, and silos emission factor, $8.0 \text{ E-}04$ lb/ton (emission factor provided by facility); and

B = maximum material throughput per hour, 172 tons/hr.

- iv. E total = $E1 + E2 + E3$

where:

E total = total hourly PM_{10} emissions from P908, P906 or P909, and P905 or P910, combined (lbs/hr);

$E1$ = particulate emissions from baghouse (lbs/hr);

$E2$ = fugitive particulate emissions (lbs/hr); and

$E3$ = particulate emissions from additive, alloy, flux handling, & silos (lb/hr).

c. Emission Limitation:

PM/PM₁₀emissions shall not exceed 70.06 tons per year based upon a rolling, 12-month summation for emissions units P908, P906 or P909, and P905 or P910 combined (includes stack and fugitive emissions).

Applicable Compliance Method:

To determine the annual particulate emission rate for emissions units P908, P906 or P909, and P905 or P910, combined, the following equations shall be used:

i. $E1(\text{stack emissions}) = (980,000 \text{ dscfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes}/\text{hr}) (\text{actual hours of operation}/\text{year}) (1 \text{ ton}/2000 \text{ pounds})$

where:

E1 = particulate emissions from baghouse (tons/year); and

980,000 dscfm = maximum baghouse flow rate.

ii. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced}/\text{year}) (1.4 \text{ pounds PE}/\text{ton of steel})(1-0.99) (1 \text{ ton}/2000 \text{ pounds})(0.76)$

where:

E2 = fugitive particulate emissions (tons/year);

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86);

0.99 = capture efficiency for EAF canopy hood fume collection system; and

0.76 = fraction of total PE emissions assumed to be PM₁₀ (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

iii. $E3 (\text{emissions from additive, alloy, flux handling, \& silos}) = A*B/2000 \text{ lbs}$

where:

E3 = particulate emissions from additive, alloy, flux handling, & silos (tons/year);

A = alloy, additives, and flux handling system's emission factor, 8.0 E-04 lb/ton; and

B = maximum material throughput per year, 1,400,000 tons.

iv. $E_{\text{total}} = E_1 + E_2 + E_3$

where:

E_{total} = total annual PM/PM₁₀ emissions from P908, P906 or P909, and P905 or P910, combined (tons/year);

E_1 = particulate emissions from baghouse (tons/year);

E_2 = fugitive particulate emissions (tons/year); and

E_3 = particulate emissions from additive, alloy, flux handling, & silos.

d. Emission Limitation:

Visible particulate emissions from the storage silo bin vent exhausts shall not exceed 20 percent opacity, as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible particulate emission limitation shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and OAC rule 3745-17-03(B)(1).

e. Emission Limitation:

Visible emissions of fugitive dust from the dumping of alloy and charge carbon into the receiving hopper shall not exceed 20 percent opacity, as a three-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emission limitation for fugitive dust shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and OAC rule 3745-17-03(B)(3).

f. Emission Limitation:

Visible emissions of fugitive dust from the alloy handling operations (i.e., the storage bins, trim bins, and batch holding bins) shall not exceed 20 percent opacity, as a three-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emission limitation for fugitive dust shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and OAC rule 3745-17-03(B)(3).

g) Miscellaneous Requirements

(1) None.

3. P910, Electric Arc Furnace

Operations, Property and/or Equipment Description:

Administrative Modification to PTI No. P0103995: An EAF melts steel scrap with electrodes in a batch operation. Expanded MeltshopBaghouse will be 1,200,000 acfm (980,000 dscfm).

