



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: February 25, 2008
RE: Steel Dynamics, Inc. / 183-23905-00030
FROM: Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot12/03/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

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100 North Senate Avenue
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Indianapolis, Indiana 46204-2251
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Bill Bougher
Steel Dynamics, Inc. - Structural & Rail Division
2601 County Road 700 East
Columbia City, IN 46725

February 25, 2008

Re: 183-23905-00030
PSD Significant Source Modification to:
Part 70 permit No.: T183-17160-00030

Dear Mr. Bougher,

Steel Dynamics, Inc. - Structural & Rail Division was issued Part 70 operating permit T183-17160-00030 on July 3, 2007 for mini-mill that produces structural steel. An application to modify the source was received on November 17, 2006. Pursuant to 326 IAC 2-7-10.5, the following emission units are approved for construction at the source:

- (a) A LMS Baghouse. The new baghouse (rated at 350,000 acfm, will exhaust to stack 43) will control emissions from the ladle metallurgical station and continuous casters.
- (b) The following natural-gas fired units:
 - (i) One (1) natural gas-fired tundish preheater, identified as ID# 3p, with a nominal heat input rate of 15 MMBtu/hr.
 - (ii) Four (4) natural gas-fired horizontal ladle preheaters, identified as ID# 3q, 3r, 3s, and 3t, with nominal heat input rate of 10 MMBtu/hr, each.
 - (iii) Two (2) natural gas-fired vertical ladle preheaters, identified as ID# 3u and 3v, with a nominal heat input rate of 10 MMBtu/hr, each.
 - (iv) Two (2) natural gas-fired tundish dryers, identified as ID# 3w and ID# 3x, with a nominal heat input rate of 5 MMBtu/hr, each.

Emissions from these units will be captured by the meltshop canopy and exhaust to the existing EAF Baghouse (stack 1) and/or the new LMS Baghouse (stack 43).

In addition, the following modifications are approved:

- (a) Increase the airflow of the EAFs Baghouse. Current airflow rating is 933,333 acfm. Proposed airflow rating is 1,800,000 acfm.
- (b) Route emissions from the ladle metallurgical station and continuous casters from the existing EAFs Baghouse to the new LMS Baghouse.
- (c) Increase the nominal heat input rate of three (3) existing natural gas-fired tundish preheaters (ID# 3n, ID# 3h and ID# 3i) to 15 MMBtu/hr. Preheaters ID #3h and #3i are each currently 5 MMBtu/hr. Preheater ID #3n is currently 10 MMBtu/hr.
- (d) Remove the partially enclosed, roofed structure from the slag dump pits.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This PSD significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Bob Sidner, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (703) 633-1701 to speak directly to Mr. Sidner. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, or call (800) 451-6027 and ask for Duane Van Laningham or extension 3-6878, or dial (317) 233-6878.

Sincerely/Original Signed By:

Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Attachments
ERG/BS

cc: File - Whitley County
Whitley County Health Department
Air Compliance Section Inspector
Compliance Data Section
Administrative and Development
Technical Support and Modeling



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PART 70 SIGNIFICANT SOURCE MODIFICATION OFFICE OF AIR QUALITY

Steel Dynamics, Inc. Structural and Rail Division 2601 County Road 700 East Columbia City, Indiana 46725

(Herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

Except as otherwise stated in this permit, the Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Except as otherwise stated in this permit, noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. 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 conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B.11, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

1st Significant Source Modification No: 183-23905-00030	
Issued by/Original Signed By: Matthew Stuckey, Deputy Branch Chief Permits Branch Office of Air Quality	Issuance Date: February 25, 2008

SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary steel beam mini mill.

Source Address:	2601 County Road 700 East, Columbia City, Indiana 46725
Mailing Address:	2601 County Road 700 East, Columbia City, Indiana 46725
General Source Phone Number:	(260) 625-8100
SIC Code:	3312
NAICS:	331111
County Location:	Whitley
Source Location Status	Attainment for all criteria pollutants
Source Status:	1 of 28 Listed Source Categories Major source, under PSD Program Major source, under Part 70 Program Minor Source, CAA Section 112

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] 326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) Electric Arc Furnaces (EAFs) - - Stack 1
Two (2) single shell electric arc furnaces (EAFs), identified as EAF-1a and EAF-1b constructed in September 2002. These furnaces operate at a nominal combined rate of 300 tons of molten steel per hour and utilize a direct-shell evacuation control (DEC) system ("fourth hole" duct), an overhead roof exhaust system consisting of a capture system with a segmented canopy hood, scavenger duct, and cross-draft partitions.

These furnaces utilize the following emission control technologies:

- (i) A DEC for carbon monoxide (CO) and volatile organic compounds (VOC) emissions;
- (ii) Low NO_x/oxyfuel burners (combustion control) for nitrogen oxide (NO_x) emissions; and
- (iii) A baghouse (identified as EAFs Baghouse, ID# 1) for filterable particulate emissions.

The particulate and lead emissions escaping the DEC system are collected by the overhead roof exhaust system and exhaust through a stack identified as the EAFs Baghouse stack (Stack 1).

There are no roof monitors in the meltshop.

- (b) Ladle Metallurgy Station (LMS) - - Stack 43
One (1) ladle metallurgy refining station (LMS) (ID# 3a) with a nominal rate of 300 tons of steel per hour.

The LMS particulate emissions are collected by the overhead roof exhaust system, controlled by the LMS Baghouse and exhaust through the LMS Baghouse stack (Stack 43).

(c) Continuous Casters (CCs) - - Stack 43

The two (2) continuous casters are limited to a nominal combined casting capacity of 300 tons of steel per hour.

- (1) One (1) continuous caster (CC) (ID# 3k) with a nominal casting rate of 200 tons of steel per hour.
- (2) One (1) continuous caster, identified as (ID# 42a), with a nominal casting rate of 200 tons of steel per hour.

The particulate emissions from the continuous casters are collected by the overhead roof exhaust system, controlled by the LMS Baghouse and exhaust through the LMS Baghouse stack (Stack 43).

(d) Preheaters

- (1) Four (4) natural gas-fired low NO_x ladle preheaters (ID#s 3b through 3e), constructed in September 2002, each with a nominal heat input rate of 10 million British thermal units per hour (MMBtu/hr).
- (2) One (1) natural gas-fired low NO_x tundish nozzle preheater (ID# 3g), constructed in September 2002, with a nominal heat input rate of 10 MMBtu/hr.
- (3) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i), constructed in 2002 and approved for modification in 2008, each with a nominal heat input rate of 15 MMBtu/hr.
- (4) One (1) natural gas-fired Tundish Nozzle Preheater, identified as (ID# 3m), approved for construction under SSM183-18426-00030, nominally rated at 10 MMBtu/hr.
- (5) One (1) natural gas-fired Tundish Preheater, identified as (ID# 3n), constructed in 2002 and approved for modification in 2008, nominally rated at 15 MMBtu/hr.
- (6) One (1) natural gas-fired low NO_x tundish preheater (ID# 3p), approved for construction in 2008, with a nominal heat input rate of 15 MMBtu/hr.
- (7) Four (4) natural gas-fired low NO_x horizontal ladle preheaters (ID# 3q, 3r, 3s and 3t), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.
- (8) Two (2) natural gas-fired low NO_x vertical ladle preheaters (ID# 3u and 3v), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.

Combustion emissions from the preheaters exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the EAF Baghouse stack (stack 1) and/or LMS Baghouse stack (stack 43).

(e) Dryers

- (1) Two (2) natural gas-fired low NO_x ladle dryers (ID# 3f) constructed in September 2002 and (ID# 3l), (to be constructed under SSM183-18426-00030) each with a nominal heat input rate of 10 MMBtu/hr.
- (2) One (1) natural gas-fired low NO_x tundish dryer (ID# 3j), constructed in September 2002, with a nominal heat input rate of 5 MMBtu/hr.

- (3) One (1) natural gas-fired Tundish Dryer (ID# 3o), (to be constructed under SSM183-18426-00030) nominally rated at 5 MMBtu/hr.
- (4) Two (2) natural gas-fired low NO_x tundish dryers, (ID# 3w and 3x), approved for construction in 2008, with a nominal heat input rate of 5 MMBtu/hr, each.

Combustion emissions from the dryers exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the EAF Baghouse stack (stack 1) and/or LMS Baghouse stack (stack 43).

(f) Reheat Furnaces - - Stack 2 and Stack 41

- (1) One (1) natural gas-fired low NO_x reheat furnace (RH) (ID# 2) constructed in September 2002, with a nominal heat input rate of 260 MMBtu/hr.

Combustion and process emissions from the RH (ID# 2) exhaust through a stack identified as Stack 2.

- (2) One (1) natural gas-fired low NO_x reheat furnace, identified as ID# 41 (to be constructed under SSM183-18426-00030), with a nominal heat input rate of 260 MMBtu/hr.

Combustion and process emissions from this reheat furnace (ID# 41) exhaust through a stack, identified as Stack 41.

(g) Ladle Vacuum Degasser (LVD) and LVD Boiler - - Stack 40

One (1) ladle vacuum degasser (LVD) (ID# 40), constructed in 2003 with a nominal capacity of 300 tons per hour of steel and one (1) boiler constructed in 2003 to power the LVD. The LVD Boiler (ID# 41) has a nominal heat input capacity of 41.8 MMBtu/hr, and uses natural gas as the primary fuel, with propane as an emergency back up fuel.

Gases from the LVD are directed to the boiler for combustion in the boiler. Emissions from the boiler exhausts through a stack identified as Stack 40.

- (h) One (1) EAF dust storage silo (ID# 4), constructed in 2002, equipped with a bin vent filter for particulate control.

- (i) Eight (8) raw material storage silos (ID#s 5 through 12), and the associated raw material receiving station, constructed in 2002.

Each silo is equipped with a bin vent filter for particulate control.

- (j) A slag handling and processing area (ID# 14) constructed in 2002, operated by an independent contractor, with a nominal rated capacity of 250 tons per hour.

This processing area consists of slag pot dumping, deskulling, slag cooling, digging of slag pits by a front-end loader, loading of grizzly feeder by a front-end loader, crushing, screening, conveyor transfer points, loading of materials into piles, storage piles, load out of materials from piles, and vehicle movement around piles.

- (k) Transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles constructed in 2002.

- (l) One (1) cooling tower (ID# 13), constructed in 2002, with a nominal water flow of 15,000 gallons per minute.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to three one-hundredths (0.03) grains per dry standard cubic foot and a gas flow rate less than or equal to four thousand (4,000) actual cubic feet per minute, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying and woodworking operations.
- (b) Degreasing operations that do not exceed one hundred forty-five (145) gallons per twelve (12) months, except if subject to 326 IAC 20-6.
- (c) Cleaners and solvents characterized as:
 - (1) having a vapor pressure equal to or less than two (2.0) kilo Pascals fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or
 - (2) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit); the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.
- (d) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour.
- (e) A gasoline fuel transfer dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day and filling storage tanks having a capacity equal to or less than ten thousand five hundred (10,500) gallons. Such storage tanks may be in a fixed location or on mobile equipment.
- (f) Refractory storage not requiring air pollution control equipment.
- (g) Equipment used exclusively for the following:
 - (1) Packaging lubricants and greases.
 - (2) Filling drums, pails, or other packaging containers with lubricating oils, waxes and greases.
- (h) Production related activities, including the application of: oils; greases, lubricants; and nonvolatile material; as temporary protective coatings.
- (i) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing, cutting torches, soldering, welding
- (j) Closed loop heating and cooling systems.
- (k) Solvent recycling systems with batch capacity less than or equal to one hundred (100) gallons.
- (l) Water based activities, including activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume.
- (m) Quenching operations used with heat treating processes.
- (n) Repair activities, including the replacement or repair of electrostatic precipitators, bags in baghouses, and filters in other air filtration equipment.
- (o) Paved and unpaved roads and parking lots with public access.

- (p) Conveyors as follows:
 - (1) Covered conveyors for coal or coke conveying of less than or equal to three hundred sixty (360) tons per day.
 - (2) Covered conveyors for solid raw material, including limestone conveying of less than or equal to seven thousand two hundred (7,200) tons per day for sources other than mineral processing plants constructed after August 31, 1983.
- (q) Blowdown for the following: Sight glass; Boiler; Cooling tower; Compressors; and Pumps.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) except as provided by 326 IAC 2-7-3, because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22).
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]

- (a) This permit, T183-17160-00030, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ, copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This

certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)][326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:

- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,
Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.
- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
 - (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
 - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
 - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
 - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5] [326 IAC 2-2]

Except for the respective construction authorizations, all terms and conditions of the following permits:

PSD Permit Number	Issuance Dates
183-10097-00030	July 7, 1999
183-12692-00030	January 10, 2001
183-15170-00030	May 31, 2002
183-18658-00030	May 5, 2004

Issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. Except for the construction authorizations in Section B of Permit Nos. 183-10097-00030, 183-12692-00030, 183-15170-00030, and 183-18658-00030, these prior permits and all of their terms and conditions are hereby superseded.

B.14 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:
- (1) That this permit contains a material mistake.
 - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
 - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3] [326 IAC 2-7-4] [326 IAC 2-7-8(e)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source’s failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- Any such application shall be certified by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12 (b)(2)]

- (a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.
- (b) Notwithstanding 326 IAC 2-7-12(b)(1)(D)(i) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;
- (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b), (c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ, in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:
 - (1) A brief description of the change within the source;

- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

- (a) A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.
- (b) Any modification at an existing major source is governed by the requirements of 326 IAC 2-2-2 and/or 326 IAC 2-3-2.

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

- (b) Any application requesting a permit revision that recognizes a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due April 1 of each year.
- (b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

(a) Electric Arc Furnaces (EAFs) - - Stack 1

Two (2) single shell electric arc furnaces (EAFs), identified as EAF-1a and EAF-1b. These furnaces operate at a nominal combined rate of 300 tons of molten steel per hour and utilize a direct-shell evacuation control (DEC) system (“fourth hole” duct), an overhead roof exhaust system with a capture system consisting of a segmented canopy hood, scavenger duct, and cross-draft partitions.

These furnaces utilize the following emission control technologies:

- (i) A DEC for carbon monoxide (CO) and volatile organic compounds (VOC) emissions;
- (ii) Low NO_x/oxyfuel burners (combustion control) for nitrogen oxide (NO_x) emissions; and
- (iii) A baghouse (identified as EAFs Baghouse, ID# 1) for filterable particulate emissions.

The particulate and lead emissions escaping the DEC system are collected by the overhead roof exhaust system and exhaust through a stack identified as the EAFs Baghouse stack (Stack 1).

There are no roof monitors in the meltshop.

(b) Ladle Metallurgy Station (LMS) - - Stack 43

One (1) ladle metallurgy refining station (LMS) (ID# 3a) with a nominal rate of 300 tons of steel per hour.

The LMS particulate emissions are collected by the overhead roof exhaust system, controlled by the LMS Baghouse and exhaust through the LMS Baghouse stack (Stack 43).

(c) Continuous Casters (CCs) - - Stack 43

The two (2) continuous casters are limited to a nominal combined casting capacity of 300 tons of steel per hour.

- (1) One (1) continuous caster (CC) (ID# 3k) with a nominal casting rate of 200 tons of steel per hour.
- (2) One (1) continuous caster, identified as (ID# 42a), with a nominal casting rate of 200 tons of steel per hour.

The particulate emissions from the continuous casters are collected by the overhead roof exhaust system, controlled by the LMS Baghouse and exhaust through the LMS Baghouse stack (Stack 43).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 EAFs Operation Limitation [326 IAC 2-1.1-5] [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, 326 IAC 2-1.1-5 (Air Quality Requirements) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall operate EAF-1a and EAF-1b at a maximum combined rate of:

- (a) 300 tons of molten steel per hour, and

- (b) 2,628,000 tons of molten steel per 12-consecutive month period, with compliance determined at the end of each month.

D.1.2 Nitrogen Oxides (NO_x) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by SSM 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the EAF-1a and EAF-1b auxiliary burners shall be equipped with Low NO_x/oxyfuel burners.
- (b) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the total NO_x emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 0.35 pounds per ton of steel produced and 105 pounds of NO_x per hour, based on a three (3) hour block average.

D.1.3 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A (General Provisions), which are incorporated by reference in 326 IAC 12-1, apply to the EAFs except when otherwise specified in 40 CFR Part 60, Subpart AAa.

D.1.4 Particulate Matter (PM) [40 CFR Part 60, Subpart AAa]

Pursuant to 40 CFR Part 60, Subpart AAa (Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983), the filterable PM emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet.

D.1.5 Particulate Matter (PM/PM₁₀) - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2 (PSD – Control Technology Review Requirements):

- (a) Filterable PM/PM₁₀ emissions from EAF-1a and EAF-1b shall be controlled by the EAFs Baghouse.
- (b) The total filterable PM/PM₁₀ emissions from the EAFs Baghouse shall not exceed 0.0018 grains per dry standard cubic feet and 14.4 pounds per hour based on a 3-hour block average.
- (c) The total filterable and condensable PM₁₀ emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet and 41.6 pounds per hour based on a 3-hour block average.
- (d) There shall be no roof monitors in the melt shop.
- (e) The meltshop shall be located in a total enclosure subject to general ventilation that maintains the meltshop at a lower than ambient pressure to ensure in-draft through any doorway opening.

Ventilation air from the total enclosure shall be conveyed to the EAFs Baghouse.

- (f) A segmented canopy hood shall be maintained above EAF-1a and EAF-1b. The canopy shall be divided into separate sections and the dampers operated in a manner that will promote good capture efficiency for the EAFs Baghouse.

D.1.6 Sulfur Dioxide (SO₂) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), SO₂ emissions from EAF-1a and EAF-1b

shall be controlled in accordance with the Scrap Management Program (SMP) (Section E.2)

- (b) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total SO₂ emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 0.25 pounds per ton of steel and 75 pounds of SO₂ per hour based on a three (3) hour block average.
- (c) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and amended by 183-18658-00030, issued May 5, 2004, and 326 IAC 2-1.1-11:
- (1) The sulfur content of the direct reduced iron (DRI), charge carbon, and injection carbon added into the EAFs shall not exceed the following:

Raw Material	Sulfur Content (%)
direct reduced iron (DRI)	0.20
charge carbon	0.6
injection carbon	2.5

- (2) The Permittee may utilize the following alternative mixture of sulfur content of the charge carbon and injection carbon added into the EAFs:

Raw Material	Sulfur Content (%)
charge carbon	2.0
injection carbon	4.0

The Permittee shall not use DRI when charging this alternative mixture to the EAFs.

- (3) The Permittee shall obtain vendor certifications and/or analyses to verify that shipments of DRI, charge carbon, and injection carbon do not exceed the thresholds stated in Conditions D.1.6(c)(1) and D.1.6(c)(2).

D.1.7 Carbon Monoxide (CO) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the CO emissions from EAF-1a and EAF-1b shall be controlled by thermal oxidation and by maintaining a negative pressure at the direct-shell evacuation control (DEC) system air gap.
- (b) Pursuant to PSD SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total CO emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 2.0 pounds per ton of steel produced and 600 pounds of CO per hour, based on a three (3) hour block average.

D.1.8 Carbon Monoxide (CO) [326 IAC 9-1]

Pursuant to 326 IAC 9-1 (Carbon Monoxide Emission Limits), the Permittee shall not allow the discharge of CO from an EAF unless the waste gas stream is controlled by a direct-flame afterburner, boiler, or other approved method. The Permittee has elected thermal oxidation at the direct-shell evacuation control (DEC) system air gap, which is an OAQ approved method.

D.1.9 Volatile Organic Compounds (VOC) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the VOC emissions from EAF-1a and EAF-1b shall be minimized in accordance with the Scrap Management Program (SMP) (Section E.2) and shall be controlled by thermal oxidation and by maintaining a negative pressure at the direct-shell evacuation control (DEC) system air gap.
- (b) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total VOC emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 0.09 pounds per ton of steel and 27 pounds of VOC per hour, based on a three (3) hour block average.
- (c) These VOC limits are as defined in 326 IAC 1-2-90.

D.1.10 Lead - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the lead emissions from EAF-1a and EAF-1b shall be:
 - (1) minimized in accordance with the Scrap Management Program (SMP) (Section E.2), and
 - (2) controlled by a baghouse.
- (b) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total lead emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 0.00048 pounds per ton of steel and 0.144 pounds of lead per hour, based on a three (3) hour block average.

D.1.11 Mercury - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the mercury emissions from EAF-1a and EAF-1b shall be:
 - (1) minimized in accordance with the-Scrap Management Program (SMP) (Section E.2), and
 - (2) controlled by a baghouse.
- (b) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total mercury emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 5.21×10^{-4} pounds per ton of steel and 0.1563 pounds of mercury per hour, based on a three (3) hour block average.

D.1.12 Fluorides- PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the fluoride emissions from EAF-1a and EAF-1b shall be:
 - (1) minimized by using the granular type of Fluorspar, instead of the powdered type and
 - (2) controlled by a baghouse.

- (b) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total fluoride emissions from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) shall not exceed 0.01 pounds per ton of steel and 2.09 pounds of Fluorides per hour based on a three (3) hour block average.

D.1.13 Hazardous Air Pollutant (HAP) Limitations [326 IAC 2-1.1-4] [326 IAC 2-2] [326 IAC 2-4.1-1]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-4, the Permittee shall not allow:

- (a) Beryllium to be emitted from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) in a total quantity equal to or greater than 8.6×10^{-5} pounds per hour.
- (b) Manganese compounds to be emitted from the EAFs Baghouse stack (stack 1) and LMS Baghouse stack (stack 43) in a total quantity equal to or greater than 2.28 pounds per hour.

Compliance with these limitations will assure that the requirements of 326 IAC 2-2 Prevention of Significant Deterioration (PSD) do not apply for beryllium and that the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control) do not apply to the source.

D.1.14 Visible Emission Limitations - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2 (PSD – Control Technology Review; Requirements):

- (a) Visible emissions of the stack exhaust from the EAFs Baghouse (Stack 1) shall not exceed three percent (3%) opacity based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).
- (b) Visible emissions of the stack exhaust from the LMS Baghouse (Stack 43) shall not exceed three percent (3%) opacity, based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).
- (c) Particulate matter (PM and PM₁₀) emissions from the EAFs Baghouse shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9) when emitted from any building opening.

Compliance with the above opacity limitations shall also satisfy the requirements of 326 IAC 5-1-2 (Opacity Limitations) under Condition C.2 - Opacity.

D.1.15 Visible Emission Limitations [40 CFR Part 60, Subpart AAa]

Pursuant to 40 CFR 20.272a(a), the Permittee shall not cause to discharge into the atmosphere from the EAFs any gases that:

- (a) Exit from the EAFs Baghouse stack (Stack 1) and exhibit three percent (3%) opacity or greater; and
- (b) Exit from the melt shop, and due solely to the operations of EAF-1a and EAF-1b, exhibit six percent (6%) opacity or greater.

Compliance with the above opacity limitations shall also satisfy the requirements of 326 IAC 5-1-2 (Opacity Limitations) under Condition C.2 - Opacity.

D.1.16 Ladle Metallurgy Station (LMS) and Continuous Casters (CC) - PSD Best Available Control Technology (BACT) [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT):

- (a) PM/PM10 emissions from the Ladle Metallurgical Station (ID# 3a) and Continuous Casters (ID# 3k and ID# 42a) shall be controlled by the LMS Baghouse.
- (b) The PM/PM10 emissions from the following facilities are limited as indicated in the table below:

<u>Stack #:</u> Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions	
	(gr/dscf)	(lb/hr)	(gr/dscf)	(lb/hr)
<u>Stack 43:</u> Ladle Metallurgical Station (ID# 3a) and Continuous Casters (ID# 3k and ID# 42a)	0.0018	3.9	0.0052	11.2

D.1.17 Preventive Maintenance Plan (PMP) [326 IAC 1-6-3] [326 IAC 2-7-5(13)]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 1-6-3, a Preventive Maintenance Plan (PMP), in accordance with Condition B.10 - Preventive Maintenance Plan (PMP) of this permit, is required for EAF-1a, EAF-1b and LMS and their associated control devices.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.1.18 Baghouse Operation [326 IAC 2-2] [326 IAC 2-7-6(6)]

In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.19 Testing Requirements [326 IAC 2-1.1-11] [40 CFR 60.275a]

Pursuant to 326 IAC 2-1.1-11:

- (a) **NOx**
 The Permittee shall test for NOx on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

 This NOx test shall be repeated at least once every 2.5 years from the date of the last valid compliance demonstration.
- (b) Within 180 days after startup of the EAF Baghouse (following its modification permitted by PSD SSM 183-23905-00030), the Permittee shall perform PM/PM₁₀ testing on the stack emissions from the EAF Baghouse (stack 1) in order to demonstrate compliance with the PM/PM₁₀ limits established by 326 IAC 2-2 and 40 CFR Part 60. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀ for the purpose of determining compliance with 326 IAC 2-2. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.
- (c) Within 180 days after startup of the LMS Baghouse, the Permittee shall perform PM/PM₁₀ and opacity testing on the emissions from the LMS Baghouse (stack 43) in order to demonstrate compliance with the PM/PM₁₀ and opacity limits established by 326 IAC 2-2.

These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀ for the purpose of determining compliance with 326 IAC 2-2. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.