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) d)(8) through d)(11) and e)(7).
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	See b)(2)c, b)(2)d, and b)(2)g. The requirements of this rule also include compliance with the requirements of the VE limitations specified in 40 CFR Part 60, Subpart AAa. The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-10 thru 20 for PM/PM ₁₀ , NO _x , SO ₂ , VOC, and CO.
b.	OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.
c..	OAC rule 3745-17-07(A)(1) & (B)(3)	The visible emission limitations specified by these rules are less stringent than the visible emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.
d.	OAC rule 3745-17-08	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-18-06	The SO ₂ emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.
f.	OAC rule 3745-31-05(A)(3)(a)(ii)	See b)(2)h.
g.	40 CFR Part 60, Subpart AAa	<p>Visible particulate emissions from the baghouse shall not exhibit three (3) per cent opacity or greater as a six-minute average.</p> <p>Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) per cent opacity or greater as a six-minute average.</p> <p>The mass 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.</p>
h.	OAC rule 3745-31-05(D)	<p>Pb emissions shall not exceed 1.18tons based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.</p> <p>Note that incremental increase of less than 0.6 ton per year based upon restrictions listed in c)(1).</p>
i.	OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM₁₀emissions shall not exceed 0.0018 gr/dscffor emissions units P906 or P909, P908 and P910, combined.</p> <p>PM/PM₁₀emissions shall not exceed 17.09 lbs/hrfor emissions units P906 or P909, P908 and P910, combined (includes stack and fugitive emissions).</p> <p>PM/PM₁₀emissions shall not exceed 70.06 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, P908 and P910, combined (includes stack and fugitive emissions).</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>All PM/PM₁₀ are considered filterable PM.</p> <p>NO_x emissions shall not exceed 68.8 lbs/hr and 0.40 pound per ton of steel for emissions units P906 or P909, and P910, combined.</p> <p>NO_x emissions shall not exceed 280 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.</p> <p>CO emissions shall not exceed 688 lbs/hr and 4.0 pounds per ton of steel for emissions units P906 or P909, and P910, combined.</p> <p>CO emissions shall not exceed 2,800 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.</p> <p>SO₂ emissions shall not exceed 43 lbs/hr and 0.25 pound per ton of steel for emissions units P906 or P909, and P910, combined.</p> <p>SO₂ emissions shall not exceed 175 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.</p> <p>VOC emissions shall not exceed 31 lbs/hr and 0.18 pound per ton of steel for emissions units P906 or P909, and P910, combined.</p> <p>VOC emissions shall not exceed 126 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.</p> <p>See b)(2)b.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
j.	<p>40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 - 10692)</p> <p>[In accordance with 40 CFR 63.10680(a) and (b)(1), this emissions unit is an electric arc furnace (EAF) that is an area source of hazardous air pollutants (HAPs) and commenced construction on or before September 30, 2008.]</p>	<p>You must achieve compliance with the applicable provisions of 40 CFR Part 63, Subpart YYYYYY by no later than June 30, 2008.</p> <p>You must achieve compliance with opacity limit in 40 CFR Part 63.10686(b)(2) or (c)(2) by no later than December 28, 2010.</p>
k.	OAC rule 3745-114-01	See d)(8), d)(9), d)(10), d)(11) and e)(7).

(2) Additional Terms and Conditions

- a. The permittee may, in the future, opt to install an electric arc furnace (P910) at the caster/VTD/LMF building. Should the new electric arc furnace get installed, upon startup of this emissions unit P910, the permittee shall cease the liquid steel production from emissions unit (P905).
- b. Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of direct-shell evacuation control system (DEC system), good furnace melting practices and proper operation of the EAF oxy-fuel burners, acceptance of a PE limitation of 0.0018 gr/dscf, acceptance of a NO_x limitation of 0.40 lb/ton of steel, acceptance of a SO₂ limitation of 0.25 lb/ton of steel, acceptance of a VOC limitation of 0.18 lb/ton of steel, and acceptance of a CO limitation of 4.0 lbs/ton of steel produced constitute BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rules 3745-31-(10) thru (20) above.
- c. The electric arc furnace shall be installed with a roof canopy hood fume collection system in addition to a direct evacuation control (DEC) system. These systems shall be capable of capturing a minimum of 99 percent of the generated emissions of particulate from the air contaminant source operation including charging, melting, refining, and tapping periods in the steel making cycle.
- d. Particulate emissions captured by the fume collection systems for the electric arc furnace shall be exhausted to the EAF/LMF fabric filter control device.
- e. The permittee shall follow the "Scrap Management Program" that was submitted to Ohio EPA, Northeast District Office (NEDO) and that was developed to minimize the use of scrap that contains extraneous materials such as oiled steel, pipes with residues and coatings, enameled materials, transmissions, shock absorbers, tinned materials, rubber, concrete, dirt, or wood that may contaminate the scrap charged into the EAF. The "Scrap Management Program" shall be

viewed as part of the operational requirements for the EAF permit. Any change to the "Scrap Management Program" that would increase the amounts of these compounds in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by the NEDO.

- f. The values for either the fan motor amperes and damper position for each operating fan or the volumetric flow rate through each separately ducted hood, as determined during the most recent visible particulate emission compliance demonstration, shall be maintained at all times when the EAF is operating (40 CFR Part 60.274a(c)).
- g. The control system fan motor amperes and all damper position, the volumetric flow rate through each separately ducted hood, or the volumetric flow rate at the control device inlet and all damper positions shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to d)(4) of this permit. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period (40 CFR Part 60.274a(c)).
- h. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead (Pb) emissions from emissions units P906 or P909, and P910, combined, since the uncontrolled potential to emit for Pb is less than ten tons per year.
- i. The scrap metals processed in this emissions unit is restricted to only those materials that comply with the scrap acquisition and inspection plan described in d)(7).
- j. The requirements of this Permit to Install supersede the requirements of PTI P0103995 issued on April 10, 2009.

c) Operational Restrictions

- (1) The permittee shall restrict the annual liquid steel production to 1,400,000 tons per year, based upon a rolling, 12-month summation of the production rates. This is an existing emissions unit which has existing records of the amount liquid steel production and therefore does not need to be restricted on a monthly basis.
- (2) See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 - 10692).

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information:
 - a. the hours of operation for each calendar month;

- b. the liquid steel production rate for each calendar month;
 - c. the rolling, 12-month summation of the hours of operation;
 - d. the rolling, 12-month summation of the liquid steel production rates; and
 - e. the rolling, 12-month summation of the PM/PM₁₀, VOC, CO, SO₂, NO_x and Pb emissions.
- (2) Visible particulate emissions observations of the EAF/LMF mono vent positive pressure fabric filter baghouse shall occur at least once per day of operation. Observations shall occur when the EAF is operating in the melting and refining phase of a heat cycle. Additional observations shall be made during the electric arc heating phase of the LMF processing cycle. These observations shall be taken in accordance with Method 9 of 40 CFR Part 60, Appendix A, and shall include at least three six-minute periods during EAF melting and refining and at least one six-minute period of the LMF electric arc heating phase in the processing cycle. The LMF observation may coincide with the EAF observations. The opacity shall be recorded where the greatest opacity of the visible emissions from the vents are observed in accordance with the procedures listed in Method 9 of 40 CFR Part 60, Appendix A. Records shall be maintained of all the visible particulate emissions observed. (40 CFR Part 60 Subpart AAa requires these opacity observations.)
- (3) The permittee shall perform observations of shop opacity by a certified visible emission observer in lieu of installing and maintaining a furnace static pressure monitoring device on the DEC equipped EAF. Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period (40 CFR Part 60.273a (d)).
- (4) The permittee shall either (a) check and record the fabric filter control system fan motor amperes and damper position for each of the operating fans on a once-per-shift basis ; (b) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or (c) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check record damper positions on a once-per-shift basis. The monitoring device(s) shall be installed in a location in the exhaust duct such that reproducible flow rate data may be obtained. The flow rate monitoring device(s) shall have an accuracy of +/- 10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The permittee may be required to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR, Part 60. The values of these parameters as determined during the most recent visible particulate emission compliance demonstration shall be maintained at the appropriate levels for each applicable period. Operation at other than baseline values may be considered unacceptable operation and maintenance of the control system. The permittee may petition for reestablishment of these parameters whenever the permittee can demonstrate satisfactorily that the operating conditions upon which the parameters were previously established are no longer applicable.

Checking and recording of the pressure drop readings across the baghouse will not be required due to additional installation requirements of monitoring device(s), as specified in this section. OEPA, however, reserves the right to request pressure drop readings, if problems arise.