(d) Lead

The Permittee shall stack test for lead on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43), utilizing Method 12 and a method detection level which is below the emission limit, within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

This lead test shall be repeated at least once every year from the date of the last valid compliance demonstration.

(e) SO₂

The Permittee shall test for SO₂ on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

This SO₂ test shall be repeated at least once every 2.5 years from the date of the last valid compliance demonstration.

(f) Mercury

The Permittee shall test for mercury on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

This mercury test shall be repeated at least once every year from the date of the last valid compliance demonstration.

(g) Fluorides

The Permittee shall test for fluorides on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

This fluorides test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

(h) Manganese

The Permittee shall test for manganese on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

This manganese test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

(i) All testing shall be conducted in accordance with C.9 - Performance Testing.

D.1.20 CO and VOC Continuous Emission Rate Monitoring Requirement [326 IAC 2-1.1-11] [326 IAC 3-5]

- (a) Pursuant to 326 IAC 2-1.1-11 and 326 IAC 3-5-1(d), the Permittee shall calibrate, certify, operate, and maintain a continuous emission monitoring system (CEMS) for measuring CO and VOC emissions rates in pounds per hour from the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.
- (b) Pursuant to 326 IAC 2-1.1-11 and 326 IAC 3-5-4(a), the Permittee shall submit to IDEM, OAQ, within ninety (90) days after installation of a new monitor, a complete written continuous monitoring standard operating procedure (SOP). If revisions are made to an existing SOP, updates shall be submitted to IDEM, OAQ biennially.
- (c) Pursuant to 326 IAC 2-1.1-11, the Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.
- (d) Whenever the CO or VOC continuous emission monitor is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, the Permittee shall perform once per day operational status inspections of the equipment that is important to the performance of the DEC, canopy hood and 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 ductwork, and fan erosion) unless such observations require the process units to be inoperative.

Any deficiencies shall be noted and proper maintenance performed. This requirement does not replace the routine monthly inspections of the same equipment.

D.1.21 Visible Emission Observations and Continuous Opacity Monitoring (COM) [326 IAC 2-1.1-11] [326 IAC 3-5] [40 CFR 60.273a]

- (a) Pursuant to 326 IAC 2-1.1-11, 326 IAC 3-5, and 40 CFR 60.273a:
 - (1) The Permittee shall calibrate, certify, operate, and maintain a continuous monitoring system (COMS) to measure opacity from the EAFs Baghouse stack (Stack 1) in accordance with 326 IAC 3-5-2 and 3-5-3.
 - (2) The Permittee shall submit to IDEM, OAQ, within (90) days after installation of a new monitor, a complete written continuous monitoring standard operating procedure (SOP). If revisions are made to the SOP, updates shall be submitted to IDEM, OAQ biennially.
- (b) The COMS shall meet the performance specifications of 40 CFR 60, Appendix B, Performance Specification No. 1, and are subject to monitor system certification requirements pursuant to 326 IAC 3-5.
- (c) In the event that a breakdown of a COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
- (d) Whenever a COMS is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours or more and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide a certified opacity reader, who may be an employee of the Permittee or an independent contractor, to self-monitor the emissions from the emission unit stack.

- (1) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.
- (2) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day during daylight operations, with at least four (4) hours between each set of readings until a COMS is online.
- (3) Method 9 readings may be discontinued once a COM is online.
- (4) Any opacity exceedances determined by Method 9 readings shall be reported with the Quarterly Opacity Exceedances Reports.
- (e) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 326 IAC 3-5 and 40 CFR 60.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.22 Bag Leak Detection System (BLDS) [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005:

- (a) The Permittee shall operate continuous bag leak detection systems (BLDS) for the EAFs Baghouse. The bag leak detection systems (BLDS) shall meet the following requirements:
 - (1) The bag leak detection systems (BLDS) must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0018 grains per actual cubic foot or less.
 - (2) The bag leak detection system (BLDS) sensor must provide output of relative particulate matter loading.
 - (3) The bag leak detection system (BLDS) must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.
 - (4) The bag leak detection system (BLDS) shall be operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for operation, and adjustment of the system.
 - (5) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.
 - (6) The bag detector must be installed downstream of the baghouse.
 - (7) Each sensor should be inspected at least once a month to remove any build-up of material that may collect on the probe or insulator.
 - (8) Monthly QA checks shall be performed to ensure that the monitor is operating properly. If the results of the response test of electronics drift check are not favorable, the cause shall be investigated and any malfunctions corrected.
- (b) In the event of a bag leak detection system alarm:

- (1) The affected compartments will be shut down as soon as possible until the failed units have been repaired or replaced.
- (2) Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B.11 - Emergency Provisions).
- (3) The Permittee shall take response steps according to the timetable described in the Section C.16 – Response to Excursions or Exceedances shall be initiated.

For any failure with corresponding response steps and timetable not described in the Section C.16 – Response to Excursions or Exceedances, response steps shall be devised no later than eight (8) business hours of discovery of the failure and shall include a timetable for completion.

- (3) Failure to take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (c) If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced.

The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.23 Monitoring of Operations [40 CFR 60.274a]

Pursuant to 40 CFR 60.274a, the Permittee shall comply with the following monitoring requirements:

- (a) Except as provided under subsection (e) of this condition, the Permittee shall check and record on a once per shift basis the furnace static pressure if the DEC system is in use, and a furnace static pressure gauge is installed according to subsection (d) of this condition and either:
 - (1) check and record the control system fan motor amperes and damper positions on a once-per-shift basis; or
 - (2) calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or
 - (3) calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and records damper positions on a once-per-shift basis.

The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result.

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 IDEM, OAQ, or the U.S. EPA may require the Permittee to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of 40 CFR Part 60, Appendix A.

- (b) The Permittee shall determine either:
 - (1) the control system fan motor amperes and all damper positions or

- (2) the volumetric flow rate through each separately ducted hood

during all periods in which a hood is operated for the purpose of capturing emissions from the EAFs.

- (c) The Permittee shall perform monthly operational status inspections of the equipment that is 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 ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

- (d) Except as provided under item (f) of this condition, if emissions during any phase of the heat time are controlled by the use of a DEC system, the Permittee shall calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The pressure shall be recorded as 15-minute integrated averages.

The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained.

The pressure monitoring device shall have an accuracy of ± 5 millimeter of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

- (e) Except as provided under item (f) of this condition, when the Permittee is required to demonstrate compliance with the standard under Condition D.1.15(b) and at any other time the U.S. EPA may require under Section 114 of the CAA, the pressure in the free space inside the EAF shall be determined during the melting and refining period(s) using the monitoring device required under item (d) of this condition.

The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a melting and refining period.

- (f) Pursuant to 40 CFR 60.273a(d), a furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of the shop opacity are performed by a certified visible emission observer as follows:

- (1) Shop opacity observations shall be conducted at least once per day when the furnace is operating in the melting and refining period.
- (2) 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.
- (3) 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.
- (4) In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

D.1.24 Monitoring for Total Building Enclosure [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2, the Permittee shall demonstrate compliance

with the requirement to provide total enclosure of the meltshop using the procedures listed in either (1) or (2) below:

This compliance demonstration shall be repeated at the time of each Method 12 stack test for lead emissions from the meltshop baghouse stack.

The results of this compliance demonstration shall be submitted to IDEM, OAQ with the test results of each Method 12 stack test for lead emissions from the meltshop baghouse.

- (1)(A) The Permittee shall use a propeller anemometer or equivalent device meeting the requirements specified in (i) through (iii) below:
- (i) The propeller of the anemometer shall be made of a material of uniform density and shall be properly balanced to optimize performance.
 - (ii) The measurement range of the anemometer shall extend to at least 300 meters per minute (1,000 feet per minute).
 - (iii) A known relationship shall exist between the anemometer signal output and air velocity, and the anemometer must be equipped with a suitable readout system.
- (B) Doorway in-draft shall be determined by placing the anemometer in the plane of the doorway opening near its center.
- (C) Doorway in-draft shall be demonstrated for each doorway that is open during normal operation with all remaining doorways in the position that they are in during normal operation.

When the doorway in-draft is not demonstrated for any doorway that is open during normal operation, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.

- (2)(A) The Permittee shall install a differential pressure gauge on the leeward wall of the building to measure the pressure difference between the inside and outside of the building.
- (B) The pressure gauge shall be certified by the manufacturer to be capable of measuring pressure differential in the range of 0.02 to 0.2 mm Hg.
- (C) Both the inside and outside taps shall be shielded to reduce the effects of wind.
- (D) The Permittee shall demonstrate the inside of the building is maintained at a negative pressure as compared to the outside of the building of no less than 0.02 mm Hg when all doors are in the position they are in during normal operation.

When the pressure differential between the inside and outside of the building is less than 0.02 mm Hg the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.25 Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the LMS Baghouse shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

- (b) For processes operated continuously, “normal” means those conditions prevailing, or expected to prevail, at least eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions and Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions and Exceedances, shall be considered a deviation from this permit.

D.1.26 Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the LMS baghouse at least once per day when the respective facilities are in operation.
- (b) When for any one reading, the pressure drop is outside the normal range of 3.0 and 9.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (c) The instrument used for determining the pressure drop shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.27 Record Keeping Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) To document compliance with Conditions D.1.20 and D.1.21, the Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner so that they may be inspected by the IDEM, OAQ, or the U.S. EPA., if so requested or required.
- (b) To document compliance with Condition D.1.1 - EAFs Operation Limitation, the Permittee shall maintain records of the amount of steel produced.
- (c) To document compliance with Conditions D.1.7 - CO PSD BACT and D.1.9 - VOC PSD BACT, the Permittee shall maintain records of the readings of the CO and VOC CEMS.
- (d) To document compliance with Condition D.1.21(d), the Permittee shall maintain records of visible emission readings required by those conditions and make the records available upon request to IDEM, OAQ, and the U.S. EPA.
- (e) Pursuant to 40 CFR 60.276a, records of the measurements required in 40 CFR 60.274a must be retained for at least 5 years following the date of the measurement.
- (f) In order to demonstrate compliance with Condition D.1.6, the Permittee shall maintain records of the verification of sulfur content of DRI, charge carbon, and injection carbon added into the EAFs.
- (g) In order to demonstrate compliance with Condition D.1.22, the Permittee shall maintain records of the dates and times of all bag leak detection system alarms, the cause of each alarm, and an explanation of all corrective actions taken.

- (h) To document compliance with Condition D.1.23, the Permittee shall also maintain records of the dates and results of the sensor inspections, response tests, electronic drift checks, and response steps taken.
- (i) To document compliance with Condition D.1.25, the Permittee shall maintain records of the visible emission notations required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (j) To document compliance with Condition D.1.26, the Permittee shall maintain records of the pressure drop readings required by that condition. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
- (k) All records shall be maintained in accordance with Condition C.19 - General Record Keeping Requirements of this permit.
- (l) Records necessary to demonstrate compliance shall be available not later than 30 days of the end of each compliance period.

D.1.28 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) To document compliance with Condition D.1.1 - EAFs Operation Limitation, the Permittee shall submit a quarterly summary of the actual amount of steel produced, using the Steel Production Report or its equivalent, located at the end of this permit. These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C.20 - General Reporting Requirements of this permit.
- (b) The Permittee shall submit a quarterly excess emissions report, if applicable, based on the continuous emissions monitor (CEM) data for CO and VOC, and continuous opacity monitor (COM) data, pursuant to 326 IAC 3-5-7.

These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C.20- General Reporting Requirements of this permit.
- (c) Pursuant to 40 CFR 60.276a, the Permittee shall comply with the following reporting requirements:
 - (i) The Permittee shall submit a semi-annual written report of exceedances of the control device opacity to IDEM, OAQ, and upon request, the U.S. EPA.
 - (ii) If applicable the Permittee shall submit semi-annually any values that exceed the furnace static pressure value established under 40 CFR 60.274a(g) and either values of control system fan motor amperes that exceed 15 percent of the value established under 40 CFR 60.274a(c) or values of flow rates lower than those established under 40 CFR 60.274a(c) to IDEM, OAQ, and upon request, the U.S. EPA.
 - (iii) The Permittee shall furnish to IDEM, OAQ, and the U.S. EPA a written report of the results of the compliance emission tests required by 40 CFR Part 60. This report shall include the following information:
 - (A) Facility name and address;
 - (B) Plant representative;

- (C) Make and model of process, control device, and continuous monitoring equipment;
- (D) Flow diagram of process and emissions capture equipment including other equipment or process(es) ducted to the same control device;
- (E) Rated (design) capacity of process equipment;
- (F) The following operating conditions:
 - (1) List of charge and tap weights and materials;
 - (2) Heat times and process log;
 - (3) Control device operation log; and
 - (4) Continuous monitor or Reference Method 9 data.
- (G) Test dates and test times;
- (H) Test company;
- (I) Test company representative;
- (J) Test observers from outside agency;
- (K) Description of test methodology used, including any deviation from standard reference methods;
- (L) Schematic of sampling location;
- (M) Number of sampling points;
- (N) Description of sampling equipment;
- (O) Listing of sampling equipment calibrations and procedures;
- (P) Field and Laboratory data sheets;
- (Q) Description of sample recovery procedures;
- (R) Sampling equipment leak check results;
- (S) Description of quality assurance procedures;
- (T) Description of analytical procedures;
- (U) Notation of sample blank corrections; and
- (V) Sample emission calculations.

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

Preheaters

- (1) Four (4) natural gas-fired low NO_x ladle preheaters (IDs 3b through 3e), each with a nominal heat input rate of 10 million British Thermal Units per hour (MMBtu/hr).
- (2) One (1) natural gas-fired low NO_x tundish nozzle preheater (ID# 3g), constructed in 2002, with a nominal heat input rate of 10 MMBtu/hr.
- (3) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i), constructed in 2002 and approved for modification in 2008, each with a nominal heat input rate of 15 MMBtu/hr.
- (4) One (1) natural gas-fired Tundish Nozzle Preheater, identified as (ID# 3m), approved for construction under SSM183-18426-00030, nominally rated at 10 MMBtu/hr.
- (5) One (1) natural gas-fired Tundish Preheater, identified as (ID# 3n), constructed in 2002 and approved for modification in 2008, nominally rated at 15 MMBtu/hr.
- (6) One (1) natural gas-fired low NO_x tundish preheater (ID# 3p), approved for construction in 2008, with a nominal heat input rate of 15 MMBtu/hr.
- (7) Four (4) natural gas-fired low NO_x horizontal ladle preheaters (ID# 3q, 3r, 3s and 3t), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.
- (8) Two (2) natural gas-fired low NO_x vertical ladle preheaters (ID# 3u and 3v), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.

Combustion emissions from the preheaters exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the EAF Baghouse stack (stack 1) and/or LMS Baghouse stack (stack 43).

Dryers

- (1) Two (2) natural gas-fired low NO_x ladle dryers (ID# 3f and ID# 3l), each with a nominal heat input rate of 10 MMBtu/hr.
- (2) One (1) natural gas-fired low NO_x tundish dryer (ID# 3j), with a nominal heat input rate of 5 MMBtu/hr.
- (3) One (1) natural gas-fired Tundish Dryer (ID# 3o), (to be constructed under SSM183-18426-00030) nominally rated at 5 MMBtu/hr.
- (4) Two (2) natural gas-fired low NO_x tundish dryers, (ID# 3w and 3x), approved for construction in 2008, with a nominal heat input rate of 5 MMBtu/hr, each.

Combustion emissions from the dryers exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the EAF Baghouse stack (stack 1) and/or LMS Baghouse stack (stack 43).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Nitrogen Oxides (NO_x) Emissions [326 IAC 2-2]

Pursuant to PSD SSM 183-23905-00030:

- (a) The total natural gas combusted by tundish preheaters ID# 3p, 3n, 3h and 3i shall be less than 241 million standard cubic feet (MMSCF) per twelve consecutive month period with compliance determined at the end of each month.
- (b) The NO_x emissions from tundish preheater ID# 3p, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall not exceed 0.1 pounds per MMBtu.

Compliance with these limits, and the NO_x BACT limits on preheaters ID# 3n, 3h and 3i, is equal to a NO_x emission increase from the modification of less than 40 tons per year and renders the requirements of 326 IAC 2-2 not applicable.

D.2.2 PM/PM10 Emissions - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the PM/PM10 emissions from tundish preheaters ID# 3p, 3h, 3i, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall:

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

D.2.3 Nitrogen Oxides (NO_x) - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD CP183-10097-00030, issued July 7, 1999, amended by PSD SSM183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the following units:

- (a) Four (4) natural gas-fired low NO_x ladle preheaters (ID#s 3b through 3e),
- (b) One (1) natural gas-fired low NO_x tundish nozzle preheater (ID# 3g),
- (c) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i),
- (d) One (1) natural gas-fired low NO_x ladle dryer (ID# 3f), and
- (e) One (1) natural gas-fired low NO_x tundish dryer (ID# 3j)

shall use low NO_x natural gas-fired burners and NO_x emissions shall not exceed 0.10 pound per MMBtu.

D.2.4 Ladle Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

- (a) The second ladle dryer (ID# 3l) shall use natural gas as fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the second ladle dryer (ID# 3l).
- (c) The nitrogen oxides (NO_x) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.1 pounds per MMBtu based on a three (3) hour block average.
- (d) The carbon monoxide (CO) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.084 pounds per MMBtu based on a three (3) hour block average.

- (e) The volatile organic compound (VOC) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0055 pounds per MMBtu based on a three (3) hour block average.
- (f) The sulfur dioxide (SO₂) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0006 pounds per MMBtu based on a three (3) hour block average.
- (g) The PM (filterable) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0019 pounds per MMBtu based on a three (3) hour block average.
- (h) The PM₁₀ (filterable and condensable) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0076 pounds per MMBtu based on a three (3) hour block average.
- (i) Good combustion practices shall be observed.

D.2.5 Tundish Nozzle Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Tundish Nozzle Preheater (ID# 3m) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Nozzle Preheater (ID# 3m).
- (c) The NO_x emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.1 pounds per MMBtu based on a 3-hour block average.
- (d) The CO emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.084 pounds per MMBtu based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.0055 pounds per MMBtu based on a 3-hour block average.
- (f) The SO₂ emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.0006 pounds per MMBtu based on a 3-hour block average.
- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.0076 pounds per MMBtu based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

D.2.6 Tundish Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Tundish Preheater (ID# 3n) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Preheater (ID# 3n).
- (c) The NO_x emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.1 pounds per MMBtu based on a 3-hour block average.

- (d) The CO emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.084 pounds per MMBtu based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0054 pounds per MMBtu based on a 3-hour block average.
- (f) The SO₂ emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0006 pounds per MMBtu based on a 3-hour block average.
- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0076 pounds per MMBtu based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

D.2.7 Tundish Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Tundish Dryer (ID# 3o) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Dryer (ID# 3o).
- (c) The NO_x emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.1 pounds per MMBtu, based on a 3-hour block average.
- (d) The CO emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.084 pounds per million Btu based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.0055 pounds per MMBtu based on a 3-hour block average.
- (f) The SO₂ emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.0006 pounds per MMBtu based on a 3-hour block average.
- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.0076 pounds per MMBtu based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.8 Record Keeping Requirements

To document compliance with Condition D.2.1, the Permittee shall maintain daily records of the fuel used by tundish preheaters ID# 3p, 3n, 3h and 3i. All records shall be maintained in accordance with Condition C.19 (General Record Keeping Requirements) of this permit.

D.2.9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

SECTION D.3

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

Reheat Furnaces - - Stack 2 and Stack 41

- (1) One (1) natural gas-fired low NO_x reheat furnace (RH) (ID# 2) with a nominal heat input rate of 260 MMBtu/hr.

Combustion and process emissions from the RH (ID# 2) exhaust through a stack identified as Stack 2.

- (2) One (1) natural gas-fired low NO_x reheat furnace, identified as (ID# 41), with a nominal heat input rate of 260 MMBtu/hr.

Combustion and process emissions from this reheat furnace (ID# 41) exhaust through a stack, identified as Stack 41.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Nitrogen Oxides (NO_x) - Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the Reheat Furnace (RF) (ID# 2) shall be limited to the use of ultra low- NO_x natural gas-fired burners such that NO_x emissions shall not exceed 0.11 pound per MMBtu.
- (b) Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification 183-12692-00030, issued January 10, 2001, the Permittee shall not allow more than 189.8 million cubic feet of natural gas to be combusted in the Reheat Furnace (RF) (ID# 2) on a monthly basis averaged over a twelve (12) month period, with compliance determined at the end of each month.

D.3.2 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the CO emissions from the Reheat Furnace (RF) (ID# 2) shall not exceed 0.03 pound per MMBtu.

D.3.3 Reheat Furnace PSD BACT [326 IAC 2-2]

Pursuant to PSD Permit SSM183-18426-00030, issued November 21, 2005 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Reheat Furnace (ID# 41) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Reheat Furnace (ID# 41).
- (c) The NO_x emissions from the Reheat Furnace (ID# 41) shall not exceed 0.08 pounds per MMBtu and 20.8 pounds per hour, based on a 3-hour block average.
- (d) The CO emissions from the Reheat Furnace shall not exceed 0.03 pounds per MMBtu and 7.8 pounds per hour, based on a 3-hour block average.

- (e) The VOC emissions from the Reheat Furnace (ID# 41) shall not exceed 0.005 pounds per MMBtu and 1.3 pounds per hour, based on a 3-hour block average.
- (f) The SO₂ emissions from the Reheat Furnace (ID# 41) shall not exceed 0.0006 pounds per MMBtu and 0.156 pounds per hour, based on a 3-hour block average.
- (g) The filterable particulate matter (PM) emissions from the Reheat Furnace (ID# 41) shall not exceed 0.0019 pounds per MMBtu and 0.49 pounds per hour, based on a 3-hour block average.
- (h) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Reheat Furnace (ID# 41) shall not exceed 0.0076 pounds per MMBtu and 1.98 pounds per hour, based on a 3-hour block average.
- (i) The visible emissions from the Reheat Furnace (ID# 41) Stack 41 shall not exceed 3% opacity.
- (j) The lead emissions from the Reheat Furnace (ID# 41) shall not exceed 0.0005 pounds per MMBtu and 0.13 pounds per hour, based on a 3-hour block average.
- (k) The mercury emissions from the Reheat Furnace (ID# 41) shall not exceed 0.00026 pounds per MMBtu and 0.068 pounds per hour, based on a 3-hour block average.
- (l) Good combustion practices shall be observed.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.3.4 Low NO_x Burners [326 IAC 2-2]

Pursuant to PSD Permit SSM183-18426-00030, issued November 21, 2005 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the Reheat Furnace (ID# 41) shall utilize the low NO_x burners at all times when the Reheat Furnace (ID# 41) is in operation.

D.3.5 Testing Requirements [326 IAC 2-1.1-11]

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- (a) Pursuant to PSD Permits CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-1.1-11, the Permittee shall perform NO_x and CO testing on the Reheat Furnace (RF) (ID# 2) at least once every five (5) years from the date of the last valid compliance demonstration.
 - (b) Pursuant to PSD Permit SSM183-18426-00030, issued November 21, 2005 and 326 IAC 2-1.1-11, the Permittee shall test for NO_x on the Reheat Furnace stack (Stack 41) within 60 days after achieving maximum capacity, but no later than 180 days after the initial start up of the Reheat Furnace (ID# 42) utilizing methods as approved by the Commissioner.

This NO_x test shall be repeated thereafter at least once every five (5) years from the date of the last valid compliance demonstration.
 - (c) Testing shall be conducted in accordance with Section C.9 - Performance Testing.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.6 Record Keeping Requirements [326 IAC 2-7-5] [326 IAC 2-7-19]

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- (a) Pursuant to PSD Permits CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001, the Permittee shall maintain records of the natural gas and propane combusted in the Reheat

Furnace (RF) (ID# 2) each month and make the records available upon request to IDEM, OAQ, and the US EPA.

- (b) All records shall be maintained in accordance with Condition C.19 - General Record Keeping Requirements of this permit.

SECTION D.4

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

Ladle Vacuum Degasser (LVD) and LVD Boiler - - Stack 40

One (1) ladle vacuum degasser (LVD) (ID# 40) with a nominal capacity of 300 tons per hour of steel and one (1) boiler to power the LVD. The LVD Boiler (ID# 41) has a nominal heat input capacity of 41.8 MMBtu/hr, and uses natural gas as the primary fuel, with propane as an emergency back up fuel.

Gases from the LVD are directed to the boiler for combustion in the boiler. Emissions from the boiler exhausts through a stack identified as Stack 40.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 PM/PM₁₀ Limitations [326 IAC 2-2]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the total PM/PM₁₀ (including both filterable and condensable) emissions from the LVD Boiler (ID# 41) shall not exceed 0.0076 pound per MMBtu of heat input and 0.318 pound per hour.

D.4.2 NO_x Limitations [326 IAC 2-2]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the NO_x emissions from the LVD Boiler (ID# 41) shall not exceed 0.04 pound per million Btu of heat input and 1.67 pounds per hour.

D.4.3 CO Limitations PSD BACT [326 IAC 2-2]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the CO emissions from the LVD Boiler (ID# 41) shall not exceed 0.084 pound per MMBtu of heat input and 3.51 pounds per hour.

D.4.4 VOC Limitations PSD BACT [326 IAC 2-2]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the VOC emissions from the LVD Boiler (ID# 41) shall not exceed 0.0026 pound per MMBtu of heat input and 0.11 pound per hour.