- (5) The permittee shall perform monthly operational status inspections of the equipment that are important to the performance of the total capture system (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 the ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition for the approval of an alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
- (6) Shop opacity observations shall be conducted at least once per day for eighteen minutes when the furnace is operating in the meltdown and refining period. (The "shop" is the building that houses the EAF.) Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity 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 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. The shop opacity observations shall be taken at the shop roofline.
- (7) The permittee shall develop and write a Scrap Management Plan (Plan) for the selection and inspection of iron and steel scrap received for charge in the EAF. This plan shall provide for and define effective procedures to eliminate or minimize, to the extent practicable, mercury and organics charged to the electric arc furnace. The Plan is subject to approval by Ohio EPA and must be submitted to Ohio EPA, Northeast District Office, within 90 days of permit issuance. A copy of the plan must be maintained onsite and made readily available to all plant personnel having materials acquisition or inspection duties. A copy of the material specifications must be provided to all scrap suppliers. The Plan, at a minimum, shall include the following components:
 - a. A materials acquisition program which shall include:
 - i. Specifications for the supplier/marketer of the scrap metals that will minimize organic contaminants and mercury from the scrap received for charge to the electric arc furnace. The plan, at a minimum, shall call for the identification and removal of the following materials:
 - used oil filters,
 - plastic parts,
 - organic liquids (transmission fluid, motor oil, etc.),

metal containers with residual organic liquids, and
free liquids.

This program shall be applicable for scrap charged to this emissions unit.

- ii. Specifications for the supplier/marketer of automotive bodies requiring the removal of readily accessible mercury-containing devices from under the trunks and hoods and removal of lead components such as batteries and wheel weights.

A copy of the procedures used by the scrap supplier must be obtained and maintained onsite for either removing accessible mercury switches or for purchasing automobile bodies that have had readily accessible mercury switches removed, as applicable.

- b. Procedures for visual inspection of scrap metals which shall include:
 - i. procedures to document the amount (by weight) of each shipment of scrap received and the estimated percent of each shipment inspected; a representative portion of not less than 10 percent of each shipment of scrap metal received for charge into any scrap preheater and the electric arc furnace shall be inspected for the specifications contained in "i." above;
 - ii. identification of the location(s) where inspections are to be performed for each type of shipment, which shall provide a reasonable vantage point for visual inspections, with the consideration of worker safety; and
 - iii. provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and, unless satisfactory corrective measures are taken, limiting purchases whose shipments fail to meet specifications. The Plan shall describe what corrective actions are acceptable and when purchases will be limited.
 - iv. Record keeping requirements which shall include the following for each shipment:
 - (a) the amount, date received, type of scrap, and the supplier/marketer or each shipment of scrap metal received;
 - (b) the amount of material inspected, the date of inspection, and the inspector's name;
 - (c) the results of the inspection on a shipment-by-shipment basis, to include a description and estimated amount of any material not meeting the specifications in "i" above and the marketer/supplier of the rejected scrap metals;
 - (d) documentation of the return or disposal of the material rejected during each inspection;

- (e) certification, in writing, that each supplier/marketer of any scrap metals charged to this emissions unit has received the specifications of the Plan and agrees to these requirements; and
- (f) documentation that each supplier/marketer of scrap metals charged to this emissions unit has removed required materials in i.(a) and i.(b) above; or if the materials are not readily accessible, a description as to why the material could not be removed.

Note that this term shall not supersede the provisions and compliance dates listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692). The permittee is required to comply with the most stringent of the terms and sections of the term and the provisions of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) whichever the case maybe after the compliance dates of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit.

The permittee shall update their Plan after the compliance dates of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681-10692) for this emissions unit to include which terms are the most stringent, but no later than the compliance date listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit for submitting the Scrap Management Plan listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681-10692).

- (8) The permit-to-install (PTI) application for this/these emissions units, P906 or P909, if installed in the future as a replacement to P906, and P910 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
 - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices";
or

- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: Zinc Oxide

TLV (mg/m³): 10

Maximum Hourly Emission Rate (lbs/hr): 2.80

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 9.69

MAGLC (ug/m³): 238.10

The permittee, has demonstrated that emissions of Zinc Oxide, from emissions unit(s) P906 or P909, and P910 is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

- (9) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
 - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV 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 toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" 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 a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI, PTIO, or FEPTIO (as applicable) prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (10) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
 - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (11) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- (12) See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 - 10692).