D.4.5 SO₂ Limitations PSD BACT [326 IAC 2-2]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the SO₂ emissions from the LVD Boiler (ID# 41) shall not exceed 0.0006 pound per MMBtu of heat input and 0.025 pound per hour.

D.4.6 Operating Parameters [326 IAC 2-2]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-2 (PSD), the following conditions shall apply:

- (a) Only natural gas or propane fuels shall be used in the LVD Boiler (ID# 41).
- (b) The amount of natural gas used in the LVD Boiler (ID# 41) shall not exceed 209 million cubic feet per 12-consecutive month period, with compliance determined at the end of each month.
- (c) The amount of propane used in the LVD Boiler (ID# 41) shall not exceed 222 kilogallons per 12 consecutive month period with compliance determined at the end of each month.

- (d) Combustion emissions shall be controlled through the use of good combustion practices.

D.4.7 Preventive Maintenance Plan (PMP) [316 IAC 1-6-3] [326 IAC 2-7-5(13)]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 1-6-3 a Preventive Maintenance Plan (PMP), in accordance with Section B.10 - Preventive Maintenance Plan (PMP), of this permit, is required for the LVD Boiler (ID# 41).

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.4.8 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Pursuant to PSD Permit 183-15170-00030, issued May 31, 2002 and 326 IAC 2-1.1-11, the Permittee shall perform NO_x and CO testing on the LVD Boiler (ID# 41), at least once every five (5) years from the date of the last valid compliance demonstration, using methods as approved by the Commissioner.

Testing shall be performed in compliance with Section C.9- Performance Testing.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.9 Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19] [40 CFR 60, Subpart Dc]

- (a) The Permittee shall maintain records required under 40 CFR 60, Subpart Dc, at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 40 CFR 60, Subpart Dc, the Permittee shall maintain records of the amount of each type of fuel combusted in the LVD Boiler (ID# 41) each day.
- (c) Pursuant to PSD Permit SSM183-15170-00030 and to document compliance with Condition D.4.6 - Operating Parameters, the Permittee shall keep records of monthly fuel used by LVD Boiler (ID# 41), including the types of fuel and amount used.
- (d) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (e) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements of this permit.

D.4.10 Reporting Requirements [326 IAC 2-1.1-11]

Pursuant to PSD Permit SSM183-15170-00030, issued May 31, 2002 and 326 IAC 2-1.1-11 and to document compliance with Condition D.4.6 - Operating Parameters, a quarterly summary of the following:

- (a) the amount of natural gas used in the LVD boiler, and
- (b) the amount of propane used in the LVD boiler

shall be submitted to the address listed in Section C.20 - General Reporting Requirements, of this permit, using the reporting form (Natural Gas and Propane Usage Quarterly Report) located at the end of this permit, or its equivalent, within thirty (30) calendar days following the end of each calendar quarter.

The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) One (1) EAF dust storage silo (ID# 4), equipped with a bin vent filter for particulate control.
- (b) Eight (8) raw material storage silos (ID#s 5 through 12) and the associated raw material receiving station.

Each silo is equipped with a bin vent filter for particulate control.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 Particulate Matter (PM/PM₁₀) - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the filterable PM/PM₁₀ emissions from each of the nine (9) storage silos shall not exceed 0.01 grains per dry standard cubic feet.

D.5.2 Visible Emission Limitation - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the visible emissions from each of the nine (9) storage silos shall not exceed three percent (3%) opacity.
- (b) Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the visible emissions from the EAFs dust handling system and the raw material receiving station shall not exceed three percent (3%) opacity or greater based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).

D.5.3 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A (General Provisions), which are incorporated by reference in 326 IAC 12-1, apply to the EAF Dust Handling System except when otherwise specified in 40 CFR Part 60, Subpart AAa.

D.5.4 Visible Emission Limitations [40 CFR Part 60, Subpart AAa]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 40 CFR 60.272a(a), the Permittee shall not cause to discharge into the atmosphere from the EAF Dust Handling System any gases that exhibit ten percent (10%) opacity or greater.

D.5.5 Preventive Maintenance Plan (PMP) [326 IAC 1-6-3] [326 IAC 2-7-5(13)]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 326 IAC 1-6-3, a Preventive Maintenance Plan (PMP), in accordance with Condition B.10 - Preventive Maintenance Plan (PMP), of this permit, is required for the bin vent filters.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.5.6 Bin Vent Operation [326 IAC 2-2]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 Prevention of

Significant Deterioration (PSD), the bin vent filters shall be in operation and control emissions at all times when the storage silos are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.5.7 Visible Emissions Notations [326 IAC 2-1.1-11]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-1.1-11:

- (a) Weekly visible emission notations of the nine (9) storage silos exhaust vents and the raw material receiving station shall be performed during normal daylight operations when loading or unloading material. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, when the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C-.16 Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C-.16 Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.5.8 Broken or Failed Bin Vent Filter Detection [326 IAC 2-1.1-11]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-1.1-11:

In the event that filter failure has been observed, for single compartment filters, failed units and the associated process will be shut down as soon as possible until the failed units have been repaired or replaced.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.9 Record Keeping Requirements [326 IAC 2-7-5] [326 IAC 2-7-19]

-
- (a) Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and to document compliance with Condition D.5.2 - Visible Emission Limitation PSD BACT, the Permittee shall maintain records of the following and make the records available upon request to IDEM, OAQ, and the US EPA:
 - (i) Weekly visible emission notations of the bin vent exhaust and raw material receiving station.
 - (ii) Documentation of all response steps implemented for every event that visible emissions were noted to be "abnormal".

- (b) All records shall be maintained in accordance with Condition C.19 - General Record Keeping Requirements of this permit.

SECTION D.6 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

A slag handling and processing area (ID# 14), operated by an independent contractor, with a nominal rated capacity of 250 tons per hour.

This processing area consists of slag pot dumping, deskulling, slag cooling, digging of slag pits by a front-end loader, loading of grizzly feeder by a front-end loader, crushing, screening, conveyor transfer points, loading of materials into piles, storage piles, load out of materials from piles, and vehicle movement around piles.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.1 Annual Slag Production Limitation [326 IAC 2-1.1-5] [326 IAC 2-2]

Pursuant to PSD SSM 183-23905-00030, 326 IAC 2-1.1-5 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall not process more than 438,000 tons of slag per 12-consecutive month period, with compliance determined at the end of each month.

D.6.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), the combined filterable particulate emissions from the crushing, screening, conveyor transfer points, continuous stacking operations shall not exceed 60.96 pounds per hour.

This limit is based on the nominal process weight rate of 250 tons per hour.

The pound per hour limitation was calculated using the following equation:

$$E = 55.0P^{0.11-40} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour.}$$

The above equation shall be used for extrapolation of the data for process weight rates in excess of sixty thousand (60,000) pounds per hour.

D.6.3 Visible Emission Limitations - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the fugitive dust emissions from the various slag handling and processing operations shall be controlled in accordance with the Fugitive Dust Control Plan (FDCCP) (included in Section E.1 of this permit) such that the following visible emission limitations are not exceeded:

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity) (six (6) minute average)
Transferring of skull slag to slag pot	10 %
Dumping of liquid slag from slag pot to slag pit and cooling	3 %
Transferring of skull slag from slag pot to skull pit	5 %
Digging skull slag pits	5 %
Digging slag pits	3 %
Stockpiling of slag adjacent to the grizzly feeder	3 %
Wind erosion of stockpiles	3 %
Crushing	3 %
Screening	3 %

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity) (six (6) minute average)
Conveyor transfer points	3 %
Continuous stacking of processed slag to stockpiles	3 %
Loadout of processed slag from stockpiles to haul trucks for shipment	3 %
Inplant hauling of slag pots (filled) and processed slag	3 %

D.6.4 Preventive Maintenance Plan (PMP) [326 IAC 1-6-3] [326 IAC 2-7-5(13)]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001 and 326 IAC 1-6-3, a Preventive Maintenance Plan (PMP), in accordance with Condition B.10 - Preventive Maintenance Plan (PMP), of this permit, is required for the slag handling and processing operations associated control devices.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.6.5 Testing Requirements [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, the Permittee shall perform a compliance test for opacity on the above-mentioned slag handling and processing operations, utilizing 40 CFR Part 60, Appendix A, Method 9, or other methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

Testing shall be conducted in accordance with Section C.9 - Performance Testing.

Compliance Monitoring

D.6.6 Visible Emissions Notations

- (a) Visible emission notations of the slag handling processes shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, at least eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.6.7 Record Keeping Requirements [326 IAC 2-7-19]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, the Permittee shall maintain records of the following:

- (a) To document compliance with Condition D.6.1 - Annual Slag Production Limitation, the Permittee shall maintain records of the amount of slag processed.
- (b) To document compliance with Condition D.6.6, the Permittee shall maintain a daily record of the visible emission notations required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).
- (c) All records shall be maintained in accordance with Condition C.20 - General Record Keeping Requirements of this permit.

D.6.8 Reporting Requirements [326 IAC 2-1.1-11]

Pursuant to SSM183-18426-00030, issued, November 21, 2005 and to document compliance with Condition D.6.1 - Annual Slag Production Limitation, the Permittee shall submit a quarterly summary of the amount of slag processed, using the reporting form (Slag Production Report) located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported and in accordance with Section C.20 - General Reporting Requirements of this permit.

The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.7

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

Transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.7.1 Fugitive Dust Emission Limitations - Best Available Control Technology [326 IAC 2-2]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the fugitive dust emissions from transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles shall be controlled in accordance with the Fugitive Dust Control Plan (FDCP) (Section E.1) such that the following limitations are not exceeded:

Instantaneous opacity from paved roadways and parking lots shall not exceed ten percent (10%). The average instantaneous opacity shall be the average of twelve (12) instantaneous opacity readings, taken for four (4) vehicle passes, consisting of three (3) opacity readings for each vehicle pass.

The three (3) opacity readings for each vehicle pass shall be taken as follows:

- (a) The first will be taken at the time of emission generation.
- (b) The second will be taken five (5) seconds later.
- (c) The third will be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken at the point of maximum opacity.

The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.

Each reading shall be taken approximately four (4) feet above the surface of the paved roadway.

D.7.2 Visible Emission Limitations - Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD Permits CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the visible emissions from unpaved roadways and unpaved areas around slag storage piles and steel scrap piles shall not exceed an average instantaneous opacity of ten percent (10%).

The average instantaneous opacity shall be the average of twelve (12) instantaneous opacity readings, taken for four (4) vehicle passes, consisting of three (3) opacity readings for each vehicle pass.

The three (3) opacity readings for each vehicle pass shall be taken as follows:

- (a) The first will be taken at the time of emission generation.
- (b) The second will be taken five (5) seconds later.
- (c) The third will be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken at the point of maximum opacity.

The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.

Each reading shall be taken approximately four (4) feet above the surface of the unpaved roadway.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF AIR QUALITY

COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Steel Dynamics, Inc. - Structural and Rail Division
Source Address: 2601 County Road 700 East, Columbia City, IN 46725
Mailing Address: 2601 County Road 700 East, Columbia City, IN 46725
Part 70 Permit No.: T183-17160-00030
Facility: Tundish preheaters ID# 3p, 3n, 3h and 3i
Parameter: Fuel consumption
Limit: The natural gas combusted by tundish preheaters ID# 3p, 3n, 3h and 3i shall be less than 241 million standard cubic feet (MMSCF) per twelve consecutive month period with compliance determined at the end of each month.

QUARTER :

YEAR:

Month	Natural gas consumption (MMSCF)	Natural gas consumption (MMSCF)	Natural gas consumption (MMSCF)
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document for a Prevention of Significant Deterioration (PSD) Part 70 Significant Source Modification and Significant Permit Modification

Source Background and Description

Source Name:	Steel Dynamics, Inc. – Structural and Rail Division
Source Location:	2061 County Road 700 East, Columbia City, IN 46725
County:	Whitley
SIC Code:	3312
Operation Permit No.:	T183-17160-00030
Operation Permit Issuance Date:	July 3, 2007
Significant Source Modification No.:	183-23905-00030
Significant Permit Modification No.:	183-24522-00030
Permit Reviewer:	ERG/BS

On December 22, 2007, the Office of Air Quality (OAQ) had a notice published in the Post and Mail of Columbia City, Indiana, stating that Steel Dynamics, Inc. ("SDI") had applied for a PSD Significant Source Modification and a Significant Permit Modification to a Part 70 Permit regarding a request to: increase the airflow of the baghouse controlling emissions from the EAFs, add a baghouse to control emissions from the LMS, increase the thermal output of the tundish and ladle operations, remove a BACT requirement to maintain a structure relating to slag dumping, and re-evaluate an existing NOx BACT for several natural gas-fired units. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not these permits should be issued as proposed.

On January 20, 2008, several members of the public (Daniel Trimmer, Sandra Trimmer, Charles Acheson and Ronald Noyer) submitted comments on the proposed Significant Source Modification and Significant Permit Modification. The following is description of the comments and IDEM responses to the comments. Added text is shown as bold and deleted text is shown as strikeout. When conditions are added or deleted, the other conditions are renumbered accordingly, and the Table of Contents modified to reflect these changes.

Comment A:

A letter found with the draft permit at South Whitley Library from IDEM to Bill Bougher at SDI dated December 20, 2007 states "The Office of Air Quality (OAQ) has submitted the draft permit package to the South Whitley Cleveland Township Public Library, 201 East Front Street, South Whitley, IN. As a reminder, you are obligated by 326-IAC 2-1.1-6 (c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process."

We asked at the library that is listed (South Whitley Cleveland Township Public Library) in the Notice of 30-Day Period for Public Comment included in the draft permit, both in person, and by telephone for the Permit Application for SDI. We were informed that no application was available at the library. We called Joanne Smiddie-Brush at IDEM OAQ Permits Administration Section on January 15, 2008, to ask for a copy of the application and an extension of the comment period to allow review of the document. Joanne called the next day to report that SDI had placed a Permit Application in the Peabody Library, Columbia City, IN., and not at the South Whitley library branch.

Joanne also reported that the Deputy Branch Chief Matthew Stuckey was *not inclined to give an extension* because most people comment on the draft permit rather than the permit application. Joanne said she would send a late copy to Sandy Trimmer. As of Jan 18, we still have not received the application for review in preparation of my comments on the proposed permit. Joanne also said that she would send a copy of the Permit Application to the South Whitley library branch, and a copy of the Significant Source Modification No. 183-23905-00030, and the Significant Permit Modification No. 183-24522-00030 to the Peabody library.

The above letter to Bill Bougher at SDI was very specific that SDI was "obligated" to place a copy of the complete permit application at the South Whitley Library branch and did not offer him the choice of selecting another library. This obligation was for SDI to place the application at the South Whitley library 10 days after they submitted the application to IDEM. This application was to have [been] placed at the South Whitley library months ago.

We do not understand why IDEM can not extend the comment period as a result of this confusion in communication. The public should be able to expect all documentation to be available at the library cited in the IDEM letter and not have to search for other possible libraries where the materials could be hidden.

Because of this failure to follow Indiana law, we respectfully again request that IDEM reopen the comment period so that the public has the opportunity to review the complete application for this significant permit modification.

Response to Comment A:

A copy of the permit application was placed at the Peabody Public Library. While the public notice referred to the South Whitley library, the Peabody library is closer to the source and closer to the commenters' addresses. According to driving directions available on the internet, the Peabody library is approximately 6 miles from SDI, while the South Whitley library is almost 19 miles away. As stated by the commenters, it appears that the commenters were notified that they could review the permit application at the nearby Peabody library.

The applicable regulation, 326 IAC 2-1.1-6(c), requires SDI to place a copy of the permit application in a library in the county where the source is located and notify IDEM of the library's location. By placing a copy of the application at the nearby Peabody library and noting in the application the library's name, SDI fulfilled that requirement.

As a result, IDEM appreciates the public's interest in the permit process and believes that the commenters had the information they needed to fully participate in the permit review process.

No changes were made to the permit as a result of this comment.

Comment B:

D.1.21(a)(1) (Visible Emission Observations and Continuous Opacity Monitoring) states, "The Permittee shall calibrate, certify, operate, and maintain a continuous monitoring system (COMS) to measure opacity from the EAF Baghouse stack (Stack 1) in accordance with 326 IAC 3-5-2 and 3-5-3."

This permit requires COMS on stack 1 but does not specify COMS on the new stack 43. I believe stack 43 also must have this requirement for COMS because the Federal Rule Applicability Determination (d) states, "This source is subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). In order for this rule to apply, a pollutant-specific-emissions-unit at a source that requires a Part 70 or Part 71 permit must meet three criteria for a given pollutant: ...", And under the State Rule Applicability Determination - Ladle Metallurgical Station (LMS) and Continuous Casters (CC), it states that "SDI cannot accurately predict the emissions split to the stacks ...". Also under State Rule Applicability Determination - Tundish and Ladle Operations, it states that " ... the addition or modification of tundish preheaters ID# 3p, 3h, 3i, 3n" ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x will cause or contribute to a significant PM/PM 10 emissions increase ...".

Again, since "SDI cannot accurately predict the emissions split to the stacks ...", SDI must be required to install COMS on stack 43.

Response to Comment B:

The EAFs (controlled by the EAFs Baghouse) exhaust to stack 1 and, following this modification, the LMS and CC will be controlled by the LMS Baghouse and will exhaust to stack 43. A COMS is required for stack 1 because the EAFs are subject to the requirements of 326 IAC 3-5 (Continuous Monitoring of Emissions) and 40 CFR Part 60, Subpart AAa. Pursuant to 326 IAC 3-5-1(b), the LMS and CC are not subject to the requirements of 326 IAC 3-5.

Condition D.1.25 requires SDI to conduct daily visible emission notations of the stack exhaust from stack 43. Condition D.1.26 requires SDI to monitor the pressure drop across the LMS Baghouse at least once per day. IDEM, OAQ believes that these monitoring requirements are sufficient to demonstrate compliance with the established particulate limits and are consistent with requirements in issued permits for similar emission units.

The statement: "SDI cannot accurately predict the emissions split to the stacks" pertains to the emissions from the new and modified natural gas fired units and not from the LMS and CC. These units exhaust to stack 1 and/or stack 43. The aggregate PM/PM10 potential to emit of the respective natural gas fired units is less than five tons per year; less than the insignificant thresholds for units at a Part 70 source. As a result, a COMS is not needed because of the PM/PM10 contribution of these units.

No changes were made to the permit as a result of this comment.

Comment C:

D.1.22(a) (Bag Leak Detection System (BLDS)) states, "The Permittee shall operate continuous bag leak detection systems (BLDS) for the EAFs Baghouse."

SDI must install a BLDS on the LMS Baghouse, as well. In the TSD, the Federal Rule Applicability Determination section (d) states "This source is subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). In order for this rule to apply, a pollutant-specific-emissions-unit at a source that requires a Part 70 or Part 71 permit must meet three criteria for a given pollutant: ...".

And in the TSD under the State Rule Applicability Determination - Ladle Metallurgical Station (LMS) and Continuous Casters (CC), it states that "SDI cannot accurately predict the emissions split to the stacks ...". Also under State Rule Applicability Determination - Tundish and Ladle Operations, it states that " ... the addition or modification of tundish preheaters ID# 3p, 3h, 3i, 3n" ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x will cause or contribute to a significant PM/PM 1 a emissions increase ...".

Again, since "SDI cannot accurately predict the emissions split to the stacks ...", SDI must be required to install a Bag Leak Detection System on the LMS Baghouse.

Response to Comment C:

As shown in Appendix A of the Technical Support Document (TSD), the controlled PM/PM10 potential to emit of the EAF Baghouse is approximately five times greater than that of the LMS Baghouse. Due to the magnitude of the potential particulate emissions from the EAF Baghouse, and the applicability of 40 CFR Part 60, Subpart AAa, the IDEM, OAQ requires the use of a bag leak detection system (BLDS) for the EAF Baghouse.

The permit includes a number of particulate-related monitoring provisions applicable to Stack 43, including PM/PM10 and opacity testing (Condition D.1.19(c)), visible emission notations (Condition D.1.25) and baghouse pressure drop monitoring (Condition D.1.26). Note that the requirements of Conditions D.1.25 and D.1.26 are not required for the EAFs Baghouse. By comparison, the IDEM, OAQ believes that the use of a BLDS is not necessary for the LMS Baghouse. IDEM believes the existing monitoring provisions for the LMS Baghouse are sufficient to demonstrate compliance.

No changes were made to the permit as a result of this comment.

Comment D:

In the TSD under the Description of Proposed Modification section - (1) "The purpose of this modification is to reduce the amount of criteria pollutant fugitives in the meltshop and improve the air quality of the meltshop."

What was the cause of the failure to achieve the reduction of dust (pollutants) in the Meltshop? Were there more pollutants than SDI had expected from the steel making process? Was the Baghouse in operation at all times to minimize the dust? Was the negative Pressure in the building compromised? Please explain the reason this occurred.

Response to Comment D:

As stated in the Description of Proposed Modification section of the TSD, "The purpose of this modification is to reduce of the amount of criteria pollutant fugitives in the meltshop and improve the air quality of the meltshop." In conversations that followed the submission of the permit application, SDI informed the IDEM, OAQ that a reduction of particulates within the meltshop was desired to provide operational flexibility while protecting employees and equipment. The IDEM, OAQ is not aware of any kind of failure that served as an impetus for this modification.

No changes were made to the permit as a result of this comment.

Comment E:

In the TSD under the Actual Emissions section "The following table shows the actual emissions from the source. This information reflects the 2003 OAQ emission data."

The use of 2003 data is unacceptable. There have been multiple modifications to SDI's permit since this date, and the source has been 'out of compliance' on emissions in the past. (See the partial list of these violations at the end of these comments.) More recent data must be used.

Response to Comment E:

The Actual Emissions table in the TSD is provided for reference only and was not used in any determination or evaluation completed for this permitting action.

No changes were made to the permit as a result of this comment.

Comment F:

Appendix A: Emission Calculations - (1) states, "Baseline actual emissions are equal to the potential to emit (after control) of the existing baghouse configuration because the source did not provide actual emission data."

This source has operated for many years and SDI should be able to provide actual emission data on the EAF Baghouse. IDEM must request actual data from the source.

Response to Comment F:

As stated in Appendix A, the emissions increase of a proposed modification is calculated as the difference between the projected actual emissions and the baseline actual emissions. The evaluation of the emissions increase is used to determine if the modification is subject to the requirements of 326 IAC 2-2 for a given pollutant. An emission unit's controlled potential to emit is greater than its baseline actual emissions. Had the calculated emissions increase (using the potential to emit) indicated that the modification was not subject to 326 IAC 2-2, the IDEM, OAQ would have required SDI to submit actual emissions information. However, since the more-conservative calculation indicated that the modification was subject to PSD and SDI chose not to provide baseline actual emissions, the IDEM, OAQ believes there is no reason to use actual emissions to determine PSD applicability.

No changes were made to the permit as a result of this comment.

Comment G:

D.1.22 - Bag Leak Detection System - (a) The permittee shall operate continuous bag leak detection systems (BLDS) for the EAF's baghouse.

The July 2007 Part 70 Permit issued listed 9 requirements for the BLDS. Missing, are (8) "Each sensor should be inspected at least once per month to remove any build-up of material that may collect on the probe or insulator", and (9) "Monthly QA checks shall be performed to ensure the monitor is operating properly. If the results of the response test or electronics drift check are not favorable, the cause shall be investigated and any malfunctions corrected." In the Addendum to the Technical Support Document for a Part 70 Operating Permit (issued July 3, 2007)- (In that permit, the number was D.1.24 Bag Leak Detection System) - Response 31 states that IDEM agreed with Comment 31 and added back into the July 2007 permit, the requirements that SDI must inspect each sensor at least once each month and SDI must make monthly QA checks.

Response to Comment G:

The omission of the respective requirements was an error. The following changes were made to the permit as a result of this comment.

D.1.22 Bag Leak Detection System (BLDS) [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005:

- (a) The Permittee shall operate continuous bag leak detection systems (BLDS) for the EAFs Baghouse. The bag leak detection systems (BLDS) shall meet the following requirements:

...

- (6) The bag detector must be installed downstream of the baghouses.
- (7) Each sensor should be inspected at least once a month to remove any build-up of material that may collect on the probe or insulator.**
- (8) Monthly QA checks shall be performed to ensure that the monitor is operating properly. If the results of the response test of electronics drift check are not favorable, the cause shall be investigated and any malfunctions corrected.**

Comment H:

D.1.22 - Bag Leak Detection System - (a) The permittee shall operate continuous bag leak detection systems (BLDS) for the EAF's baghouse.

In the Addendum to the Technical Support Document for a Part 70 Operating Permit (issued July 3, 2007), Response 31 states that IDEM agreed with Comment 31. (5) "The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time."

A requirement for the initial adjustment of the Bag Leak Detection System for Baghouse 43 must be included in this revision of the Part 70 Operating Permit.

Response to Comment H:

The respective requirement refers to the initial adjustment of the bag leak detection system. The requirement is a one-time requirement that SDI has completed. As a result, it was removed from the Part 70 permit. Ongoing BLDS adjustments are covered by Condition D.1.22(a)(4) and (5).

No changes were made to the permit as a result of this comment.

Comment I:

In the TSD under the Description of Proposed Modification section - (1) "Modify the existing EAFs Baghouse by increasing its airflow rating from 933,333 acfm to 1,800,000 acfm."

What changes are being made in the filtration media that allows the airflow rate to double, and effectively filter the emissions from the EAFs, as well as exhaust the Meltshop? Does the baghouse have sufficient capacity to effectively filter such a large air flow?

Response to Comment I:

According to SDI, the baghouse will undergo a number of physical changes to accommodate the additional airflow, including fan modifications and directing air at significantly more filter bags in additional compartments. The increased filter surface area will accommodate the extra airflow. There is no requirement to use a particular kind of bag and SDI indicates that it does not plan to change the type of bags that it is currently using.

No changes were made to the permit as a result of this comment.

Comment J:

On page 1 of 4 of the TSD Appendix A, the current Baghouse Stack 1 Temp., is 200 degrees F. The New Stack Temp. is to be 250 degrees F. On page 2 of 4, it states that Baghouse Stack 43

Temp. will be 275 degrees F. In the Stack Summary, the Temperature for both Stack 1 and 43 are listed at 275 degrees F.

Which temperature (250 or 275 degrees F) is correct for each stack?

Are the bags in the Baghouse designed to be effective at this higher temperature? Will the bags need to be replaced more often because of the higher temperature? Will SDI be required to monitor these bags more carefully?

Response to Comment J:

Both baghouses may experience inlet temperatures of up to 275°F and this temperature will vary depending on the stage of the batch steelmaking process and the outside temperature. Stack temperature does not have a significant correlation with emission quantities, but it is used as an input for modeling purposes. It is SDI's responsibility to employ bags that are compatible with their use.

No changes were made to the permit as a result of this comment.

Comment K:

Appendix B: Step 4 - Evaluate Control Options - "SDI also proposes a PM/PM10 BACT emission rate of 0.0076 lb/MMBtu. This is equivalent to a 2005 PM/PM10 BACT determination for identical units located at the source."

This cannot be equivalent to a 2005 PM/PM10 BACT determination, since the source is increasing the MMBtu's consumed. The PM/PM10 is increasing by 66%. Currently, consumption is 10 MMBtu x 0.0076 lb/MMBtu = 0.076 lb/hr. Proposed consumption is 15 MMBtu x 0.0076 lb/MMBtu = 0.114 lb/hr.

Has this drastic increase in lb/hr of particulate emissions been considered in the control options selected in this BACT determination?

Response to Comment K:

Pursuant to PSD SSM 183-18426-00030, issued November 21, 2005, PM10 BACT was established as 0.0076 pounds per MMBtu for several natural gas-fired units at the source. The PM/PM10 BACT analysis included in Appendix B for several identical or similar units establishes the same limit. Therefore, the limits are equivalent.

As shown in Appendix A, the proposed heat input capacity increase to the tundish and ladle operations results in a potential emissions increase of 0.9 and 3.59 tons per year of PM and PM10, respectively.

All the particulate emissions increases associated with this modification were considered when completing the BACT evaluation and the respective air quality modeling.

No changes were made to the permit as a result of this comment.

Comment L:

Description of Proposed Modification - (4) "Remove the BACT requirement to maintain a partially enclosed, roof structure to reduce particulate matter emissions during slag dumping." APPENDIX B.4 states, "SDI has considerable difficulty maintaining the roofed structure. The extreme heat from slag dumping warps the steel canopy and continually weakens the structure to the point that it has collapsed several times and required repairs. As a result, SDI proposes to remove the BACT requirement to maintain the partial enclosure. Note that it is not clear whether the enclosure effectively controls PM/PM10 emissions; however, it is apparent that the enclosure

does temporarily increase opacity close to the ground during slag dumping by hindering the dissipation of the emissions."

SDI has not provided Technical Support for not implementing an achievable, existing BACT requirement already in operation at a steel mill. According to Table 31 of Appendix A of PSD/SSM 183-18426-00030, Nucor Steel's operation of the EAF Slag Pit and Digout Operation are contained within a building.

Why was this previous BACT comparison not included in the BACT determination for this permit?

Since Nucor is already effectively suppressing PM/PM10 emissions with a totally enclosed slag dumping building, IDEM must insist that SDI implement this technology which has already been established as BACT.

Response to Comment L:

Commenters indicate that a partial enclosure for the slag dump station is achievable based on a requirement of another steel mill permit. The IDEM, OAQ believes that the commenters confuse EAF slag digging (which occurs under an EAF inside some meltshops that do not pour directly into slag pots) with slag dumping and digging (which occurs outside in the slag processing areas at both mills). The provision mentioned by commenters deals with slag exiting the EAFs that is dumped on the ground inside the meltshop and then dug up and put into slag pots for transport to the outside slag processing area. SDI pours slag from its EAFs directly into slag pots, thus avoiding the extra step of digging up slag inside the meltshop. Use of a partial enclosure for slag dump station activities as employed at SDI's mill is unusual. To IDEM's knowledge, the partial enclosure at SDI's Columbia City facility was the first of its kind. In practice, it has not proven effective at controlling emissions, temporarily exacerbates opacity at ground level, and poses safety concerns given the very hot material that is dumped under the enclosure. Rather than keep the enclosure and increase SDI's opacity limits for certain slag processing operations, the IDEM, OAQ has chosen to maintain the existing opacity limits and remove the partial enclosure as a permit requirement.

No changes were made to the permit as a result of this comment.

Comment M:

D.2.7 Tundish Dryer - PSD Best Available Control Technology (f):

The number of 'pounds per hour' is missing. In the Addendum to the Technical Support Document for a Part 70 Operating Permit T183-17160-00030 (issued July 3, 2007) - Response 12, IDEM agreed, and added back into the Permit, 'pounds per hour'. These requirements were not included in this Permit Modification 183-24522-00030.

The 'pounds per hour' must be included in this Permit Modification as IDEM has acknowledged in their response to our comments on the previous Part 70 Operation Permit for this facility.

Response to Comment M:

See Response to Comment N.

Comment N:

Conditions D.2.5 (Tundish Nozzle Preheater), D.2.6 (Tundish Preheater) and D.2.7 (Tundish Dryer):

On all of the emissions listed, the 'pounds per hour' have been eliminated.

Pounds per hour limits should be restored to ensure that the emissions limits will not be exceeded.

Response to Comment N:

A pound per hour limit is not necessary when units, like the tundish nozzle preheater, tundish preheater and tundish dryer, have very low emissions and have physical limitations on heat input. As a practical matter, these units are open flame units that cannot be independently stack tested to determine compliance with a pound per hour limit. As a result, the IDEM, OAQ has decided to remove all pound per hour limits on the natural gas-fired units in Section D.2. The established lb per MMBtu limits will remain as the enforceable limitations.

The following changes were made to the permit as a result of this comment:

D.2.4 Ladle Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

...

- (d) The carbon monoxide (CO) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.084 pounds per MMBtu ~~and 0.84 pounds of CO per hour~~, based on a three (3) hour block average.
- (e) The volatile organic compound (VOC) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0055 pounds per MMBtu ~~and 0.055 pounds of VOC per hour~~, based on a three (3) hour block average.
- (f) The sulfur dioxide (SO₂) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0006 pounds per MMBtu ~~and 0.006 pounds of SO₂ per hour~~ based on a three (3) hour block average.
- (g) The PM (filterable) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0019 pounds per MMBtu ~~and 0.019 pounds of filterable PM per hour~~, based on a three (3) hour block average.
- (h) The PM₁₀ (filterable and condensable) emissions from the second ladle dryer (ID# 3l) shall not exceed 0.0076 pounds per MMBtu ~~and 0.076 pound of filterable and condensable PM₁₀ per hour~~, based on a three (3) hour block average.
- (i) Good combustion practices shall be observed.

D.2.4 D.2.5 Tundish Nozzle Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

...

- (c) The NO_x emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.1 pounds per MMBtu ~~and 0.5 pounds per hour~~, based on a 3-hour block average.
- (d) The CO emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.084 pounds per MMBtu ~~and 0.84 pounds per hour~~, based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.0055 pounds per MMBtu ~~and 0.055 pounds per hour~~, based on a 3-hour block average.

- (f) The SO₂ emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.0006 pounds per MMBtu ~~and 0.006 pounds per hour~~, based on a 3-hour block average.
- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed 0.0076 pounds per MMBtu ~~and 0.076 pounds per hour~~, based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

D.2.7 Tundish Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

...

- (d) The CO emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.084 pounds per million Btu ~~and 0.42 pounds per hour~~, based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.0055 pounds per MMBtu ~~and 0.028 pounds per hour~~, based on a 3-hour block average.
- (f) The SO₂ emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.0006 pounds per MMBtu ~~and pounds per hour~~, based on a 3-hour block average.
- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Dryer (ID# 3o) shall not exceed 0.0076 pounds per MMBtu ~~and 0.038 pounds per hour~~, based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

Comment O:

Conditions D.1.9(a) (VOC – PSD BACT), D.1.10(a)(1)(Lead – PSD BACT), D.1.11(a)(1) (Mercury – PSD BACT) and D.1.12(a)(1) (Fluorides – PSD BACT).

In Response 15 of the Addendum to the Technical Support Document for SDI's Part 70 Operating Permit (issued July 3, 2007), IDEM agrees that the word 'controlled' is to be replaced by the word 'minimized'. In the current Modification, the word controlled is again used in place of minimized.

The word 'minimized' must be reinstated in the BACT determination as IDEM has acknowledged in their response to our comments on the previous Part 70 Operation Permit for this facility.

Response to Comment O:

The following changes were made to the permit as a result of this comment:

D.1.9 Volatile Organic Compounds (VOC) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the VOC emissions from EAF-1a and EAF-1b shall be ~~controlled~~ **minimized** in accordance with the Scrap Management Program (SMP) (Section E.2) and shall be controlled by thermal oxidation and by maintaining a negative pressure at the direct-shell evacuation control (DEC) system air gap.

...

D.1.10 Lead - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the lead emissions from EAF-1a and EAF-1b shall be:
- (1) ~~controlled~~ **minimized** in accordance with the Scrap Management Program (SMP) (Section E.2), and
- ...

D.1.11 Mercury - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the mercury emissions from EAF-1a and EAF-1b shall be:
- (1) ~~controlled~~ **minimized** in accordance with the Scrap Management Program (SMP) (Section E.2), and
- ...

D.1.12 Fluorides- PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the fluoride emissions from EAF-1a and EAF-1b shall be:
- (1) ~~controlled~~ **minimized** by using the granular type of Fluorspar, instead of the powdered type and
- ...

Comment P:

E.1.8 (Monitoring and Recording Keeping) states "Records of the vacuum sweeping, wet sweeping, or water flushing and spill control activities, and dust suppressant application frequency and amount shall be kept."

Response 27 in the Addendum to the Technical Support Document for SDI's Part 70 Operating Permit (issued July 3, 2007), IDEM agreed with Comment 27, and added back into the permit the requirement 'Daily'.

In this Modification, this requirement was once again deleted. Daily Record Keeping must be included in this Modification.

Response to Comment P:

The following changes were made to the permit as a result of this comment:

E.1.8 Monitoring and Record Keeping

Daily Records of the vacuum sweeping, wet sweeping, or water flushing and spill control activities, and dust suppressant application frequency and amount shall be kept.

Comment Q:

In the TSD 'Enforcement Issues', of this modification, it states that "there are no pending enforcement actions".

We have found that IDEM made a mistake when they stated "there are no pending enforcement actions" in the Draft Part 70 Permit (T183-17160-00030) public review, which ended March 13, 2006.

Even though all of the known enforcement actions were resolved by the effective date (July 2007) of the final Part 70 Permit, a LONG LIST of violations were being investigated by IDEM during the public comment period.

Since the following enforcement actions were pending but not disclosed by IDEM at the time of the public review for the July 2007 Part 70 Permit for this facility, we request that IDEM review their records to be certain that additional enforcement actions are not pending at this time as their past disclosures have not always been accurate and timely.

If any enforcement actions are found to be actually pending at this time, we request that IDEM reopen the public comment period for this permit so that the public will have an opportunity to comment on their effect on the terms of this permit modification.

The following lists some of the specific enforcement actions that were pending, but not disclosed to the public, during the public comment period for the July 2007 Part 70 Permit for this facility:

NOTICE OF VIOLATION - Case No. 2004-14228-H (2)(a) states,
" ... Multiple refractory products are used in the facility's processes, thereby generating multiple refractory wastestreams. At the time of the inspection, Respondent was sending the refractory wastes from the melt shop directly to slag processing. The slag (including refractory wastes) was used as a road." And (h), ... " As noted during the record review, the Commissioner did not sign and approve Respondent's use of slag and refractory wastes as a road. The slag and refractory wastes were not capped by clay, asphalt or concrete."

NOTICE OF VIOLATION - Case No. 2004-14228-H (2)(a) states,
" ... Multiple refractory products are used in the facility's processes, thereby generating multiple refractory wastestreams. At the time of the inspection, Respondent was sending the refractory wastes from the melt shop directly to slag processing. The slag (including refractory wastes) was used as a road." And (h), ... "As noted during the record review, the Commissioner did not sign and approve Respondent's use of slag and refractory wastes as a road. The slag and refractory wastes were not capped by clay, asphalt, or concrete." In the Agreed Order, Findings of Fact, 6.a., it states, " ... At the time of the inspection, Respondent was sending the refractory wastes from the melt shop directly to slag processing and mixing it with the slag debris. The slag debris, including refractory wastes, was used on-site in several applications including road construction and product storage areas."

Refractory Wastes include Hazardous Materials. Were the sites of these roads and storage areas cleaned up? If not, the Hazardous Pollutants can seep into the soil, aquifer, and also would be in the air, from the dust of traffic on the roads.

NOTICE OF VIOLATION - Case No. 2004-14228-H Agreed Order, Finding of Facts, 6.h. states, "According to Respondent, any slag debris currently stockpiled on-site, including that which had refractory wastes added to it, has less than one percent of refractory."

With the amount of slag that SDI generates per year, this could be a significant amount. What was the total tonnage of slag that was contaminated with Refractory wastes? How was it disposed of?

NOTICE OF VIOLATION - Case No. 2003-12992- A (l)(A) states, "Pursuant to condition D.1.11 (b), the lead (Pb) content from the EAF baghouse dust shall not exceed five-tenths percent (0.5%) by weight. On April 15, 2003, an inspection was conducted to determine compliance with Pb content from the EAF baghouse. A review of the results indicated that the source averaged 2.6% Pb by weight, a violation of condition D.1.11(b)."

What measures are being taken to ensure Compliance with emission limits for Lead?

NOTICE OF VIOLATION - Case No. 2004-I5032-A (I)(A) states, "On May 12,2005, an inspection was conducted to determine compliance with Pb content from the EAF baghouse. A review of the results indicated that the source averaged 2.6% Pb by weight, a violation of condition D.1.11(b) "

What measures are being taken, to ensure Compliance with the emission limits for Lead?

NOTICE OF VIOLATION - Case No. 2005-15033-A, 1.A. states, "Pursuant to condition D.1.10, the Lead (Pb) emissions from the EAFs Baghouse stack shall not exceed 0.144 pounds per hour (lbs/hr). In April , 2005, the source conducted a stack test to determine compliance with emission limitations. A review of the results indicates that the source averaged 0.215 lbs/hr, a violation of condition D.1.10."

Since SDI was in violation in 2005, IDEM must require SDI perform stack tests at least once a year, to ensure compliance of the hazardous pollutant Lead.

NOTICE OF VIOLATION - Case No. 2005-I5472-A, 1.A. states, "Pursuant to condition D.1.11(b), the lead (Pb) content from the EAF baghouse dust shall not exceed five-tenths percent (0.5%) by weight. On June 15,2005 an inspection was conducted to determine compliance with Pb content from the EAF baghouse. A review of the results indicate that the source averaged 3.7% Pb by weight, a violation of condition D.1.11(b)."

The baghouse dust has been 'out of compliance' for Lead, several times between 2003 and 2005. With escalated Lead Dust by weight, from the baghouse, there is an indication that there would be more Lead emissions from the baghouse stack. SDI must ensure continuing compliance of Lead from the baghouse stack.

NOTICE OF VIOLATION - Case No. 2003-15028-A (A.), "On May 16, 2003, this source conducted an opacity test to demonstrate compliance for visible emission requirements. This source's visible emissions, from digging slag pits (emphasis added) was 10.62%, a violation of 326 IAC 22-3 and condition D.6.3 of PSD/SSM No. 18426."

If procedure was followed, control of emissions from this process should not be an issue.

NOTICE OF VIOLATION - Case No. 2004-I4228-H states, " ... At the time of the inspection, Respondent was sending the refractory wastes from the melt shop directly to slag processing and mixing it with the slag debris."

Could the Refractory Material be a factor in the failed Opacity limit? How long had SDI mixed the Refractory waste with the slag debris before the inspection?

NOTICE OF VIOLATION - Case No. 2004-14228-H Agreed Order Findings of Fact (6)(a) " ... At the time of the inspection, Respondent was sending the refractory wastes from the melt shop directly to slag processing and mixing it with the slag debris."

How much tonnage of the Refractory waste was mixed with the slag debris before inspection? And, please explain what steps are being taken so there will be no future violations.

NOTICE OF VIOLATION - Case No. 2004-14228-H Agreed Order Findings of Fact (6)(a) states, "Respondent submitted analytical results for three (3) refractory waste streams on July 12, 2005." Please report the test results to the public.

NOTICE OF VIOLATION - Case No. 2004-14228-H (2.)(d.) states, "As noted during the inspection, Respondent did not provide the required integrity assessment for the silo used to store electric arc furnace dust (K061)." (e) states, "As noted during the inspection, Respondent did not conduct the required inspections of the silo/baghouse. Baghouse dust (K061) was observed on the ground outside the silo/baghouse loading areas, indicating that inspections had not been conducted at the areas."

Daily inspections must be demanded by IDEM on all units that contain Hazardous Materials.

Response to Comment Q:

All of the referenced enforcement matters have been resolved and are not relevant to this particular air permitting action.

Case No. 2004-14228-H, which involved allegations regarding non-hazardous refractory materials, was resolved by Agreed Order dated May 30, 2006.

Case Nos. 2003-12992-A, 2004-15032-A, 2005-15033-A, and 2005-15472-A all related to lead content in EAF baghouse dust. The dust at issue was collected by the baghouse and properly disposed of at an out-of-state facility. SDI's lead emissions from the EAFs Baghouse stack during this same timeframe were well below the applicable limit. These matters were resolved in an Agreed Order dated May 16, 2007.

Case No. 2003-15028-A involved allegedly high opacity at the slag dump station. The underlying facts for this matter are included in Response to Comment 12 and support the IDEM, OAQ's BACT determination to remove the partial enclosure and maintain the existing opacity limits. This matter was resolved the Agreed Order dated May 16, 2007.

Additional information on these matters is available to the public through the IDEM, OAQ file room.

No changes were made to the permit as a result of these comments.

On January 21, 2008, SDI submitted comments on the proposed Significant Source Modification and Significant Permit Modification. The following is a description of the comments and IDEM responses to the comments. Added text is shown as bold and deleted text is shown as strikethrough. When conditions are added or deleted, the other conditions are renumbered accordingly, and the Table of Contents modified to reflect these changes.

Comment 1:

IDEM has not included a construction approval in the Significant Source Modification. Rather, the construction approval is included in a cover letter. SDI requests that IDEM revise the Significant Source Modification to include the appropriate construction authorization.

Response to Comment 1:

The aforementioned cover letter includes the construction provisions pursuant to 326 IAC 2-7-10.5. As a result, the IDEM, OAQ believes that the letter provides the applicant with sufficient construction authorization.

No changes were made to the permit as a result of this comment.

Comment 2:

SDI objects to the reissuance of unaffected sections of its Title V permit as part of the Significant Permit Modification. If IDEM reissues the entire Title V permit in the Significant Permit Modification, rather than just the revised sections as in the Significant Source Modification, then SDI will file an appeal to avoid any unintentional waiver of issues raised in the consolidated appeal for the Part 70 Operating Permit No. T183-17160-00030 (Cause No. 05-A-J-3636).

Response to Comment 2:

IDEM, OAQ disagrees with the concept that a permit modification constitutes a reissuance of unaffected permit conditions. The issuance of the modification set in the proper position within

the existing permit allows the public and other interested parties to view modified conditions in relation to other permitting requirements. This procedure allows for more accurate interpretation of modified permit conditions and provides a better context for interested parties.

No changes were made to the permit as a result of this comment.

Comment 3:

The compliance paragraph on page one of both permits should be revised to reflect the fact that not all permit terms are enforceable; noncompliance with only the enforceable provisions of the permit may be grounds for enforcement action.

Response to Comment 3:

IDEM, OAQ believes that the cover page sufficiently describes the subject matter contained therein and should not be edited as proposed.

No changes were made to the permit as a result of this comment.

Comment 4:

“Constructed in” or similar dates following each piece of equipment listed in Section A and the description boxes are unnecessary as the construction permits already provide a record of permitting for construction of equipment.

Further, in some cases these dates are inaccurate or misleading, especially where construction spanned over more than one year. If IDEM insists on such information being included, then SDI requests that IDEM reference the permit number authorizing the unit instead of a particular year of construction.

Response to Comment 4:

IDEM, OAQ includes construction dates for emission units because that information can be a necessary factor in determining rule applicability. The construction dates will remain in the permit. The IDEM, OAQ would be willing to correct any erroneous construction dates if SDI provides IDEM with the correct dates.

No changes were made to the permit as a result of this comment.

Comment 5:

SDI objects to the statements found throughout the draft permit which add duplicative requirements. By way of example and not limitation, statements in Section D conditions which provide that “All records shall be maintained in accordance with Condition C.19 – General Record Keeping Requirements of this permit” arguably add a requirement that entirely duplicates the obligation already contained in Condition C.19 to maintain records in accordance with that condition. SDI objects to any permit condition which requires that something shall be done “in accordance with” a previously-stated requirement in the Permit. SDI requests that these conditions be revised accordingly.

Response to Comment 5:

IDEM OAQ issues permits to all types of sources and facilities throughout the State of Indiana. Some facilities and their staff have a greater understanding and comprehension of permit requirements than others. As a result, the IDEM, OAQ believes that facilities benefit from limited reminders (i.e. redundancies) of Section C requirements.

While the inclusion of Condition C.19 may seem redundant, IDEM OAQ believes that it does not subject facilities to double jeopardy or require multiple submissions for the same permit obligation.

By way of comparison, a permit containing language saying that "Pursuant to" or "In accordance with" some rule or portion of the Indiana Administrative Code would also "arguably add a requirement that entirely duplicates the obligation." IDEM OAQ disagrees with this assessment.

No changes were made to the permit as a result of this comment.

Comment 6:

Condition A.1: General Information - To be consistent with IDEM's removal of Clean Unit status provisions throughout the permit, SDI requests that any reference to "Clean Units" under the Source Status be deleted as well.

Response to Comment 6:

The following changes were made as a result of these comments:

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary steel beam mini mill.

...

Source Location Status	Attainment for all criteria pollutants
Source Status:	1 of 28 Listed Source Categories
	Major source, under PSD Program
	Major source, under Part 70 Program
	Minor Source, CAA Section 112
	Clean Units

Comment 7:

Condition A.2: Emissions Units and Pollution Control Equipment Summary (and corresponding facility descriptions in D Sections) – SDI requests that any facility descriptions depicting construction and modification dates be deleted consistent with Comment #4 above.

Response to Comment 7:

See Response to Comment 4.

Comment 8:

Condition A.2(a): Emissions Units and Pollution Control Equipment Summary (and corresponding facility descriptions in D Sections) – SDI requests that the description in the first paragraph be revised as follows:

..., an overhead roof exhaust system consisting of a capture system ~~consisting of~~ **with** a segmented canopy hood, ...

Consistent with the draft Technical Support Document ("TSD") attached to these draft permits, SDI also requests that references to control of "lead" emissions be deleted from the last paragraph. (I didn't see this addressed?)

Response to Comment 8:

The facility descriptions in Sections A.2 and D.1 state that lead emissions are collected, not controlled, by the overhead roof exhaust system and DEC system. Those statements are accurate so changes were made to the permit as a result of this comment.

The following changes were made to clarify the unit description of the EAFs:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] 326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) Electric Arc Furnaces (EAFs) - - Stack 1
Two (2) single shell electric arc furnaces (EAFs), identified as EAF-1a and EAF-1b constructed in September 2002. These furnaces operate at a nominal combined rate of 300 tons of molten steel per hour and utilize a direct-shell evacuation control (DEC) system (“fourth hole” duct), an overhead roof exhaust system consisting of a capture system ~~consisting of~~ **with** a segmented canopy hood, scavenger duct, and cross-draft partitions.

SECTION D.1

FACILITY OPERATION CONDITIONS

<p>Facility Description [326 IAC 2-7-5(15)]</p> <ul style="list-style-type: none">(a) Electric Arc Furnaces (EAFs) - - Stack 1 Two (2) single shell electric arc furnaces (EAFs), identified as EAF-1a and EAF-1b. These furnaces operate at a nominal combined rate of 300 tons of molten steel per hour and utilize a direct-shell evacuation control (DEC) system (“fourth hole” duct), an overhead roof exhaust system consisting of with a capture system consisting of a segmented canopy hood, scavenger duct, and cross-draft partitions. <p>...</p> <p>(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)</p>

Comment 9:

Condition A.2(c): Emissions Units and Pollution Control Equipment Summary (and corresponding facility descriptions in D Sections) – The two continuous casters naturally have a “nominal combined casting capacity of 300 tons of steel per hour” and are not “limited” by this nominal capacity. Therefore, SDI requests that the caster description be changed to remove any reference to synthetic limitations.