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month liquid steel production rate limitation and, for the first 12 calendar months of operation following start-up, all exceedances of the allowable cumulative liquid steel production levels for this emissions unit.
- (2) The permittee shall submit deviation (excursion) reports that identify all exceedances of the visible particulate emission limit for the fabric filter control device. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is three percent or greater.
- (3) The permittee shall submit deviation (excursion) reports that identify all exceedances of the fugitive visible particulate emission limit for the electric arc furnace shop. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is six percent or greater.
- (4) The permittee shall submit deviation (excursion) reports that identify either operation of control system fan motor amperes at values exceeding + or - 15 percent of the value established during the most recent demonstration of compliance or operation at volumetric flow rates lower than those established during the compliance demonstration, when the EAF was operating (40 CFR Part 60.276a(c)).
- (5) The permittee shall submit deviation (excursion) reports that identify all instances when any portion of the Scrap Management Plan was not followed or the information required to be documented was not recorded.
- (6) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month summation of the PM/PM₁₀, VOC, CO, SO₂, NO_x, and Pb emissions.
- (7) The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.
- (8) See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 - 10692).

f) Testing Requirements

- (1) Compliance with the emissions limitations and/or control requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

PM/PM₁₀emissions shall not exceed 0.0018 gr/dscffor emissions units P906 or P909, P908 and P910, combined.

Applicable Compliance Method:

Compliance shall be demonstrated by emission testing as specified in f)(2).

b. Emission Limitation:

PM/PM₁₀emissions shall not exceed 17.09 lbs/hrfor emissions units P906 or P909, P908 and P910, combined (includes stack and fugitive emissions).

Applicable Compliance Method:

To determine the hourly particulate emission rate for P906 or P909, P908 and P910, combined, the following equations shall be used:

i. $E1(\text{emissions from baghouse}) = (980,000 \text{ dscfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes}/\text{hr})$

where:

$E1 = \text{particulate emissions from baghouse (lbs/hr); and}$

$980,000 \text{ dscfm} = \text{maximum baghouse flow rate.}$

ii. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced}/\text{hr}) (1.4 \text{ pounds PE}/\text{ton of steel}) (1-0.99)(0.76)$

where:

$E2 = \text{fugitive particulate emissions (lbs/hr);}$

$1.4 \text{ pounds PE}/\text{ton steel} = \text{emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86);}$

$0.99 = \text{capture efficiency for EAF canopy hood fume collection system; and}$

$0.76 = \text{fraction of total PM emissions assumed to be PM}_{10} \text{ (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).}$

iii. $E3 (\text{emissions from additive, alloy, flux handling, \& silos}) = A*B$

where:



E3 = particulate emissions from additive, alloy, flux handling, & silos (lbs/hr);

A = alloy, additives, flux handling, and silos emission factor, 8.0 E-04 lb/ton (emission factor provided by facility); and

B = maximum material throughput per hour, 172 tons/hr.

iv. $E_{\text{total}} = E1 + E2 + E3$

where:

E total = total hourly PM₁₀ emissions from P906 or P909, P908 and P910, combined (lbs/hr);

E1 = particulate emissions from baghouse (lbs/hr);

E2 = fugitive particulate emissions (lbs/hr); and

E3 = particulate emissions from additive, alloy, flux handling, & silos (lb/hr).

c. Emission Limitation:

PM/PM₁₀ emissions shall not exceed 70.06 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, P908 and P910, combined (includes stack and fugitive emissions).

Applicable Compliance Method:

To determine the annual particulate emission rate for P906 or P909, P908 and P910, combined, the following equations shall be used:

i. $E1(\text{stack emissions}) = (980,000 \text{ dscfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes/hr}) (\text{actual hours of operation/year}) (1 \text{ ton}/2000 \text{ pounds})$

where:

E1 = particulate emissions from baghouse (tons/year); and

980,000 dscfm = maximum baghouse flow rate.

ii. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced/year}) (1.4 \text{ pounds PE/ton of steel})(1-0.99) (1 \text{ ton}/2000 \text{ pounds})(0.76)$

where:

E2 = fugitive particulate emissions (tons/year);

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86);

0.99 = capture efficiency for EAF canopy hood fume collection system; and

0.76 = fraction of total PE emissions assumed to be PM₁₀ (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

iii. E_3 (emissions from additive, alloy, flux handling, & silos) = $A \cdot B / 2000$ lbs

where:

E_3 = particulate emissions from additive, alloy, flux handling, & silos (tons/year);

A = alloy, additives, and flux handling system's emission factor, 8.0 E-04 lb/ton; and

B = maximum material throughput per year, 1,400,000 tons.