Response to Comment 9:

As stated in the permit and in the TSD, Section A.1 and the boxed text in the D sections are “descriptive information and does not constitute enforceable conditions.” Therefore, IDEM, OAQ believes that the respective point is clear and additional language is not necessary.

Comment 10:

Condition A.2(j): Emissions Units and Pollution Control Equipment Summary (and corresponding facility descriptions in D Sections) – The list of equipment utilized for the slag handling and processing area, as described in the third paragraph, is redundant to the second paragraph. Further, the third paragraph incorrectly suggests that each intermediate piece of equipment is

somehow relevant to the overall slag processing emissions limitations. Therefore, SDI requests that this paragraph be deleted.

Response to Comment 10:

The following changes were made as a result of these comments:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] 326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

...

- (j) A slag handling and processing area (ID# 14) constructed in 2002, operated by an independent contractor, with a nominal rated capacity of 250 tons per hour.

This processing area consists of slag pot dumping, deskulling, slag cooling, digging of slag pits by a front-end loader, loading of grizzly feeder by a front-end loader, crushing, screening, conveyor transfer points, loading of materials into piles, storage piles, load out of materials from piles, and vehicle movement around piles.

~~This processing area utilizes the following equipment: one (1) grizzly/feeder, three (3) conveyors, one (1) single deck screen, one (1) primary crusher, one (1) by-pass conveyor, one (1) screen, and seven (7) stackers.~~

SECTION D.6

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

A slag handling and processing area (ID# 14), operated by an independent contractor, with a nominal rated capacity of 250 tons per hour.

This processing area consists of slag pot dumping, deskulling, slag cooling, digging of slag pits by a front-end loader, loading of grizzly feeder by a front-end loader, crushing, screening, conveyor transfer points, loading of materials into piles, storage piles, load out of materials from piles, and vehicle movement around piles.

~~This processing area utilizes the following equipment: one (1) grizzly/feeder, three (3) conveyors, one (1) single deck screen, one (1) primary crusher, one (1) by-pass conveyor, one (1) screen, and seven (7) stackers.~~

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Comment 11:

Condition A.3(d): Insignificant Activities – The language in brackets referencing combustion sources that are listed and regulated in Section D.2 is an inappropriate reference for this section because the regulated combustion sources are already listed in Conditions A.2 and D.2. This provision also incorrectly suggests that SDI could not have any other small natural gas combustion units like space heaters as needed. SDI requests that this bracketed item be deleted.

Response to Comment 11:

IDEM, OAQ acknowledges that the source may have other, insignificant, natural gas-fired combustion sources defined by 326 IAC 2-7-1(21).

The following changes were made as a result of these comments:

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

...

- (d) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour. ~~(Listed and regulated in Section D.2).~~

Comment 12:

Section B: General Conditions – Because SDI already has its Title V, there is no reason to include Section B operational conditions in the SSM.

Further, it appears that the draft permits reflect incorrect emergency numbers for IDEM.

Finally, Section B contains a number of objectionable conditions (e.g., Condition B.3: Term of Conditions – incorrectly suggests that supersession language may not have any effect.

Condition B.8: Certification – inappropriately requiring certification with conditions not in the permit). SDI requests that IDEM simply remove Section B from the permit before final issuance.

Response to Comment 12:

Sections B and C of the permit are included in the modifications for the same reasons noted in Response to Comment 5. In addition, the IDEM, OAQ has the authority under 326 IAC 2-7 to revise and update Part 70 permits as appropriate.

Supersession may not apply to some facilities under some conditions. Condition B.3 is a general condition of all Part 70 permits and is therefore designed to apply to all situations.

The certification required under Condition B.8 is required in Part 70 permits issued by Indiana. The interpretation of "or required by an applicable requirement" can apply to certain requirements, a NESHAP for example, which may not be included in the permit prior to a compliance deadline. NESHAP reporting requirements are also required to be certified by the facility's responsible official whether that condition is in the permit or not. Therefore, the Permit Shield does not extend to these situations.

The following changes were made to the permit to correct IDEM, OAQ phone numbers:

B.11 Emergency Provisions [326 IAC 2-7-16]

...

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

...

- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or

Telephone Number: 317-233-5674 **0178**(ask for Compliance Section)
Facsimile Number: 317-233-5967 **6865**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Branch
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251**

**Part 70 Operating Permit
EMERGENCY OCCURRENCE REPORT**

Source Name: Steel Dynamics, Inc. (SDI) - Structural and Rail Division
Source Address: 2601 County Road 700 East, Columbia City, Indiana 46725
Mailing Address: 2601 County Road 700 East, Columbia City, Indiana 46725
Part 70 Operating Permit No. T183-17160-00030

This Report consists of 2 pages.

Page 1 of 2

This is an emergency as defined in 326 IAC 2-7-1(12)

The Permittee must notify the Office of Air Quality (OAQ), within four (4) **daytime** business hours (1-800-451-6027 or 317-233-5674 **0178**, ask for Compliance Section); and

The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-5967 **6865**), and follow the other requirements of 326 IAC 2-7-16.

Address: 100 North Senate Avenue, Indianapolis, Indiana 46204-2251

This Emergency Occurrence Report consists of 2 pages.

Comment 13:

Condition B.13: Prior Permits Superseded – This provision needs to list all superseded permits and should more explicitly describe that prior PSD conditions are no longer in effect (see, e.g., Permit No. 183-24894-00030).

Response to Comment 13:

The following changes were made to the permit as a result of this comment:

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5] [326 IAC 2-2]

Except for the respective construction authorizations, all terms and conditions of the following permits:

PSD Permit Number	Issuance Dates
183-10097-00030	July 7, 1999
PSD 183-12692-00030	January 10, 2001
183-15170-00030	May 31, 2002
183-18658-00030	May 5, 2004

Issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. **Except for the construction authorizations in Section B of Permit Nos. 183-10097-00030, 183-12692-00030, 183-15170-00030, and 183-18658-00030, these prior permits and all of their terms and conditions are hereby superseded.**

Comment 14:

Section C: Source Operating Conditions – SDI does not believe that any Section C conditions need to be issued in this permitting action. However, if IDEM reissues Section C rather than simply relying on the already-issued Title V permit, SDI preserves its right to challenge any Section C issues.

Response to Comment 14:

As stated in the TSD, several Section B, not Section C, conditions have been revised to clarify their requirements. The Section C requirements of T183-17160-00030 are included in SPM 183-24522-00030 and have not been changed. This has been done so that the Permittee has an up-to-date permit that includes all of the appropriate requirements.

No changes were made to the permit as a result of this comment.

Comment 15:

Section D: Facility Operation Conditions - SDI requests that the following supersession language be added before each replaced D section to clearly state that similar sections in prior permits are no longer in effect. Similar language has been added by IDEM to other PSD construction permits (e.g., No. 063-22329-00037) and will better describe the permit history for future reference:

Section D.X [INSERT APPLICABLE SECTION NUMBER] of all prior permits is hereby superseded by this Section D.X of PSD/SSM 183-23905-00030.

Response to Comment 15:

Condition B.13 (Prior Permit Superseded) adequately addresses the supersession of permits and additional language in the permit D sections is not necessary. See Response to Comment 13.

Comment 16:

Sections D.3, D.4 and D.5: Although IDEM is cleaning up these sections by removing Clean Unit references, please note that these units are not changing at all.

Response to Comment 16:

The Proposed Changes section clearly identifies all changes made to the Part 70 permit.

No changes were made to the permit as a result of this comment.

Comment 17:

Conditions D.1.17, D.4.7, D.5.5, and D.6.4: Preventive Maintenance Plan – SDI requests that these Conditions be revised to eliminate any cross-referenced duplicative requirements, consistent with the reasoning in Comment #5 above.

Response to Comment 17:

The IDEM, OAQ disagrees. The respective conditions adequately describe and clarify the requirements without unnecessary duplicity. In addition, SDI did not indicate what revisions it believes are appropriate.

No changes were made to the permit as a result of this comment.

Comment 18:

Conditions D.1.19, D.3.5(c), D.4.8, and D.6.6: Testing Requirements – The testing requirements within this permit are not clear as written. To avoid any confusion as to when testing must be performed, SDI requests that any references concerning subsequent testing be revised to clarify those tests are to be repeated thereafter on a specified periodic basis after the last valid compliance test.

Response to Comment 18:

The respective permit conditions state that “These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.” Therefore, the specific timeframe is stated in the testing requirements.

No changes were made to the permit as a result of this comment.

Comment 19:

Conditions D.1.25 and D.6.5: Visible Emissions Notations
Subcondition (b) as stated is confusing. To clarify the application of the 80% determination of “normal” emissions, SDI requests that the words “at least” be inserted before “eighty percent (80%) of the time.”

In Subcondition (e), SDI requests that these Conditions be revised to eliminate any cross-referenced duplicative requirements, consistent with the reasoning in Comment #5 above.

Response to Comment 19:

See Response to Comment 5 regarding SDI’s concern regarding duplicative requirements.

The following changes were made as a result of this comment:

D.1.25 Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the LMS Baghouse shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, “normal” means those conditions prevailing, or expected to prevail, **at least** eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

...

D.6.5 Visible Emissions Notations

- (a) Visible emission notations of the slag handling processes shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, “normal” means those conditions prevailing, or expected to prevail, **at least** eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

...

Comment 20:

Conditions D.1.27(g) & (h), D.2.9, D.3.6(b), D.4.9(e), D.5.9(e), and D.6.7(c): *Record Keeping Requirements* – SDI requests that these conditions be revised to eliminate any cross-referenced duplicative requirements, consistent with the reasoning in Comment #5 above.

Response to Comment 20:

See Response to Comment 5.

Comment 21:

Conditions D.1.28(a), D.1.28(b), D.4.10, and D.6.7: Reporting Requirements - SDI requests that these conditions be revised to eliminate any cross-referenced duplicative requirements, consistent with the reasoning in Comment #5 above.

Response to Comment 21:

See Response to Comment 5.

Comment 22:

Conditions D.2.10, D.4.10, and D.6.8: Reporting Requirements - SDI requests that the final sentence concerning certification by the “responsible official” be revised as follows to eliminate any cross-referenced duplicative requirements, consistent with the reasoning in Comment #5 above:

~~The A report submitted by the Permittee does require the certification by the responsible official as defined by 326 IAC 2-7-1(34)~~ **pursuant to this condition is a designated submittal for the purposes of Condition B.8 – Certification.**

Response to Comment 22:

See response to Comment 5. In addition, the IDEM, OAQ believes that Conditions D.2.10, D.4.10 and D.6.8 clearly describe the respective reporting requirements.

No changes were made to the permit as a result of this comment.

Comment 23:

Section D.1 Generally – There are several non-PSD conditions which reference previously-issued and now-superseded PSD permits. Therefore, SDI requests that all non-PSD conditions that reference a previously-issued permit be deleted.

Response to Comment 23:

The following changes were made to eliminate unnecessary references to superseded permits:

D.1.4 Particulate Matter (PM) [40 CFR Part 60, Subpart AAa]

Pursuant to 40 CFR Part 60, Subpart AAa (Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983) and ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2004~~, the filterable PM emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet.

D.1.8 Carbon Monoxide (CO) [326 IAC 9-1]

Pursuant to ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and~~ 326 IAC 9-1 (Carbon Monoxide Emission Limits), the Permittee shall not allow the discharge of CO from an EAF unless the waste gas stream is controlled by a direct-flame afterburner, boiler, or other approved method. The Permittee has elected thermal oxidation at the direct-shell evacuation control (DEC) system air gap.

D.1.15 Visible Emission Limitations [40 CFR Part 60, Subpart AAa]

Pursuant to ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and~~ 40 CFR 20.272a(a), the Permittee shall not cause to discharge into the atmosphere from the EAFs any gases that:

- (a) Exit from the EAFs Baghouse stack (Stack 1) and exhibit three percent (3%) opacity or greater; and
- (b) Exit from the melt shop, and due solely to the operations of EAF-1a and EAF-1b, exhibit six percent (6%) opacity or greater.

Compliance with the above opacity limitations shall also satisfy the requirements of 326 IAC 5-1-2 (Opacity Limitations) under Condition C.2 - Opacity.

D.1.19 Testing Requirements [326 IAC 2-1.1-11] [40 CFR 60.275a]

Pursuant to ~~PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and~~ 326 IAC 2-1.1-11:

...

D.1.20 CO and VOC Continuous Emission Rate Monitoring Requirement [326 IAC 2-1.1-11] [326 IAC 3-5]

(a) Pursuant to ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, PSD SSM 183-23905-00030,~~ 326 IAC 2-1.1-11 and 326 IAC 3-5-1(d), the Permittee shall calibrate, certify, operate, and maintain a continuous emission monitoring system (CEMS) for measuring CO and VOC emissions rates in pounds per hour from the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.

(b) Pursuant to ~~PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030,~~ 326 IAC 2-1.1-11 and 326 IAC 3-5-4(a), the Permittee shall submit to IDEM, OAQ, within ninety (90) days after installation of a new monitor, a complete written continuous monitoring standard operating procedure (SOP). If revisions are made to an existing SOP, updates shall be submitted to IDEM, OAQ biennially.

(c) Pursuant to ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, PSD SSM 183-23905-00030 and~~ 326 IAC 2-1.1-11, the Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

...

D.1.21 Visible Emission Observations and Continuous Opacity Monitoring (COM) [326 IAC 2-1.1-11] [326 IAC 3-5] [40 CFR 60.273a]

(a) Pursuant to 326 IAC 2-1.1-11, 326 IAC 3-5, **and** 40 CFR 60.273a, ~~and PSD SSM 183-18426-00030, issued November 18, 2005:~~

...

D.1.23 Monitoring of Operations [40 CFR 60.274a]

~~Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD SSM183-12692-00030, issued January 10, 2001 and 40 CFR 60.274a, the Permittee shall comply with the following monitoring requirements:~~

...

Comment 24:

Conditions D.1.20, D.1.27(c), and D.1.28(b) - SDI requests that any references to “VOC” be replaced with “THC” to be consistent with the CEM already in place.

Response to Comment 24:

The referenced conditions require monitoring, record keeping and reporting to ensure compliance with the VOC limitations in Condition D.1.9. Condition D.1.9 limits VOC, not total hydrocarbon content (THC), pursuant to 326 IAC 2-2. SDI has not provided any information justifying the monitoring of THC as a surrogate for VOC.

No changes were made to the permit as a result of this comment.

Comment 25:

Condition D.1.1: EAFs Operation Limitation – The 300 tons of molten steel per hour for both EAFs is merely a design throughput for the facility, not a limit, while the annual steel throughput provides the enforceable limitation. Therefore, SDI requests that Subcondition D.1.1(a) be deleted.

Response to Comment 25:

The 300 ton/hr figure in Condition D.1.1 is a BACT requirement from PSD SSM 183-18426-00030, issued November 18, 2005, and required again in T183-17160-00030, issued July 3, 2007, which superseded PSD SSM 183-18426-00030. Revisions to existing PSD BACT requirements will not be considered unless the appropriate permit application is received by IDEM, OAQ and it includes a re-evaluation of PSD BACT. At this time, SDI has not submitted an application in support of the proposed change.

No changes were made to the permit as a result of this comment.

Comment 26:

Condition D.1.4: Particulate Matter (PM) - This condition is based solely on the NSPS and not any PSD requirement (Condition D.1.5 has PSD-based terms). Thus, the references to prior PSD permits should be removed.

Response to Comment 26:

See Response to Comment 23.

Comment 27:

Conditions D.1.5: Particulate Matter (PM/PM10) – There is no legal basis for IDEM to issue separate limits for filterable only PM10 and total PM10. Therefore, SDI requests that this condition be amended to remove the filterable only limits for PM10.

Response to Comment 27:

The respective PM emission limits in Condition D.1.5 were reviewed with respect to 326 IAC 2-2 during the permit review process for this significant source modification. The BACT determination

included in Appendix B to the Technical Support Document indicates that the filterable limits for the EAFs cover PM and PM10. This evaluation and determination is consistent with other permits issued by the IDEM, OAQ.

No changes were made to the permit as a result of this comment.

Comment 28:

Condition D.1.6: Sulfur Dioxide (SO₂) PSD BACT –
The Scrap Management Plan (“SMP”) should stand alone from the Permit to allow for timely updates to the Plan without undergoing cumbersome PSD review. SDI requests that the conditions be revised to delete any reference to Section E.2 or an incorporated Plan.

In addition, in subcondition (c)(1), SDI requests that the reference to “direct iron” be corrected to “direct reduced iron.”

Response to Comment 28:

The public has the legal authority under the Clean Air Act to know if a source is subject to a particular requirement and how the owner or operator of that source chooses to comply with that requirement. The owner or operator is granted a permit shield under 326 IAC 2-7-15 that provides that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that the applicable requirements are included and specifically identified in the permit. Therefore, in order to satisfy the requirements of the Part 70 rules and the needs of all of the permit stakeholders, it is necessary to incorporate the requirements of the Scrap Management Plan (SMP) with as much detail as is needed to identify the underlying rule and how the owner or operator will comply with the respective requirements.

The following changes were made as a result of this comment:

D.1.6 Sulfur Dioxide (SO₂) - PSD Best Available Control Technology [326 IAC 2-2]

...

(c) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and amended by 183-18658-00030, issued May 5, 2004, and 326 IAC 2-1.1-11:

(1) The sulfur content of the direct **reduced** iron (DRI), charge carbon, and injection carbon added into the EAFs shall not exceed the following:

...

Comment 29:

Condition D.1.8: Carbon Monoxide (CO) – The condition should note that IDEM has approved of SDI’s use of thermal oxidation at the direct-shell evacuation control (DEC) system air gap. It is also based solely on the cited state rule and not PSD. SDI requests that the condition be revised as follows:

*Pursuant to ~~PSD Permits GP183-10097-00030 issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 9-1 (Carbon Monoxide Emission Limits)~~, the Permittee shall not allow the discharge of CO from the EAF unless the waste gas stream is controlled by a direct-flame afterburner, boiler, or other approved method. The Permittee has elected thermal oxidation method at the direct-shell evacuation control (DEC) system air gap, **which is an approved method.***

Response to Comment 29:

The following changes were made as a result of this comment:

D.1.8 Carbon Monoxide (CO) [326 IAC 9-1]

Pursuant to ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001,~~ and 326 IAC 9-1 (Carbon Monoxide Emission Limits), the Permittee shall not allow the discharge of CO from an EAF unless the waste gas stream is controlled by a direct-flame afterburner, boiler, or other approved method. The Permittee has elected thermal oxidation at the direct-shell evacuation control (DEC) system air gap, **which is an OAQ-approved method.**

Comment 30:

Condition D.1.12(a)(1): Fluorides PSD BACT – Granular fluorspar is not needed for compliance with the permit limit and is less efficient for fluxing molten steel than powdered forms. SDI requests that this provision be deleted to allow the flexibility to use any type of fluorspar.

Response to Comment 30:

While powdered fluorspar may be a more-effective fluxing agent for steel production, fluorspar is the source of fluoride emissions from furnace operations and its form may effect fluoride emissions. The requirement to use granular fluorspar is part of a BACT requirement from PSD SSM 183-18426-00030, issued November 18, 2005, and required again in T183-17160-00030, issued July 3, 2007, which superseded PSD SSM 183-18426-00030. Revisions to existing PSD BACT requirements will not be considered unless the appropriate permit application is received by IDEM, OAQ and it includes a re-evaluation of PSD BACT. At this time, SDI has not submitted an application in support of the proposed change.

No changes were made to the permit as a result of this comment.

Comment 31:

Condition D.1.14: Visible Emission Limitations PSD BACT – Subcondition (d) is redundant to D.1.17 (Preventive Maintenance Plan (PMP)) and should be deleted.

Also, Subcondition (c) should simply list the opacity limit and should not repeat the melt shop roof canopy operational conditions found in D.1.5.

Response to Comment 31:

The following changes were made as a result of this comment:

D.1.14 Visible Emission Limitations - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2 (PSD – Control Technology Review Requirements):

- (a) Visible emissions of the stack exhaust from the EAFs Baghouse (Stack 1) shall not exceed three percent (3%) opacity based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).
- (b) Visible emissions of the stack exhaust from the LMS Baghouse (Stack 43) shall not exceed three percent (3%) opacity, based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).
- (c) Particulate matter (PM and PM₁₀) emissions **from generated during furnace operations shall be captured by the melt shop roof canopy and ducted to the EAFs Baghouse such**

~~that visible emissions generated by EAF-1a and EAF-1b shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9) when emitted from any building opening.~~

~~(d) Inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.~~

Comment 32:

Condition D.1.16: Ladle Metallurgy Station and Continuous Casters – There is no reason for a separate filterable-only PM10 limit. A total PM10 limit reflects the regulated criteria pollutant and is sufficient for BACT.

Response to Comment 32:

The respective PM emission limits in Condition D.1.16 were reviewed with respect to 326 IAC 2-2 during the permit review process for this significant source modification. The BACT determination included in Appendix B to the Technical Support Document indicates that the filterable limits for the LMS and CC cover PM and PM10. This evaluation and determination is consistent with other permits issued by the IDEM, OAQ.

No changes were made to the permit as a result of this comment.

Comment 33:

Condition D.1.18: Baghouse Operation – SDI requests that this condition be deleted because it merely repeats the requirements found in other permit conditions, including those in Condition D.1.5.

Response to Comment 33:

Operation of the EAFs Baghouse is required by Condition D.1.5(a). Operation of the LMS Baghouse is required by D.1.16(a).

As a result, the following changes were made as a result of this comment:

D.1.18 Baghouse Operation [326 IAC 2-2] [326 IAC 2-7-6(6)]

~~(a) Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and in order to comply with Condition D.1.5, the EAFs Baghouse shall be in operation and control emissions at all times EAF-1a and/or EAF-1b are in operation.~~

~~(b) Pursuant to PSD SSM 183-23905-00030, and in order to comply with Conditions D.1.16 and D.1.17, the LMS Baghouse, used to control particulate emissions, shall be in operation at all times the Ladle Metallurgy Station (LMS), Continuous Caster ID# 3k and/or Continuous Caster ID# 42a are in operation.~~

~~(c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.~~

Comment 34:

Condition D.1.19: Testing Requirements –

The reference to this permit issuance (No. 23905) as the condition's basis is completely unnecessary and is inconsistent with how IDEM drafts permit conditions; it should be deleted.

In Subcondition (b), the nominal air flow reference should be deleted, instead using 180 days after start up as the trigger.

In Subcondition (c), SDI requests that the facility have 365 days after start up to perform PM/PM10 testing because this is not an NSPS requirement.

For both Subconditions (b) and (c), SDI requests that the statement "PM10 includes filterable and condensable PM10" be deleted because it confuses the NSPS, filterable-only limit in the permit.

Finally in Subcondition (h), SDI requests that that the requirement to test for Manganese be deleted because this modification only affects particulate emissions and because previous testing already demonstrated that Manganese emissions are well below the HAP threshold.

Response to Comment 34:

The IDEM, OAQ believes that 180 days after startup of the LMS Baghouse is sufficient to perform PM/PM10 stack testing.

Condition D.1.13 limits manganese emissions from the EAFs Baghouse and the LMS Baghouse to render the requirements of 326 IAC 2-4.1 not applicable. The requirement to conduct emissions testing for Manganese is from the existing Part 70 permit. As indicated by the commenter and in Appendix A, manganese emissions are a subset of particulate emissions and particulate emissions are expected to increase following completion of this modification. As a result, the Permittee must conduct emissions testing to determine compliance with D.1.13.

Conditions D.1.19(b) and (c) require PM/PM10 testing of the EAFs Baghouse and LMS Baghouse to determine compliance with Conditions D.1.4, D.1.5 and D.1.16. The respective PM/PM10 emission limitations specifically limit filterable PM/PM10 and filterable plus condensable PM10 emissions.

The following changes have been made to the permit to clarify the testing requirements:

D.1.19 Testing Requirements [326 IAC 2-1.1-11] [40 CFR 60.275a]

Pursuant to ~~PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and~~ 326 IAC 2-1.1-11:

...

- (b) Within 180 days after **startup of the EAF Baghouse (following its modification permitted by PSD SSM 183-23905-00030)** ~~has been modified to accommodate an airflow rating of 1,800,000 acfm,~~ the Permittee shall perform PM/PM₁₀ testing on the stack emissions from the EAF Baghouse (stack 1) in order to demonstrate compliance with the PM/PM₁₀ limits established by 326 IAC 2-2 and 40 CFR Part 60. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀ **for the purpose of determining compliance with 326 IAC 2-2**. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.
- (c) Within 180 days after startup of the LMS Baghouse, the Permittee shall perform PM/PM₁₀ and opacity testing on the emissions from the LMS Baghouse (stack 43) in order to demonstrate compliance with the PM/PM₁₀ and opacity limits established by 326 IAC 2-2. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀ **for the purpose of determining compliance with 326 IAC 2-2**. Testing shall be completed

using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.

Comment 35:

Condition D.1.20: CO and THC Continuous Emission Rate Monitoring Requirement – In Subcondition (d) (misnumbered as (e)), SDI requests that IDEM delete the second paragraph describing additional inspection requirements, since those steps cannot be performed without shutting down the entire operation.

Response to Comment 35:

The following changes were made as a result of this comment:

D.1.20 CO and VOC Continuous Emission Rate Monitoring Requirement [326 IAC 2-1.1-11] [326 IAC 3-5]

...

- (e d) Whenever the CO or VOC continuous emission monitor is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, the Permittee shall perform once per day operational status inspections of the equipment that is important to the performance of the DEC, canopy hood and 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 ductwork, and fan erosion) **unless such observations require the process units to be inoperative.**

Any deficiencies shall be noted and proper maintenance performed. This requirement does not replace the routine monthly inspections of the same equipment.

Comment 36:

Condition D.1.21: Visible Emission Observations and Continuous Opacity Monitoring – SDI requests that IDEM remove references to “all COMS” and replace the term with “the COMS,” because it incorrectly suggests that there is more than one COMS.

In Subcondition (d)(2), SDI requests that the word “**hours**” is added between the words “four (4)” and “between.”

Response to Comment 36:

The following changes were made as a result of this comment:

D.1.21 Visible Emission Observations and Continuous Opacity Monitoring (COM) [326 IAC 2-1.1-11] [326 IAC 3-5] [40 CFR 60.273a]

...

- (b) ~~All COMS~~ **The COMS** shall meet the performance specifications of 40 CFR 60, Appendix B, Performance Specification No. 1, and are subject to monitor system certification requirements pursuant to 326 IAC 3-5.
- (c) In the event that a breakdown of a COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
- (d) Whenever a COMS is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours or more and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide

a certified opacity reader, who may be an employee of the Permittee or an independent contractor, to self-monitor the emissions from the emission unit stack.

- (1) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.
- (2) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day during daylight operations, with at least four (4) **hours** between each set of readings until a COMS is online.

Comment 37:

Condition D.1.22: Bag Leak Detection System (BLDS) –
SDI requests that Subcondition (a)(6) be revised to reference only one baghouse instead of “baghouses.”

Subcondition (b)(3) should be deleted because it is inconsistent with the current “Responses to Exceedances” language in IDEM’s permits.

Response to Comment 37:

IDEM concurs. Condition C.16(a) states that the Permittee, upon detecting an excursion or exceedance, shall restore operation of the emissions unit to its normal or usual manner of operation “as expeditiously as practicable” and not within eight (8) business hours.

The following changes were made as a result of this comment:

D.1.22 Bag Leak Detection System (BLDS) [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005:

- (a) The Permittee shall operate continuous bag leak detection systems (BLDS) for the EAFs Baghouse. The bag leak detection systems (BLDS) shall meet the following requirements:
...
 - (6) The bag detector must be installed downstream of the ~~baghouses~~ **baghouse**.
- (b) In the event of a bag leak detection system alarm:
 - (1) The affected compartments will be shut down as soon as possible until the failed units have been repaired or replaced.
 - (2) Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B.11 - Emergency Provisions).
 - (3) ~~No later than eight (8) business hours of the determination of failure;~~ **The Permittee shall take** response steps according to the timetable described in the Section C.16 – Response to Excursions or Exceedances shall be initiated.

Comment 38:

Condition D.1.23: Monitoring of Operations –
In Subcondition (a), the reference to “Condition D.1.25(d)” should be changed to “subsection (d) of this condition.”

In addition, SDI requests that the term “meltdown” in Subconditions (e) and (f) be replaced with “**melting**” to correct a typographical error.

Response to Comment 38:

The following changes were made as a result of this comment:

D.1.23 Monitoring of Operations [40 CFR 60.274a]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD SSM183-12692-00030, issued January 10, 2001 and 40 CFR 60.274a, the Permittee shall comply with the following monitoring requirements:

- (a) Except as provided under ~~item~~ **subsection (e)** of this condition, the Permittee shall check and record on a once per shift basis the furnace static pressure if the DEC system is in use, and a furnace static pressure gauge is installed according to ~~Condition D.1.25(d)~~ **subsection (d) of this condition** and either:

...

- (e) Except as provided under item (f) of this condition, when the Permittee is required to demonstrate compliance with the standard under Condition D.1.15(b) and at any other time the U.S. EPA may require under Section 114 of the CAA, the pressure in the free space inside the EAF shall be determined during the melting and refining period(s) using the monitoring device required under item (d) of this condition.

The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a ~~meltdown~~ **melting** and refining period.

- (f) Pursuant to 40 CFR 60.273a(d), a furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of the shop opacity are performed by a certified visible emission observer as follows:

- (1) Shop opacity observations shall be conducted at least once per day when the furnace is operating in the ~~meltdown~~ **melting** and refining period.

...

Comment 39:

Condition D.1.26: Parametric Monitoring –

Given that the LMF baghouse has daily VE notations required, there is no reason for baghouse pressure drop to be measured as well.

In any event, the requirement to calibrate the instrument every six months is overly burdensome; IDEM had been allowing calibration once per year in other permits.

Response to Comment 39:

326 IAC 2-7-5(3) states that Part 70 permits must include: “Monitoring and related record keeping and reporting requirements which assure that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.” Pressure drop is an indicator of a variety of conditions within a baghouse. Monitoring of the static pressure drop across a baghouse can alert the operator to relative changes (such as dust cake resistance or bag breaks) over a period of time. The operator can use this information to chart trends and determine if the unit is operating within the optimal range as determined by baseline testing of the unit and manufacturer’s specifications. Any deviations from the normal operational range of the unit,

whether gradual or sudden, should alert the operator that the unit needs maintenance. Baghouse failure can occur suddenly so monitoring can minimize lag time in addressing control failure.

The accurate and consistent operation of the device used to measure the pressure drop must be assured or the respective monitoring data would be invalid. Therefore, frequent calibration of the device used to measure the pressure drop across a baghouse is necessary. IDEM has allowed less frequent calibration of the respective device when the Permittee has provided documentation from the manufacturer in support of its request. SDI has not submitted any documentation in support of its request.

Having specific monitoring requirements in the permit regarding control devices will lessen the likelihood of violations of permit requirements. The Permittee's ability to verify compliance with its air pollution control requirements is a central goal of the Title V permit program.

Comment 40:

Condition D.1.27: Record Keeping Requirements –

Subcondition (d) should be deleted because it incorrectly suggests that Method 9 readings will be conducted, rather than using the COM on the EAFs baghouse and VE notations on the LMF baghouse.

In Subcondition (e), the references to PSD permits are inappropriate since the legal authority instead stems from the NSPS.

SDI also requests that the D.1 references in Subconditions (g) and (h) be corrected.

Move Condition D.1.28(d) to D.1.27(k).

Response to Comment 40:

Condition D.1.27 mistakenly references Conditions D.1.14 and D.1.15. Condition D.1.21(d) requires visible emissions when the COMS is not operational.

The IDEM, OAQ has removed the references to previous permits because these references are not necessary.

The following changes were made as a result of this comment:

D.1.27 Record Keeping Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

-
- (a) Pursuant to ~~CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001, and 326 IAC 2-1.1,~~ **the To document compliance with Conditions D.1.20 and D.1.21, the** Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner so that they may be inspected by the IDEM, OAQ, or the U.S. EPA., if so requested or required.
 - (b) To document compliance with Condition D.1.1 - EAFs Operation Limitation, the Permittee shall maintain records of the amount of steel produced.
 - (c) To document compliance with Conditions D.1.7 - CO PSD BACT and D.1.9 - VOC PSD BACT, the Permittee shall maintain records of the readings of the CO and VOC CEMS.
 - (d) Pursuant to ~~PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and to~~ **To document compliance with Conditions D.1.14 and D.1.15 Condition D.1.21(d),** the Permittee shall maintain records of visible emission readings required by those conditions and make the records available upon request to IDEM, OAQ, and the U.S. EPA.

- (e) Pursuant to ~~CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 40 CFR 60.276a~~, records of the measurements required in 40 CFR 60.274a must be retained for at least 5 years following the date of the measurement.
- (f) Pursuant to ~~CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification 183-12692-00030, issued January 10, 2001 326 IAC 2-1.1-11, 326 IAC 2-2, and in In~~ order to demonstrate compliance with Condition D.1.6, the Permittee shall maintain records of the verification of sulfur content of DRI, charge carbon, and injection carbon added into the EAFs.
- (g) Pursuant to ~~CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001, 326 IAC 2-1.1-11 and in In~~ order to demonstrate compliance with Condition ~~D.1.24~~ **D.1.22**, the Permittee shall maintain records of the dates and times of all bag leak detection system alarms, the cause of each alarm, and an explanation of all corrective actions taken.
- (h) ~~In order to~~ **To** document compliance with Condition ~~D.1.25~~ **D.1.23**, the Permittee shall also maintain records of the dates and results of the sensor inspections, response tests, electronic drift checks, and response steps taken.
- ...
- (k) All records shall be maintained in accordance with Condition C.19 - General Record Keeping Requirements of this permit.
- (l) Records necessary to demonstrate compliance shall be available not later than 30 days of the end of each compliance period.

Comment 41:

Condition D.1.28: Reporting Requirements –
In Subcondition (c):

- (1) The references to PSD permits is inappropriate since the legal authority instead stems from the NSPS;
- (2) In Subcondition (ii), the term “If applicable” should be added to the beginning of the subcondition; and
- (3) In Subcondition (iii), the language should be changed to clarify that this NSPS language only applies to the filterable PM test on the EAFs baghouse.

Subcondition (d), which discusses recordkeeping requirements, is out of place in this reporting condition and should be deleted.

Response to Comment 41:

The following changes were made as a result of this comment:

D.1.28 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

...

- (b) Pursuant to ~~CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification 183-12692-00030, issued January 10, 2001 and 326 IAC 2-1.1-11,~~ **The** Permittee shall submit a quarterly excess emissions report, if applicable, based on the continuous emissions monitor (CEM) data for CO and VOC, and continuous opacity monitor (COM) data, pursuant to 326 IAC 3-5-7.

These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C.20 - General Reporting Requirements of this permit.

- (c) Pursuant to ~~CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification 183-12692-00030, issued January 10, 2001 and 40 CFR 60.276a, and PSD Permits 183-10097-00030 and 183-12692-00030,~~ the Permittee shall comply with the following reporting requirements:
- (i) The Permittee shall submit a semi-annual written report of exceedances of the control device opacity to IDEM, OAQ, and upon request, the U.S. EPA.
 - (ii) **If applicable, The the** Permittee shall submit semi-annually any values that exceed the furnace static pressure value established under 40 CFR 60.274a(g) and either values of control system fan motor amperes that exceed 15 percent of the value established under 40 CFR 60.274a(c) or values of flow rates lower than those established under 40 CFR 60.274a(c) to IDEM, OAQ, and upon request, the U.S. EPA.
 - (iii) The Permittee shall furnish to IDEM, OAQ, and the U.S. EPA a written report of the results of the compliance emission tests **required by 40 CFR Part 60**. This report shall include the following information:
...
(d) ~~To document compliance with Condition D.1.21, the Permittee shall maintain records of the COMS and visible emission notations required by that condition.~~

Comment 42:

Section D.2 Generally – The conditions need to be renumbered to be sequential (e.g., there are two D.2.4 conditions but no D.2.5).

Response to Comment 42:

The following changes were made as a result of this comment:

~~D.2.4~~ **D.2.5** Tundish Nozzle Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

Comment 43:

Conditions D.2.4, D.2.4 (D.2.5) and D.2.7: Ladle Dryer, Tundish Nozzle, and Tundish Dryer PSD BACT – Because dual limits are unnecessary for these small natural gas-fired units, SDI requests that one of the two forms of limits be deleted.

Response to Comment 43:

The dual limits of the respective provisions are PSD BACT requirements. Revisions to existing PSD BACT requirements will not be considered unless the appropriate permit application is received by IDEM, OAQ and it includes a re-evaluation of PSD BACT. At this time, SDI has not submitted an application in support of the proposed changes.

No changes were made to the permit as a result of this comment.

Comment 44:

Condition D.2.1: Nitrogen Oxides (NO_x) Emissions – The fuel usage limitation is lower than needed to limit the source below the PSD threshold for NO_x. SDI requests that the natural gas limit be changed to 262.8 MMCF/yr.

Response to Comment 44:

Appendix A (Emission Calculations) indicates how the 241 MMCF/yr limit was determined. SDI has not provided any calculations in support of its request to revise the limit.

No changes were made to the permit as a result of this comment.

Comment 45:

Condition D.2.2: PM/PM₁₀ Emissions PSD BACT – SDI requests that subcondition (1) be deleted. There is no legal basis for calling a baghouse BACT for small natural gas-fired units. Further, the particulate loading is so low that it is unrealistic to expect a baghouse to control particulate from natural gas combustion.

In addition, SDI requests that the final sentence of this condition referencing Section D.1 be deleted since the baghouses cannot be considered BACT for particulate from these units.

Response to Comment 45:

The IDEM, OAQ agrees. According to the BACT analysis provided in Appendix B.3, there are no technically feasible control options for controlling filterable PM from natural gas combustion.

The following changes were made as a result of this comment:

D.2.2 PM/PM₁₀ Emissions - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the PM/PM₁₀ emissions from tundish preheaters ID# 3p, 3h, 3i, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall **not exceed 0.0076 pounds per MMBtu.**

~~(1) — Be controlled by the EAFs Baghouse and/or the LMS Baghouse.~~

~~(2) — Not exceed 0.0076 pounds per MMBtu.~~

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

~~Compliance requirements for the respective baghouses are included in Section D.1 of the permit.~~

Comment 46:

Condition D.2.3: Nitrogen Oxides (NO_x) PSD BACT – The correct NO_x emission limit is 0.1 lb/MMBtu. IDEM is arguably changing the number of significant digits in the limit by adding a zero at the end. Please correct the limit to “0.1 pound per MMBtu.”

Response to Comment 46:

The aforementioned limit is expressed as 0.10 pound per MMBtu in the current permit. It is an existing BACT limit that was not changed by this source modification.

No changes were made to the permit as a result of this comment.

Comment 47:

Condition D.2.4: Ladle Dryer PSD BACT –

In Subcondition (e), the existing VOC limit cannot be changed through this permitting action. Please return it to “0.0056 pounds per MMBtu” instead of “0.0055 pounds per MMBtu.”

In Subcondition (g), the inclusion of a separate limit for filterable-only particulate makes no sense and is overly burdensome. There are no separate filterable-only particulate limits for any other preheater/dryer in this Permit. SDI requests that provision (g) be deleted.

Response to Comment 47:

The aforementioned limits are from SDI's Part 70 Permit. They are existing PSD BACT limits that were not changed by this source modification. Revisions to existing PSD BACT requirements will not be considered unless the appropriate permit application is received by IDEM, OAQ and it includes a re-evaluation of PSD BACT. At this time, SDI has not submitted an application in support of the requested changes.

No changes were made to the permit as a result of this comment.

Comment 48:

Condition D.2.4 [sic]: Tundish Nozzle Preheater PSD BACT – In Subcondition (e), the existing VOC limit cannot be changed through this permitting action. Please return it to “0.0056 pounds per MMBtu” instead of “0.0055 pounds per MMBtu.”

Response to Comment 48:

The aforementioned limit is from SDI's Part 70 Permit. It is an existing PSD BACT limit that was not changed by this source modification. Revisions to existing PSD BACT requirements will not be considered unless the appropriate permit application is received by IDEM, OAQ and it includes a re-evaluation of PSD BACT. At this time, SDI has not submitted an application in support of the requested change.

No changes were made to the permit as a result of this comment.

Comment 49:

Condition D.2.6(c): Tundish Preheater PSD BACT – There is a typographical error in the NOx limit; it should be corrected to “0.1 lbs/MMBtu” instead of “0.01 pounds per MMBtu.”

Response to Comment 49:

As stated in Appendix B, the NOx BACT limit is 0.1 pounds per MMBtu.

The following changes were made as a result of this comment:

D.2.6 Tundish Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Tundish Preheater (ID# 3n) shall use natural gas as the primary fuel and propane as back up fuel.

- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Preheater (ID# 3n).
- (c) The NO_x emissions from the Tundish Preheater (ID# 3n) shall not exceed ~~0.04~~ **0.1** pounds per MMBtu based on a 3-hour block average.

...

Comment 50:

Condition D.2.7: Tundish Dryer PSD BACT –

In Subcondition (c), there is a typographical error in the NO_x limit; it should be corrected to “0.1 lbs/MMBtu” instead of “0.01 pounds per MMBtu.”

In Subcondition (e), the existing VOC limit cannot be changed through this permitting action. Please return it to “0.0056 pounds per MMBtu” instead of “0.0055 pounds per MMBtu.”

Response to Comment 50:

Regarding subcondition (e), the 0.0056 limit is from SDI's Part 70 Permit. It is an existing PSD BACT limit that was not changed by this source modification. Revisions to existing PSD BACT requirements will not be considered unless the appropriate permit application is received by IDEM, OAQ and it includes a re-evaluation of PSD BACT. At this time, SDI has not submitted an application in support of the requested change. No changes were made to the permit as a result of this comment.

Regarding subcondition (c), as stated in Appendix B, the NO_x BACT limit is 0.1 pounds per MMBtu. The following changes were made as a result of this comment:

D.2.7 Tundish Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD SSM183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

...

- (c) The NO_x emissions from the Tundish Dryer (ID# 3o) shall not exceed ~~0.04~~ **0.1** pounds per MMBtu, based on a 3-hour block average.

Comment 51:

Condition D.2.8: Low NO_x Burners – This condition merely repeats what is already found in other conditions in Section D.2 (e.g., Conditions D.2.4(b), D.2.6(b), and D.2.7(b) for the tundish nozzle preheater (ID# 3n), tundish preheater (ID# 3n), and the tundish dryer (ID# 3o)). Please delete this entire condition.

Response to Comment 51:

Conditions D.2.3 through D.2.7 require the use of low NO_x burners pursuant to 326 IAC 2-2-3. As a result, Condition D.2.8 is not necessary.

The following changes were made as a result of this comment:

~~**D.2.8 Low NO_x Burners [326 IAC 2-2] [326 IAC 2-7-6(6)]**~~

~~(a) Pursuant to PSD SSM183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)):~~

- ~~(1) The Tundish Nozzle Preheater (ID# 3m) shall utilize the low NO_x burners at all times when the Tundish Nozzle Preheater (ID# 3m) is in operation.~~

~~(2) The Tundish Preheater (ID# 3n) shall utilize the low NO_x burners at all times when the Tundish Preheater (ID# 3n) is in operation.~~

~~(3) The Tundish Dryer (ID# 3o) shall utilize the low NO_x burners at all times when the Tundish Dryer (ID# 3o) is in operation.~~

~~(b) Pursuant to PSD SSM 183-23905-00030, and in order to comply with Condition D.2.1(b), tundish preheaters ID# 3p, 3h, 3i, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall utilize low NO_x burners at all times the respective units are in operation.~~

D.2.9 8 Record Keeping Requirements

To document compliance with Condition D.2.1, the Permittee shall maintain daily records of the fuel used by tundish preheaters ID# 3p, 3n, 3h and 3i. All records shall be maintained in accordance with Condition C.19 (General Record Keeping Requirements) of this permit.

D.2.10 9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

Comment 52:

Section D.6 Generally – The conditions need to be renumbered to be sequential (e.g., Condition D.6.6 is listed before D.6.5).

Response to Comment 52:

The following changes were made as a result of this comment:

D.6.6 5 Testing Requirements [326 IAC 2-2]

...

D.6.5 6 Visible Emissions Notations

...

Comment 53:

Condition D.6.2: Particulate Matter (PM) – Either there are already PSD limits in place for slag processing, in which case the process weight rate rule does not apply (see 326 IAC 6-3-1(c)(1)), or the opacity limits present in Condition D.6.3 are not particulate limits at all, in which case the third paragraph in Condition D.6.2 (“Particulate limits will be considered in compliance . . .”) must be deleted.

Response to Comment 53:

The IDEM, OAQ agrees that the third paragraph of Condition D.6.2 should be deleted. That condition establishes particulate emission limitations pursuant to 326 IAC 6-3-2. Therefore, the condition should not include a statement regarding the relationship between particulate emissions and opacity for the purpose of determining compliance.

The following changes were made as a result of this comment:

D.6.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to ~~PSD SSM 183-18426-00030, November 21, 2005~~ and 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), the combined filterable particulate emissions from the crushing, screening, conveyor transfer points, continuous stacking operations shall not exceed 60.96 pounds per hour.

This limit is based on the nominal process weight rate of 250 tons per hour.

~~Particulate emissions will be considered in compliance with 326 IAC 6-3 in the absence of PM compliance tests provided that visible emissions do not exceed the visible emissions requirements specified for these operations in this permit.~~

The pound per hour limitation was calculated using the following equation:

$$E = 55.0P^{0.11}-40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour.}$$

The above equation shall be used for extrapolation of the data for process weight rates in excess of sixty thousand (60,000) pounds per hour.

Comment 54:

Condition D.6.3: Visible Emission Limitations PSD BACT – In the chart, the visible emission limitation for “pouring of liquid slag from EAF or LMS to slag pots” is already addressed in Section D.1 with the opacity limit on any building openings. Further, the operation does not even occur in the slag processing area of the plant. SDI requests that the second limit on the chart be deleted.

Response to Comment 54:

IDEM agrees that Condition D.1.14(c) already limits the visible emissions from any building opening to 3% opacity pursuant to 326 IAC 2-2-3. Furnace operations, including the pouring of liquid slag from the EAFs or LMS to slag pots, occur inside the meltshop building and are consequently subject to Condition D.1.14(c). As a result, the respective 3% opacity limit in Condition D.6.3 is redundant.

The following changes were made as a result of this comment:

D.6.3 Visible Emission Limitations - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030, and 326 IAC 2-2 (PSD - Control Technology Review Requirements), the fugitive dust emissions from the various slag handling and processing operations shall be controlled in accordance with the Fugitive Dust Control Plan (FDCP) (included in Section E.1 of this permit) such that the following visible emission limitations are not exceeded:

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity) (six (6) minute average)
Transferring of skull slag to slag pot	10 %
Pouring of liquid slag from EAF or LMS to slag pots	3% (on any building opening)
Dumping of liquid slag from slag pot to slag pit and cooling	3 %
Transferring of skull slag from slag pot to skull pit	5 %
Digging skull slag pits	5 %

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity) (six (6) minute average)
Digging slag pits	3 %
Stockpiling of slag adjacent to the grizzly feeder	3 %
Wind erosion of stockpiles	3 %
Crushing	3 %
Screening	3 %
Conveyor transfer points	3 %
Continuous stacking of processed slag to stockpiles	3 %
Loadout of processed slag from stockpiles to haul trucks for shipment	3 %
Inplant hauling of slag pots (filled) and processed slag	3 %

Comment 55:

Condition D.6.5 [sic]: Visible Emissions Notations – There is no basis for adding this new monitoring requirement. The only change occurring at the slag processing area is the removal of a partial enclosure that IDEM initially wanted but now has decided is not BACT for slag processing operations; there is no planned change to slag processing operations. Further, after removal of the structure, opacity around the slag processing operations should be equal to or less than current conditions. The added VE notation requirement is overly burdensome and should be deleted.

Response to Comment 55:

The requirement to conduct visible emission notations of the slag handling processes was not added by this significant source modification – it is Condition D.6.5 of SDI’s existing Part 70 permit. IDEM believes that the monitoring requirement is an appropriate and necessary provision that ensures continuous compliance with the various opacity limits of Condition D.6.3.

No changes were made to the permit as a result of this comment.

Comment 56:

Condition D.6.7(b): Recordkeeping Requirements – Consistent with Comment #55 above, this recordkeeping requirement should be deleted.

Response to Comment 56:

See Response to Comment 55.

Comment 57:

Condition D.6.8: Reporting Requirements – Because the information sought is already reported annually in the i-STEP program, SDI requests that this condition be deleted.

Response to Comment 57:

Condition D.6.8 requires quarterly reporting to document compliance with Condition D.6.1. Annual reporting provided for the i-STEP program is not sufficient.

No changes were made to the permit as a result of this comment.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Prevention of Significant Deterioration (PSD) Part 70 Significant Source Modification and Significant Permit Modification

Source Description and Location

Source Name: Steel Dynamics, Inc. - Structural and Rail Division
Source Location: 2601 County Road 700 East, Columbia City, IN 46725
County: Whitley
SIC Code: 3312
Operation Permit No.: T183-17160-00030
Operation Permit Issuance Date: July 3, 2007
Significant Source Modification No.: 183-23905-00030
Significant Permit Modification No.: 183-24522-00030
Permit Reviewer: ERG/BS

The Office of Air Quality (OAQ) has reviewed a significant source and significant permit application from Steel Dynamics, Inc. - Structural and Rail Division ("SDI") relating to the operation of a mini-mill that produces structural steel.

Existing Approvals

SDI was issued a Part 70 Operating Permit (T183-17160-00030) on July 3, 2007.

The source has not received any other air approvals since July 3, 2007.

County Attainment Status

The source is located in Whitley County.

Pollutant	Status
PM ₁₀	Attainment
PM _{2.5}	Attainment or Unclassifiable
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Whitley County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Whitley County has been classified as attainment for PM_{2.5}. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM_{2.5} emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM_{2.5} emissions, it has directed states to regulate PM₁₀ emissions as a surrogate for PM_{2.5} emissions.
- (c) Whitley County has been classified as attainment for all other criteria pollutants and lead.

Therefore, these emissions were reviewed pursuant to the requirements for PSD, 326 IAC 2-2.