iv. $E_{total} = E_1 + E_2 + E_3$

where:

E_{total} = total annual PM/PM₁₀ emissions from P906 or P909, P908 and P910, combined (tons/year);

E_1 = particulate emissions from baghouse (tons/year);

E_2 = fugitive particulate emissions (tons/year); and

E_3 = particulate emissions from additive, alloy, flux handling, & silos.

d. Emission Limitation:

NO_x emissions shall not exceed 68.8 lbs/hr and 0.40 pound per ton of steel for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the NO_x emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 7 or 7E.

e. Emission Limitation:

NO_x emissions shall not exceed 280 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

To determine the yearly NO_x emission rate for P906 or P909, and P910, combined, the following equation shall be used:

$$E = (0.40 \text{ pound NO}_x/\text{ton of steel}) (\text{tons of steel produced/yr}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = NO_x emissions (tons/yr); and

0.40 pound NO_x/ton of steel = permit allowable emission rate for NO_x.

f. Emission Limitation:

CO emissions shall not exceed 688 lbs/hr and 4.0 pounds per ton of steel for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the CO emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 10.

g. Emission Limitation:

CO emissions shall not exceed 2,800 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

To determine the annual CO emission rate for P906 or P909, and P910, combined, the following equation shall be used:

$$E = (4.0 \text{ pounds CO}/\text{ton of steel}) (\text{tons of steel produced}/\text{year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = CO emissions (tons/yr); and

4.0 pounds CO/ton of steel = permit allowable emission rate for CO.

h. Emission Limitation:

SO₂ emissions shall not exceed 43 lbs/hr and 0.25 pound per ton of steel for emissions units P906 or P909, and P910, combined.



Applicable Compliance Method:

If required by the Ohio EPA, compliance with the SO₂ emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 6 or 6C.

i. Emission Limitation:

SO₂ emissions shall not exceed 175 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

To determine the annual SO₂ emission rate for P906 or P909, and P910, combined, the following equation shall be used:

$$E = (0.25 \text{ pound SO}_2/\text{ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = SO₂ emissions (tons/yr); and

0.25 pound SO₂/ton of steel = permit allowable emission rate for SO₂.

j. Emission Limitation:

VOC emissions shall not exceed 31 lbs/hr and 0.18 pound per ton of steel for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the VOC emission rate shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 18, 25 or 25A.

k. Emission Limitation:

VOC emissions shall not exceed 126 tons per year based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

To determine the annual VOC emission rate for P906 or P909, and P910, combined, the following equation shall be used:

$$E = (0.18 \text{ pound VOC/ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:



E = VOC emissions (ton/yr); and

0.18 pound VOC/ton of steel = permit allowable emission rate for VOC.

I. Emission Limitation:

Pb emissions shall not exceed 1.18 tons based upon a rolling, 12-month summation for emissions units P906 or P909, and P910, combined.

Applicable Compliance Method:

To determine the annual Pb emission rate for the EAF the following equation shall be used:

$$E = (E \text{ total/yr}) (0.017)$$

where:

E = Pb emissions (tons/yr);

E total /yr = total annual PM/PM₁₀ emissions from EAF, as determined in f)(1)c; and

0.017 = the average Pb content of the baghouse dust, as a weight fraction.

Alternatively, the average Pb content analysis of the baghouse dust for the reporting period may be used to calculate the Pb emission.

m. Emission Limitation:

Visible emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emission limitation for fugitive dust shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and OAC rule 3745-17-03.

n. Emission Limitation:

Visible particulate emissions from the baghouse shall not exhibit three (3) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for the operation(s) identified above shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted within 6 months after startup of this emissions unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PM/PM₁₀, NO_x, CO, VOC, and SO₂.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

PM/PM₁₀ - Method 5D of 40 CFR Part 60, Appendix A

NO_x- Method 7 or 7E of 40 CFR Part 60, Appendix A

CO - Method 10 of 40 CFR Part 60, Appendix A

VOC - Method 18, 25, or 25A of 40 CFR Part 60, Appendix A

SO₂ - Method 6A of 40 CFR Part 60, Appendix A.

- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.
- e. 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 Northeast District Office. 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 test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).
- f. Personnel from the Ohio EPA Northeast District Office 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.



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- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

g) Miscellaneous Requirements

- (1) None.