- (d) Since this source is classified as a steel mill, it belongs to one of the twenty-eight (28) listed PSD source categories, as specified in 326 IAC 2-2-1(gg)(1).
- (e) Fugitive Emissions
 Since this type of operation is in one of the twenty-eight (28) listed PSD source categories under 326 IAC 2-2, fugitive emissions are counted toward the determination of PSD applicability.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	Potential To Emit* (tons/year)
PM	Greater than 100
PM ₁₀	Greater than 100
SO ₂	Greater than 100
VOC	Greater than 100
CO	Greater than 100
NO _x	Greater than 100
Pb	Greater than 0.6

* According to the TSD for T183-17160-00030, issued July 3, 2007.

This existing source is a major stationary source under PSD (326 IAC 2-2), because PM/PM10, SO₂, VOC, CO and NO_x are emitted at a rate of 100 tons per year or more, and it is in one of the twenty-eight (28) listed PSD source categories, as specified in 326 IAC 2-2-1(gg)(1).

The table below summarizes the potential to emit HAPs for the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

HAPs	Potential To Emit* (tons/year)
A single HAP	Less than 10
Total HAPs	Less than 25

* According to the TSD for T183-17160-00030, issued July 3, 2007.

This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because HAP emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2003 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM _{2.5}	28
PM ₁₀	32
SO ₂	75
VOC	45
CO	630
NO _x	229
Pb	0.68

Description of Proposed Modification

The Office of Air Quality (OAQ) reviewed a Part 70 modification application from SDI (submitted on November 17, 2006, amended January 16, 2007, March 19, 2007 and May 30, 2007) regarding a request to:

- (1) Modify the existing EAFs Baghouse by increasing its airflow rating from 933,333 acfm to 1,800,000 acfm. The EAFs Baghouse (exhausting to stack 1) controls emissions from the existing Electric Arc Furnaces, EAF-1a and EAF-1b. The purpose of this modification is to reduce of the amount of criteria pollutant fugitives in the meltshop and improve the air quality of the meltshop. As a result, the amount of criteria pollutant emissions exhausted from stack 1 will increase.
- (2) Add a baghouse (LMS Baghouse) to control emissions from the existing Ladle Metallurgical Station (LMS). The LMS consists of two Ladle Metallurgical Furnaces (LMF). The new baghouse will have an airflow rating of 350,000 acfm and will exhaust to a new stack, stack 43. SDI also proposes to re-route the emissions of the Continuous Casters (CC) from the EAFs Baghouse to the LMS Baghouse. The addition of the LMS Baghouse will also reduce of the amount of criteria pollutant fugitives in the meltshop and improve the air quality of the meltshop.
- (3) Increase the thermal output of the tundish and ladle operations by:
 - (a) Increasing the nominal heat input rate of three (3) existing natural gas-fired tundish preheaters (ID# 3n, ID# 3h and ID# 3i) to 15 MMBtu/hr. Preheaters ID #3h and #3i are each currently 5 MMBtu/hr. Preheater ID #3n is currently 10 MMBtu/hr.
 - (b) Add the following natural-gas fired units:
 - (i) One (1) natural gas-fired tundish preheater, identified as ID# 3p, with a nominal heat input rate of 15 MMBtu/hr.
 - (ii) Four (4) natural gas-fired horizontal ladle preheaters, identified as ID# 3q, 3r, 3s, and 3t, with nominal heat input rate of 10 MMBtu/hr, each.
 - (iii) Two (2) natural gas-fired vertical ladle preheaters, identified as ID# 3u and 3v, with a nominal heat input rate of 10 MMBtu/hr, each.
 - (iv) Two (2) natural gas-fired tundish dryers, identified as ID# 3w and ID# 3x, with a nominal heat input rate of 5 MMBtu/hr, each.

Emissions from these units will be captured by the meltshop canopy and exhaust to the existing EAF Baghouse (stack 1) and/or the new LMS Baghouse (stack 43).
- (4) Remove the BACT requirement to maintain a partially enclosed, roofed structure to reduce particulate matter emissions during slag dumping.
- (5) Re-evaluate NOx BACT for ladle dryer ID#3l, tundish nozzle preheater ID#3m, and tundish dryer ID#3o. According to SDI, the existing NOx BACT for these units is not practically achievable.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	EAFs	125	20	1,800,000	275
43	LMS	100	11	350,000	275

Enforcement Issues

There are no pending enforcement actions.

Emission Calculations

See Appendix A (pages 1-3) of this document for detailed emission calculations.

Permit Level Determination – Part 70 Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE of the modification before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	Greater than 25
PM ₁₀	Greater than 15
PM _{2.5}	Greater than 15
SO ₂	Less than 40
VOC	Less than 40
CO	Less than 100
NO _x	Greater than 40

Pursuant to 326 IAC 2-7-10.5(f)(1), this modification is being performed through a Part 70 Significant Source Modification because this modification is subject to 326 IAC 2-2 (PSD); see the *Permit Level Determination – PSD* section of this document for more information. Pursuant to 326 IAC 2-7-12(d), the permit modification is being performed through a Part 70 Significant Permit Modification because this modification involves significant changes to existing permit terms and conditions.

Permit Level Determination – PSD

The table below summarizes the emissions increase, reflecting all limits, of the emission units associated with this modification. Any control equipment is considered federally enforceable only after issuance of this Part 70 Source modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Description	Emissions Increase (tons/year)						
	PM	PM ₁₀ / PM _{2.5}	SO ₂	VOC	CO	NO _x	HAPs
Modification to EAFs Baghouse (increase in airflow) ^{(a)(b)}	42.1	122	0	0	0	0	0
New LMS Baghouse ^{(a)(b)}	17.0	49.1	0	0	0	0	0
Thermal output increase of tundish and ladle operations ^{(c)(d)}	Less than 3.83	Less than 3.83	Less than 0.30	Less than 2.77	Less than 42.3	Less than 40	Less than 0.4
Revision to Slag dumping BACT ^(e)	NA	NA	0	0	0	0	NA
TOTAL	62.9	175	0.30	2.77	42.3	Less than 40	0.4
PSD Significant Level	25	15	40	40	100	40	NA

- (a) See Appendix A for the calculation of PM/PM10 emissions increases.
 (b) There are no increases in SO₂, VOC, CO and NO_x emissions. The emissions of these pollutants are the result of fuel combustion in the LMS and Caster. Neither the LMS nor Caster is being modified.
 (c) The fuel use of several units has been restricted to limit NO_x emissions and render the requirements of 326 IAC 2-2 not applicable.
 (d) The emissions from the new and modified tundish and ladle operations will exhaust to stack 1 and stack 43; the stacks for the EAFs and LMS. See the *State Rule Applicability - 326 IAC 2-2* section of this document for more information.
 (e) The proposed revisions to the existing BACT requirements for slag dumping are not expected to have an impact on emissions.
 NA - Not applicable.

This modification to an existing major stationary source is major because the emissions increases of PM, PM₁₀ and NO_x are greater than the respective PSD major source thresholds. Therefore, pursuant to 326 IAC 2-2-2, the modification is subject to the requirements of PSD.

Federal Rule Applicability Determination

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this modification.
- The existing EAFs are subject to the requirements of 40 CFR Part 60, Subpart AAa. The respective requirements have not been affected by this modification and are included in the Part 70 permit (T183-17160-00030), issued July 3, 2007.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 20; and 40 CFR Parts 61 and 63) included for this modification.
- (c) This existing source (a steel mini-mill) is a minor source for HAPs. Therefore, pursuant to 40 CFR 63.7681, the requirements of the National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries (326 IAC 20-92 and 40 CFR Part 63, Subpart EEEEE) are not included in this modification.
- (d) This source is subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). In order for this rule to apply, a pollutant-specific-emissions-unit at a source that requires a Part 70 or Part 71 permit must meet three criteria for a given pollutant:
- (1) The unit has potential emissions (before controls) of the applicable regulated air pollutant, equal or greater than 100 percent of the amount required for a source to be classified as a major source,

- (2) The unit is subject to an applicable emission limitation or standard for the applicable regulated air pollutant, and
- (3) The unit uses a control device to achieve compliance with the applicable emission limitation or standard.

EAF-1a and EAF-1b each have potential pre-control (but not post-control) emissions greater than 100 tons of PM₁₀ per year, are subject to 326 IAC 2-2, and require the use of a baghouse to achieve compliance with 326 IAC 2-2. Therefore, EAF-1a and EAF-1b are classified as "other" units with respect to CAM and are subject to the requirements of 40 CFR Part 64. Pursuant to 40 CFR 64.5(b), the Permittee is required to submit the information required under 40 CFR 64.4 regarding EAF-1a and EAF-1b as part of the Part 70 renewal application.

The LMS has potential pre-control (but not post-control) emissions greater than 100 tons of PM₁₀ per year, is subject to 326 IAC 2-2, and requires the use of a baghouse to achieve compliance with 326 IAC 2-2. Therefore, the LMS is classified as an "other" unit with respect to CAM and is subject to the requirements of 40 CFR Part 64. Pursuant to 40 CFR 64.5(b), the Permittee is required to submit the information required by 40 CFR 64.4 regarding the LMS as part of the Part 70 renewal application.

Each new tundish preheater, tundish dryer and ladle preheater has a PTE of each pollutant well below 100 tons per year. Therefore, these units are not subject to the requirements of 40 CFR Part 64.

State Rule Applicability Determination - Entire Modification

326 IAC 2-2 (Prevention of Significant Deterioration)

This source is located in Whitley County which is designated as attainment or unclassifiable for all criteria pollutants and lead. Based upon emission calculations (see Appendix A) completed by IDEM, the emissions increase of the modification exceeds the PSD significant threshold levels in 326 IAC 2-2-1 for particulate matter (PM), particulate matter of 10 microns or less (PM₁₀) and nitrogen oxides (NOx). Therefore, emissions of these pollutants have been reviewed pursuant to 326 IAC 2-2.

State Rule Applicability Determination – Electric Arc Furnaces (EAF)

326 IAC 2-2 (Prevention of Significant Deterioration)

The existing PM/PM₁₀ BACT requirements for the EAFs are as follows:

Pursuant to CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-0030, issued January 10, 2001 and 326 IAC 2-2:

- (a) Filterable PM/PM₁₀ emissions from the EAFs shall be controlled by a baghouse.
- (b) Filterable PM/PM₁₀ emissions from the EAF Baghouse shall not exceed 0.0018 grains per dry standard cubic feet and 14.4 pounds per hour based on a 3-hour block average.
- (c) The total PM/PM₁₀ (filterable and condensable PM₁₀) emissions from the EAF Baghouse shall not exceed 0.0052 grains per dry standard cubic feet and 41.6 pounds per hour based on a 3-hour block average.
- (d) There shall be no roof monitors in the melt shop.
- (e) The meltshop shall be located in a total enclosure subject to general ventilation that maintains the meltshop at a lower than ambient pressure to ensure in-draft through any doorway opening.

Ventilation air from the total enclosure shall be conveyed to the meltshop EAF Baghouse.

- (f) A segmented canopy hood shall be constructed above the EAFs. The canopy shall be divided into separate sections and the dampers operated in a manner that will promote good capture efficiency for the meltshop EAF Baghouse.
- (g) Visible emissions from the EAFs Baghouse stack (Stack 1) shall not exceed three percent (3%) opacity based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).

As indicated in the *Permit Level Determination – PSD* section of this document, an increase in the airflow of the EAFs baghouse is considered a major PSD modification and is subject to the requirements of 326 IAC 2-2.

The PSD provisions require that this major PSD modification be reviewed to ensure compliance with the National Ambient Air Quality Standards and apply the requirements of Best Available Control Technology (BACT). Specifically, 326 IAC 2-2-3 requires a BACT review, 326 IAC 2-2-4 and 326 IAC 2-2-5 require the evaluation of the modification's impact on air quality, 326 IAC 2-2-6 requires an assessment of increment consumption and 326 IAC 2-2-7 requires an evaluation of additional impacts. A review of these rules is included below:

326 IAC 2-2-3 (PSD: Best Available Control Technology)

Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

The following review of 326 IAC 2-2-4 through 2-2-7 pertains to the requirements for this entire modification and not just to the EAFs.

326 IAC 2-2-4 (PSD: Air Quality Analysis)

Pursuant to 326 IAC 2-2-4, an air quality analysis of the major modification is needed to determine if pre-construction monitoring is required. In most cases, post-construction monitoring can satisfy this requirement if the pre-construction monitoring threshold has been exceeded.

As described in Appendix C, the modeled PM₁₀ emissions increase of the modification was determined to cause a significant impact on air quality. However, the modeled post-modification ambient air concentration of PM₁₀ was less than the relevant monitoring de minimis concentrations of 10 ug/m³ (24-hr average). Therefore, pursuant to 326 IAC 2-2-4, this modification is not subject to the pre-construction air quality monitoring requirements of 326 IAC 2-2-4.

326 IAC 2-2-5 (PSD: Air Quality Impact)

Pursuant to 326 IAC 2-2-5, an air dispersion modeling study was performed using the U.S. EPA's AERMOD model (www.epa.gov/scram001/dispersion_prefrec.htm#aermod). This study was conducted in order to estimate the maximum ambient concentrations of PM₁₀ that result from the additional emissions associated with the modification. A detailed review of this study is included in Appendix C.

In summary, the estimated maximum ambient PM₁₀ impacts combined with the background PM₁₀ concentrations did not exceed the PM₁₀ NAAQS (for both 24-hr and annual averages).

326 IAC 2-2-6 (PSD: Increment Consumption)

Pursuant to 326 IAC 2-2-6(a), any modeling completed under 326 IAC 2-2-5 shall demonstrate that the increase in ambient pollutant concentration (resulting from the modification) does not exceed eighty percent (80%) of the available Maximum Allowable Increment (MAI) over the baseline concentration for that pollutant. See Appendix C for a review and demonstration of increment consumption.

In summary, the estimated impact of the modification indicated that it consumes less than 80% of the available PSD PM₁₀ increment.

326 IAC 2-2-7 (PSD: Additional Analyses)

Pursuant to 326 IAC 2-2-7(a), an analysis of the impairment to visibility, soils and vegetation was completed along with an assessment of the air quality impacts related to residential and commercial growth due to the modification. A detailed review of this study is included in Appendix C.

In summary, the results of the additional impact analysis conclude the operation of the facility will not have a significant impact on economic growth, soils, vegetation or visibility in the immediate vicinity or on any Class I area.

Note that the allowable emissions (pursuant to 326 IAC 2-2) from the EAFs have not changed as a result of the BACT review.

See the *Proposed Changes* section of this document for the proposed changes to the existing Part 70 permit.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

The particulate emissions from the EAFs are subject to BACT PM/PM₁₀ emission limitations under 326 IAC 2-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), these facilities are not subject to the requirements of 326 IAC 6-3-2.

State Rule Applicability Determination – Ladle Metallurgical Station (LMS) and Continuous Casters (CC)

326 IAC 2-2 (Prevention of Significant Deterioration)

SDI currently operates a ladle metallurgical station (LMS) and two (2) continuous casters (CC). The existing PM/PM₁₀ BACT requirements for these units are as follows:

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-0030, issued January 10, 2001 and 326 IAC 2-2, the filterable and condensable PM/PM₁₀ emissions from the ladle metallurgical station (LMS) and continuous casters (CC) shall be controlled by the EAFs Baghouse.

SDI's proposal to use the new LMS Baghouse to control emissions from the LMS and CC requires a revision to the existing PSD BACT requirement. Such a revision is considered a major PSD modification and is subject to the requirements of 326 IAC 2-2. Note that neither the LMS nor CC will be physically modified or altered in any way as a result of this modification. As a result, a change in actual emissions is not expected.

The PSD provisions require that this major PSD modification be reviewed to ensure compliance with the National Ambient Air Quality Standards and apply the requirements of Best Available Control Technology (BACT). Specifically, 326 IAC 2-2-3 requires a BACT review, 326 IAC 2-2-4 and 326 IAC 2-2-5 require the evaluation of the modification's impact on air quality, 326 IAC 2-2-6 requires an assessment of increment consumption and 326 IAC 2-2-7 requires an evaluation of additional impacts. A review of these rules is included below:

326 IAC 2-2-3 (PSD: Best Available Control Technology)

Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability - Electric Arc Furnaces (EAF)* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

T183-17160-00030, issued July 3, 2007, includes PSD BACT limitations for NO_x, SO₂, CO, VOC, lead, and mercury for the EAFs, LMS and Continuous Casters. Currently, those units exhaust to the EAFs Baghouse stack (stack 1) and the BACT limits are structured such that the limits apply to the EAFs Baghouse stack. Following this modification, the non-particulate emissions that currently exit the existing EAFs Baghouse stack (stack 1) will be split and will exhaust to the EAFs Baghouse stack (stack 1) and the new LMS Baghouse stack (stack 43). SDI cannot accurately

predict the emissions split to the stacks so the structure of all existing, non-particulate BACT limits that apply to the EAFs, LMS and Continuous Casters has been revised to apply to the EAFs Baghouse stack (stack 1) and the LMS Baghouse stack (stack 43). None of the BACT emission limitations have changed so a BACT review for the non-particulate emissions is not necessary.

See the *Proposed Changes* section of this document for the proposed changes to the existing Part 70 permit.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

The particulate emissions from the LMS and CC are subject to BACT PM/PM₁₀ emission limitations under 326 IAC 2-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), the LMS and CC are not subject to the requirements of 326 IAC 6-3-2.

State Rule Applicability Determination – Tundish and Ladle Operations
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326 IAC 2-2 (Prevention of Significant Deterioration)

As indicated in the *Permit Level Determination – PSD* section of this document, the addition or modification of tundish preheaters ID# 3p, 3h, 3i, 3n, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x will cause or contribute to a significant PM/PM₁₀ emissions increase pursuant to 326 IAC 2-2-1. As a result, the modification is considered a major PSD modification and is subject to the requirements of 326 IAC 2-2 for PM/PM₁₀.

As shown in Appendix A, the unrestricted NO_x PTE of the modification is greater than 40 tpy. Therefore, in order to render the requirements of 326 IAC 2-2 not applicable, the following limits have been added to the permit:

Pursuant to PSD SSM 183-23905-00030:

- (a) The total natural gas combusted by tundish preheaters ID# 3p, 3n, 3h and 3i shall be less than 241 million standard cubic feet (MMSCF) per twelve consecutive month period with compliance determined at the end of each month.
- (b) The NO_x emissions from tundish preheater ID# 3p, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall not exceed 0.1 pounds per MMBtu.

Compliance with these limits, and the NO_x BACT limits on preheaters ID# 3n, 3h and 3i, is equal to a NO_x emission increase from the modification of less than 40 tons per year and renders the requirements of 326 IAC 2-2 not applicable.

In addition, tundish preheater ID# 3n is subject to existing 326 IAC 2-2 requirements for PM/PM₁₀, VOC, SO₂, NO_x and CO. The following BACT requirements were established pursuant to SSM 183-18426-00030, issued November 18, 2005:

- (a) The Tundish Preheater (ID# 3n) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Preheater (ID# 3n).
- (c) The NO_x emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.05 pounds per MMBtu and 0.5 pounds per hour, based on a 3-hour block average.
- (d) The CO emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.084 pounds per MMBtu and 0.84 pounds per hour, based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0055 pounds per MMBtu and 0.055 pounds per hour, based on a 3-hour block average.
- (f) The SO₂ emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0006 pounds

per MMBtu and 0.006 pounds per hour, based on a 3-hour block average.

- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0076 pounds per MMBtu and 0.076 pounds per hour, based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

SDI's proposal to increase the capacity of preheater ID# 3n requires a change to existing PSD BACT requirements. Such a revision is considered a major PSD modification and is subject to the requirements of 326 IAC 2-2 for PM/PM₁₀, VOC, SO₂, NO_x and CO. The SO₂, VOC and CO emissions increase is well below the respective PSD significant thresholds so the requirements of 326 IAC 2-2-4 through 2-2-7 do not apply.

SDI has requested the re-evaluation of NO_x BACT for ladle dryer ID#3l, tundish nozzle preheater ID#3m, and tundish dryer ID#3o. According to SDI, the existing NO_x BACT for these units is not practically achievable. See Appendix B for more information. This change will not result in a change in emissions because there is no physical change to, or change in the operation of, these units.

The PSD provisions require that this major PSD modification be reviewed to ensure compliance with the National Ambient Air Quality Standards for PM₁₀ and apply the requirements of Best Available Control Technology (BACT). Specifically, 326 IAC 2-2-3 requires a BACT review, 326 IAC 2-2-4 and 326 IAC 2-2-5 require the evaluation of the modification's impact on air quality, 326 IAC 2-2-6 requires an assessment of increment consumption and 326 IAC 2-2-7 requires an evaluation of additional impacts. A review of these rules is included below:

326 IAC 2-2-3 (PSD: Best Available Control Technology)

Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability - Electric Arc Furnaces (EAF)* section of this document for a summary of the PM₁₀ requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

See the *Proposed Changes* section of this document for the proposed changes to the existing Part 70 permit.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

The new or modified tundish preheaters, tundish dryers, and ladle preheaters each have the potential to emit particulate less than 0.551 pounds per hour. Therefore, pursuant to 326 IAC 6-3-1(b)(14), those units are not subject to the requirements of 326 IAC 6-3-2.

326 IAC 8-1-6 (Volatile Organic Compounds – BACT)

Pursuant to 326 IAC 8-1-6, any facility constructed after January 1, 1980 that has a potential to emit greater than or equal to 25 tons of VOC per year shall reduce VOC emissions using BACT. Each new preheater and dryer has a potential to emit less than 25 tons of VOC per year. Therefore, the requirements of 326 IAC 8-1-6 do not apply to those units.

State Rule Applicability Determination – Slag Handling and Processing
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326 IAC 2-2 (Prevention of Significant Deterioration)

Condition D.6.3 of T183-17160-00030, issued July 3, 2007, includes opacity limitations, established as PSD BACT, for the various operations associated with SDI's slag handling and processing activities. That condition also requires compliance with a Fugitive Dust Control Plan. Pursuant to 326 IAC 2-2-3, Condition D.6.4 of that permit requires that the slag dumping pits be covered by a partially enclosed, roofed structure to reduce particulate matter emissions during slag dumping.

SDI has had considerable difficulty maintaining the roofed structure. The extreme heat from slag

dumping warps the steel canopy and continually weakens the structure. As a result, SDI proposes to remove the requirement to maintain the structure.

SDI proposes to revise an existing PSD BACT requirement. Such a revision is considered a major PSD modification and is subject to the requirements of 326 IAC 2-2.

The PSD provisions require that this major PSD modification be reviewed to ensure compliance with the National Ambient Air Quality Standards and apply the requirements of Best Available Control Technology (BACT). Specifically, 326 IAC 2-2-3 requires a BACT review, 326 IAC 2-2-4 and 326 IAC 2-2-5 require the evaluation of the modification's impact on air quality, 326 IAC 2-2-6 requires an assessment of increment consumption and 326 IAC 2-2-7 requires an evaluation of additional impacts. A review of these rules is included below:

326 IAC 2-2-3 (PSD: Best Available Control Technology)

Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability - Electric Arc Furnaces (EAF)* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7.

See the *Proposed Changes* section of this document for the proposed changes to the existing permit requirements.

Testing Requirements

Within 180 days after the EAFs Baghouse has been modified to accommodate an airflow rating of 1,800,000 acfm, the Permittee shall perform PM/PM₁₀ and opacity testing on the stack emissions from the EAFs Baghouse (Stack 1) in order to demonstrate compliance with the PM/PM₁₀ and opacity limits established by 326 IAC 2-2. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.

Within 180 days after startup of the LMS Baghouse, the Permittee shall perform PM/PM₁₀ and opacity testing on the emissions from the LMS Baghouse (Stack 43) in order to demonstrate compliance with the PM/PM₁₀ and opacity limits established by 326 IAC 2-2. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification and included in the permit are summarized in the following table:

Unit	Monitoring Requirement 1	Monitoring Requirement 2
EAF-1a and EAF-1b ^(a)	Continuous Opacity Monitoring	Bag Leak Detection
LMS and CC	Visible Emission Notations	Pressure Drop Monitoring
Tundish and Ladle Operations	(b)	
Slag Handling and Processing	Visible Emission Notations	None

(a) Additional monitoring is required pursuant to 40 CFR 60.274a - see Condition D.1.25 of the permit.
 (b) The tundish and ladle operations added or modified by this permit will exhaust to the stacks that exhaust emissions from the EAFs and LMS. Therefore, the compliance monitoring requirements for the EAFs and LMS effectively apply to the tundish and ladle operations.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 183-17160-00030 due to this proposed modification and the changes initiated by IDEM. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**.

- The phone number, facsimile number, and zip code for IDEM have been updated and the specific mail codes (MC) for each of the IDEM branches have been added to improve mail delivery, as follows:

100 North Senate Avenue
 Indianapolis, Indiana 46204-**2251**
 Telephone Number: ~~317-233-5674~~ **317-233-0178**
 Facsimile Number: ~~317-233-5967~~ **317-233-6865**

Permits Branch: **MC 61-53 IGCN 1003**
 Compliance Branch: **MC 61-53 IGCN 1003**
 Air Compliance Section: **MC 61-53 IGCN 1003**
 Compliance Data Section: **MC 61-52 IGCN 1003**
 Asbestos Section: **MC 61-52 IGCN 1003**
 Technical Support and Modeling: **MC 61-50 IGCN 1003**

- The title of the responsible official has been removed from Section A.1 of the permit. This information is maintained by IDEM and does not need to be listed in the permit. The Permittee must notify IDEM if the responsible official or the contact information for the responsible official changes. Condition A.1 has been revised to reflect this change.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary steel beam mini mill.

~~Responsible Official: _____ General Manager or designee (pursuant to 326 IAC 2-7-1(34))~~
 . . .

- Note that a number of conditions that are not affected by this modification have been revised slightly. This was done to clarify the existing requirements. The changes are shown in the following pages.

4. Condition B.13 was changed to clarify which permits have been superseded:

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5]

- (a) ~~All terms and conditions of permits established prior to T183-17160-00030 and issued pursuant to permitting programs approved into the state implementation plan have been either:~~
- ~~(1) incorporated as originally stated,~~
 - ~~(2) revised under 326 IAC 2-7-10.5, or~~
 - ~~(3) deleted under 326 IAC 2-7-10.5.~~
- (b) ~~Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.~~

Except for the respective construction authorizations, all terms and conditions of the following permits:

Permit Number	Issuance Date
PSD 183-12692-00030	January 10, 2001

Issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit.

5. United States Court of Appeals for the District of Columbia Circuit vacated the federal Clean Unit provisions in June 2005. As a result, all permit conditions pertaining to a unit's Clean Unit status have been removed from the permit.
6. The following changes have been made to the Part 70 permit to incorporate this modification:

[Section A]

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] 326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) Electric Arc Furnaces (EAFs) - - Stack 1
Two (2) single shell electric arc furnaces (EAFs), identified as EAF-1a and EAF-1b constructed in September 2002. These furnaces operate at a nominal combined rate of 300 tons of molten steel per hour and utilize a direct-shell evacuation control (DEC) system ("fourth hole" duct), an overhead roof exhaust system consisting of a capture system consisting of a segmented canopy hood, scavenger duct, and cross-draft partitions.

These furnaces utilize the following emission control technologies:

- (i) A DEC for carbon monoxide (CO) and volatile organic compounds (VOC) emissions;
- (ii) Low NO_x/oxyfuel burners (combustion control) for nitrogen oxide (NO_x) emissions; and
- (iii) A baghouse (identified as EAFs Baghouse, ID# 1) for **filterable** particulate (~~PM~~ and ~~PM_{4.0}~~) emissions.

The particulate and lead emissions escaping the DEC system are collected by the overhead roof exhaust system and exhaust through a stack identified as **the EAFs**

Baghouse stack (Stack 1).

There are no roof monitors in the meltshop.

- (b) Ladle Metallurgy Station (LMS) - - Stack 4 **43**
One (1) ladle metallurgy refining station (LMS) (ID# 3a) with a nominal rate of 300 tons of steel per hour.

The LMS particulate emissions are collected by the overhead roof exhaust system, **controlled by the LMS Baghouse** and exhaust through the ~~common EAF Baghouse stack (Stack 1)~~ **through the LMS Baghouse stack (Stack 43)**.

- (c) Continuous Casters (CCs) - - Stack 4 **43**
The two (2) continuous casters are limited to a nominal combined casting capacity of 300 tons of steel per hour.

(1) One (1) continuous caster (CC) (ID# 3k) with a nominal casting rate of 200 tons of steel per hour.

(2) One (1) continuous caster, identified as (ID# 42a), with a nominal casting rate of 200 tons of steel per hour.

The particulate emissions from the continuous casters are collected by the overhead roof exhaust system, **controlled by the LMS Baghouse** and exhaust through the ~~common electric arc furnace baghouse~~ **LMS Baghouse** stack (Stack 4 **43**).

- (d) Preheaters — ~~Stack 4~~

...

(3) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i), constructed in 2002 **and approved for modification in 2008**, each with a nominal heat input rate of ~~5~~ **15** MMBtu/hr.

(4) One (1) natural gas-fired Tundish Nozzle Preheater, identified as (ID# 3m), (~~to be constructed~~ **approved for construction** under SSM183-18426-00030), nominally rated at 10 MMBtu/hr.

(5) One (1) natural gas-fired Tundish Preheater, identified as (ID# 3n), constructed in 2002 **and approved for modification in 2008**, nominally rated at ~~40~~ **15** MMBtu/hr.

(6) **One (1) natural gas-fired low NO_x tundish preheater (ID# 3p), approved for construction in 2008, with a nominal heat input rate of 15 MMBtu/hr.**

(7) **Four (4) natural gas-fired low NO_x horizontal ladle preheaters (ID# 3q, 3r, 3s and 3t), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.**

(8) **Two (2) natural gas-fired low NO_x vertical ladle preheaters (ID# 3u and 3v), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.**

Combustion emissions from the preheaters exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the EAF Baghouse **stack (stack 1) and/or LMS Baghouse stack (stack 43)**.

- (e) Dryers — ~~Stack 4~~

...

- (3) One (1) natural gas-fired Tundish Dryer, ~~identified as (ID# 3o)~~, (to be constructed under SSM183-18426-00030) nominally rated at 5 MMBtu/hr.
- (4) **Two (2) natural gas-fired low NOx tundish dryers, (ID# 3w and 3x), approved for construction in 2008, with a nominal heat input rate of 5 MMBtu/hr, each.**

Combustion emissions from the dryers exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the ~~common~~ EAF Baghouse **stack (stack 1) and/or LMS Baghouse stack (stack 43)**.

[Section D.1]

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) Electric Arc Furnaces (EAFs) - - Stack 1
Two (2) single shell electric arc furnaces (EAFs), identified as EAF-1a and EAF-1b. These furnaces operate at a nominal combined rate of 300 tons of molten steel per hour and utilize a direct-shell evacuation control (DEC) system ("fourth hole" duct), an overhead roof exhaust system consisting of a segmented canopy hood, scavenger duct, and cross-draft partitions.

...

(iii) A baghouse (identified as EAFs Baghouse, ID# 1) for **filterable** particulate ~~(PM and PM₁₀)~~ emissions.

The particulate ~~and lead~~ emissions escaping the DEC system are collected by the overhead roof exhaust system and exhaust through a stack identified as **the EAFs Baghouse stack (Stack 1)**.

There are no roof monitors in the meltshop.
- (b) Ladle Metallurgy Station (LMS) - - Stack 4 **43**
One (1) ladle metallurgy refining station (LMS) (ID# 3a) with a nominal rate of 300 tons of steel per hour.

The LMS particulate emissions are collected by the overhead roof exhaust system, **controlled by the LMS Baghouse** and exhaust ~~through the common EAF Baghouse stack (Stack 1)~~ **through the LMS Baghouse stack (Stack 43)**.
- (c) Continuous Casters (CCs) - - Stack 4 **43**

...

The particulate emissions from the continuous casters are collected by the overhead roof exhaust system, **controlled by the LMS Baghouse** and exhaust through the ~~common electric arc furnace baghouse~~ **LMS Baghouse stack (Stack 4 43)**.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.1.1 EAFs Operation Limitation - PSD Best Available Control Technology [326 IAC 2-1.1-5] [326 IAC 2-2]

Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005, and **PSD SSM 183-23905-00030**, 326 IAC 2-1.1-5 (Air Quality Requirements) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall operate ~~the electric arc furnaces (EAFs) EAF-1a and EAF-1b~~ at a maximum combined rate of:

...

D.1.2 Nitrogen Oxides (NO_x) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the ~~EAF~~ **EAF-1a and EAF-1b** auxiliary burners shall be equipped with Low NO_x/oxyfuel burners.
- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the **total** NO_x emissions from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** shall not exceed 0.35 pounds per ton of steel produced and 105 pounds of NO_x per hour, based on a three (3) hour block average.

D.1.4 Particulate Matter (PM) [40 CFR Part 60, Subpart AAa]

Pursuant to 40 CFR Part 60, Subpart AAa (Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983) and PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, the filterable PM emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet.

D.1.5 Particulate Matter (PM/PM₁₀) PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to ~~PSD~~ CP 183-10097-00030, issued July 7, 1999, ~~amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001~~ **PSD SSM 183-23905-00030** and 326 IAC 2-2 (PSD – Control Technology Review; Requirements):

- (a) Filterable PM/PM₁₀ emissions from the ~~EAFs~~ **EAF-1a and EAF-1b** shall be controlled by ~~a the EAFs~~ **the Baghouse**.
- (b) ~~The total filterable~~ **The total** filterable PM/PM₁₀ emissions from the EAFs Baghouse shall not exceed 0.0018 grains per dry standard cubic feet and 14.4 pounds of filterable particulate per hour based on a 3-hour block average.
- (c) The total **filterable and condensable PM₁₀** ~~PM/PM₁₀ (filterable and condensable PM₁₀)~~ emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet and 41.6 pounds of ~~filterable and condensable particulate~~ per hour based on a 3-hour block average.
- (d) There shall be no roof monitors in the melt shop.
- (e) The meltshop shall be located in a total enclosure subject to general ventilation that maintains the meltshop at a lower than ambient pressure to ensure in-draft through any doorway opening.

Ventilation air from the total enclosure shall be conveyed to the ~~meltshop~~ **EAFs Baghouse**.
- (f) A segmented canopy hood shall be ~~constructed~~ **maintained** above the ~~EAFs~~ **EAF-1a and EAF-1b**. The canopy shall be divided into separate sections and the dampers operated in a manner that will promote good capture efficiency for the ~~meltshop~~ **EAFs Baghouse**.

D.1.6 Sulfur Dioxide (SO₂) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (**Prevention of Significant Deterioration (PSD)**), SO₂ emissions from the ~~EAFs~~ **EAF-1a and EAF-1b** shall be controlled in accordance with the Scrap Management Program (SMP) (Section E.2)
- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued

November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the **total** SO₂ emissions from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** shall not exceed 0.25 pounds per ton of steel and 75 pounds of SO₂ per hour based on a three (3) hour block average.

- (c) Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, and amended by ~~Permit Amendment~~ 183-18658-00030, issued May 5, 2004, and 326 IAC 2-1.1-11:

...

D.1.7 Carbon Monoxide (CO) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the CO emissions from ~~the EAF EAF-1a and EAF-1b~~ shall be controlled by thermal oxidation and **by** maintaining a negative pressure at the direct-shell evacuation control (DEC) system air gap.
- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the **total** CO emissions from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** shall not exceed 2.0 pounds per ton of steel produced and 600 pounds of CO per hour, based on a three (3) hour block average.

D.1.8 Carbon Monoxide (CO) [326 IAC 9-1]

Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 9-1 (Carbon Monoxide Emission Limits), the Permittee shall not allow the discharge of CO from ~~the an~~ EAF unless the waste gas stream is controlled by a direct-flame afterburner, boiler, or other approved method. The Permittee has elected thermal oxidation at the direct-shell evacuation control (DEC) system air gap.

D.1.9 Volatile Organic Compounds (VOC) - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the VOC emissions from ~~the EAFs EAF-1a and EAF-1b~~ shall be ~~minimized~~ **controlled** in accordance with the Scrap Management Program (SMP) (Section E.2) and shall be controlled by thermal oxidation and **by** maintaining a negative pressure at the direct-shell evacuation control (DEC) system air gap.
- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the **total** VOC emissions from the EAFs Baghouse **stack (stack 1)** and **LMS Baghouse stack (stack 43)** shall not exceed 0.09 pounds per ton of steel and 27 pounds of VOC per hour, based on a three (3) hour block average.
- (c) These VOC limits are as defined in 326 IAC 1-2-90.

D.1.10 Lead - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the lead emissions from ~~the EAFs EAF-1a and EAF-1b~~ shall be:
- (1) ~~minimized~~ **controlled** in accordance with the Scrap Management Program (SMP) (Section E.2), and
 - (2) controlled by a baghouse.

- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the **total** lead emissions from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** shall not exceed 0.00048 pounds per ton of steel and 0.144 pounds of lead per hour, based on a three (3) hour block average.

D.1.11 Mercury - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the mercury emissions from the EAFs **EAF-1a and EAF-1b** shall be:
- (1) ~~minimized~~ **controlled** in accordance with the Scrap Management Program (SMP) (Section E.2), and
 - (2) controlled by a baghouse.
- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the **total** mercury emissions from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** shall not exceed 5.21×10^{-4} pounds per ton of steel and 0.1563 pounds of mercury per hour, based on a three (3) hour block average.

D.1.12 Fluorides - PSD Best Available Control Technology [326 IAC 2-2]

- (a) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the fluoride emissions from the EAFs **EAF-1a and EAF-1b** shall be:
- (1) ~~minimized~~ **controlled** by using the granular type of Fluorspar, instead of the powdered type and
 - (2) controlled by a baghouse.
- (b) Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the **total** fluoride emissions from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** shall not exceed 0.01 pounds per ton of steel and 2.09 pounds of Fluorides per hour based on a three (3) hour block average.

D.1.13 Hazardous Air Pollutant (HAP) Limitations [326 IAC 2-1.1-4] [326 IAC 2-2] [326 IAC 2-4.1-1]

Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-4, the Permittee shall not allow:

- (a) Beryllium to be emitted from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** in a **total** quantity equal to or greater than 8.6×10^{-5} pounds per hour.
- (b) Manganese compounds to be emitted from the EAFs Baghouse stack (**stack 1**) and **LMS Baghouse stack (stack 43)** in a **total** quantity equal to or greater than 2.28 pounds per hour.

Compliance with the Beryllium limitation will assure that the requirements of 326 IAC 2-2 Prevention of Significant Deterioration (PSD) do not apply for beryllium, and compliance with these limitations will assure that the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control) do not apply to the source.

D.1.14 Visible Emission Limitations - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to **PSD CP 183-10097-00030**, issued July 7, 1999, ~~amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2004~~ **PSD SSM 183-23905-00030** and

326 IAC 2-2 (PSD – Control Technology Review; Requirements):

- (a) ~~Visible emissions from the EAFs Baghouse stack of the stack exhaust from the EAFs Baghouse~~ (Stack 1) shall not exceed three percent (3%) opacity based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).
- (b) Visible emissions of the stack exhaust from the LMS Baghouse (Stack 43) shall not exceed three percent (3%) opacity, based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).**
- ~~(c)~~ Particulate matter (PM and PM₁₀) emissions generated during furnace operations shall be captured by the melt shop roof canopy and ducted to the EAFs Baghouse such that visible emissions generated by ~~the EAFs EAF-1a and EAF-1b~~ shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9) when emitted from any building opening.
- ~~(d)~~ Inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Compliance with the above opacity limitations shall also satisfy the requirements of 326 IAC 5-1-2 (Opacity Limitations) under Condition C.2 - Opacity.

D.1.15 Visible Emission Limitations [40 CFR Part 60, Subpart AAa]

Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, and 40 CFR 20.272a(a), the Permittee shall not cause to discharge into the atmosphere from the EAFs any gases that:

- (a) Exit from the EAFs Baghouse **stack** (Stack 1) and exhibit three percent (3%) opacity or greater; and
- (b) Exit from the melt shop, and due solely to the operations of ~~the EAFs EAF-1a and EAF-1b~~, exhibit six percent (6%) opacity or greater.

Compliance with the above opacity limitations shall also satisfy the requirements of 326 IAC 5-1-2 (Opacity Limitations) under Condition C.2 - Opacity.

D.1.16 Ladle Metallurgy Station (LMS) and Continuous Casters (CC) - PSD Best Available Control Technology (BACT) [326 IAC 2-2]

~~Pursuant to CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the filterable and condensable PM/PM10 emissions from the ladle metallurgy (LMS) (ID# 3a) shall be controlled by the existing EAFs Baghouse.~~

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT):

- (a) PM/PM10 emissions from the Ladle Metallurgical Station (ID# 3a) and Continuous Casters (ID# 3k and ID# 42a) shall be controlled by the LMS Baghouse.**
- (b) The PM/PM10 emissions from the following facilities are limited as indicated in the table below:**

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions	
	(gr/dscf)	(lb/hr)	(gr/dscf)	(lb/hr)

Stack 43: Ladle Metallurgical Station (ID# 3a) and Continuous Casters (ID# 3k and ID# 42a)	0.0018	3.9	0.0052	11.2
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~~D.1.17 Continuous Casters (CCs) - PSD Best Available Control Technology (BACT) [326 IAC 2-2]~~

- ~~(a) Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005 and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the filterable and condensable PM/PM₁₀ emissions from the continuous-caster (CC) (ID# 3k) shall be controlled by the existing EAFs Baghouse.~~
- ~~(b) Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the filterable and condensable particulate matter (PM/PM₁₀) emissions from the second continuous-caster (ID# 42a) shall be controlled by the existing common EAFs Baghouse.~~

~~D.1.18 17 Preventive Maintenance Plan (PMP) [326 IAC 1-6-3] [326 IAC 2-7-5(13)]~~

~~Pursuant to PSD Permits CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 1-6-3, a Preventive Maintenance Plan (PMP), in accordance with Condition B.10 - Preventive Maintenance Plan (PMP) of this permit, is required for the EAFs **EAF-1a**, **EAF-1b** and LMS and their associated control devices.~~

~~D.1.19 Clean Unit [326 IAC 2-2.2]~~

~~(a) EAFs (EAF 1a and EAF 1b), LMS (ID# 3a), and CC (ID# 3k)~~

~~(1) Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2.2, the:~~

~~EAFs (EAF-1a and EAF-1b),
 LMS (ID# 3a), and
 CC (ID# 3k)~~

~~are classified as Clean Units for:~~

- ~~(A) NO_x,
 (B) PM/PM₁₀,
 (C) SO₂,
 (D) CO,
 (E) VOC,
 (F) Lead,
 (G) Mercury, and
 (H) Fluorides.~~

~~(2) The Clean Unit designations for the EAFs, LMS, and CC are in effect for ten (10) years from the issuance date of this permit.~~

~~(3) In order to maintain the clean unit designations for the EAFs, LMS, and CC, the Permittee shall comply with the following:~~

~~(4) The EAFs, LMS, and CC (designated as clean units) shall comply with the emissions limitations or work practice requirements in the following conditions as part of the BACT:~~

- ~~(A) D.1.1 EAF Operation Limitation (all pollutants),
 (B) D.1.2 Nitrogen Oxides (NO_x) - PSD BACT,~~

(C)	D.1.5	Particulate Matter (PM/PM₁₀) - PSD BACT,
(D)	D.1.6	Sulfur Dioxide (SO₂) - PSD BACT,
(E)	D.1.7	Carbon Monoxide (CO) - PSD BACT,
(F)	D.1.9	Volatile Organic Compounds (VOC) - BACT,
(G)	D.1.10	Lead - PSD BACT,
(H)	D.1.11	Mercury - PSD BACT,
(I)	D.1.12	Fluorides - PSD BACT,
(J)	D.1.14	Visible Emission Limitations - PSD BACT,
(K)	D.1.16	Ladle Metallurgy Station (LMS) PSD BACT,
(L)	D.1.17(a)	Continuous Casters (CCs) PSD BACT, and
(M)	D.1.22	CO and VOC CEMS Requirement.

~~(b)~~ ~~Continuous Caster (ID# 42a)~~

- ~~(1)~~ Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2.2 (Clean Unit), the continuous caster (ID# 42a) is classified as Clean Unit for filterable and condensable particulate matter (PM/PM₁₀) and opacity.
- ~~(2)~~ The Clean Unit designation for this continuous caster (ID# 42a) is in effect for ten (10) years from its initial start up.
- ~~(3)~~ In order to maintain the clean unit designation for the continuous caster (ID# 42a), the Permittee shall comply with the continuous caster (ID# 42a) filterable and condensable particulate matter (PM/PM₁₀) and Opacity PSD BACT limits.

~~(c)~~ ~~EAFs (EAF-1a and EAF-1b), LMS (ID# 3a), and CCs (ID# 3k and ID# 42a)~~

- ~~(1)~~ In addition, the EAFs, LMS, and CCs shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.
- ~~(2)~~ No physical change or change in the method of operation shall be undertaken at these emissions units that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.
- ~~(3)~~ The EAFs, LMS, and CCs (designated as clean units) are subject to the following requirements:
 - ~~(A)~~ Any project at these emissions units for which actual construction begins after the effective date of the clean unit designations and before the expiration date shall be considered to have occurred while the emissions units were clean units.
 - ~~(B)~~ If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.
 - ~~(C)~~ If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.

~~(D) — A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

D.1.20 18 ~~EAFs Baghouse Operation [326 IAC 2-2] [326 IAC 2-7-6(6)]~~

- (a)** Pursuant to ~~483-18426-00030~~ **PSD SSM 183-23905-00030** and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), **and in order to comply with Condition D.1.5**, the EAFs Baghouse shall be in operation and control emissions at all times ~~the electric arc furnaces (EAFs), Ladle Metallurgy Station (LMS) and/or Continuous Casters (CCs) are~~ **EAF-1a and/or EAF-1b are in operation.**
- (b)** Pursuant to **PSD SSM 183-23905-00030**, and in order to comply with **Conditions D.1.16 and D.1.17**, the **LMS Baghouse**, used to control particulate emissions, shall be in operation at all times ~~the Ladle Metallurgy Station (LMS), Continuous Caster ID# 3k and/or Continuous Caster ID# 42a are in operation.~~
- (c)** In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.24 19 ~~Testing Requirements [326 IAC 2-1.1-11] [40 CFR 60.275a]~~

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and 326 IAC 2-1.1-11:

- (a)** ~~NO_x~~
Pursuant to ~~SSM 183-18426-00030, issued November 21, 2005 and 326 IAC 2-1.1-11,~~
~~†The Permittee shall test for NO_x on the EAFs Baghouse stack (Stack 1) and the LMS Baghouse stack (Stack 43) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.~~
- ~~Pursuant to SSM 183-18426-00030 issued November 21, 2005, and 326 IAC 2-1.1-11,~~
~~†This NO_x test shall be repeated at least once every 2.5 years from the date of the last valid compliance demonstration.~~
- (b)** ~~Filterable and Condensable PM/PM₁₀~~
Pursuant to ~~SSM 183-18426-00030 issued November 21, 2005 and 326 IAC 2-1.1-11,~~ the Permittee shall test for **PM/PM₁₀** on the EAFs Baghouse stack (Stack 1) within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.
- ~~Pursuant to SSM 183-18426-00030 issued November 21, 2005 and 326 IAC 2-1.1-11 and 40 CFR 60.275a, this filterable and condensable PM/PM₁₀ test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration, utilizing 40 CFR Part 60, Appendix A, Method 5, Method 201 or 201A, Method 202 or other methods as approved by the Commissioner.~~

Within 180 days after the EAF Baghouse has been modified to accommodate an airflow rating of 1,800,000 acfm, the Permittee shall perform PM/PM₁₀ testing on the stack emissions from the EAF Baghouse (stack 1) in order to demonstrate compliance with the PM/PM₁₀ limits established by 326 IAC 2-2 and 40 CFR Part 60. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀.

Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.

- (c) **Within 180 days after startup of the LMS Baghouse, the Permittee shall perform PM/PM₁₀ and opacity testing on the emissions from the LMS Baghouse (stack 43) in order to demonstrate compliance with the PM/PM₁₀ and opacity limits established by 326 IAC 2-2. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.**

- (e d) Lead
~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~The Permittee shall stack test for lead on the EAFs Baghouse stack (Stack 1) **and the LMS Baghouse stack (Stack 43)**, utilizing Method 12 and a method detection level which is below the emission limit, within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~This lead test shall be repeated at least once every year from the date of the last valid compliance demonstration.

- (e e) SO₂
~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~The Permittee shall test for SO₂ on the EAFs Baghouse stack (Stack 1) **and the LMS Baghouse stack (Stack 43)** within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~This SO₂ test shall be repeated at least once every 2.5 years from the date of the last valid compliance demonstration.

- (e f) Mercury
~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~The Permittee shall test for mercury on the EAFs Baghouse stack (Stack 1) **and the LMS Baghouse stack (Stack 43)** within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~This mercury test shall be repeated at least once every year from the date of the last valid compliance demonstration.

- (f g) Fluorides
~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~The Permittee shall test for fluorides on the EAFs Baghouse stack (Stack 1) **and the LMS Baghouse stack (Stack 43)** within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~This fluorides test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

- (g h) Manganese
~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11, †~~The Permittee shall test for manganese on

the EAFs Baghouse stack (Stack 1) **and the LMS Baghouse stack (Stack 43)** within 60 days after achieving maximum capacity of the modification, but no later than 365 days after start up of the modification, utilizing methods as approved by the Commissioner.

~~Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-1.1-11,~~ This manganese test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

(h i) ~~All~~ Testing shall be conducted in accordance with C.9 - Performance Testing.

~~D.1.22~~ **20** CO and VOC Continuous Emission Rate Monitoring Requirement [326 IAC 2-1.1-11] [326 IAC 3-5]

- (a) Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, **and PSD SSM 183-23905-00030**, 326 IAC 2-1.1-11 and 326 IAC 3-5-1(d), the Permittee shall calibrate, certify, operate, and maintain a continuous emission monitoring system (CEMS) for measuring CO and VOC emissions rates in pounds per hour from the EAFs Baghouse stack (Stack 1) **and the LMS Baghouse stack (Stack 43)** in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.
- (b) Pursuant to PSD ~~Significant Source Modification Permit~~ SSM 183-18426-00030, issued November 18, 2005, **PSD SSM 183-23905-00030**, 326 IAC 2-1.1-11 and 326 IAC 3-5-4(a), the Permittee shall submit to IDEM, OAQ, within ninety (90) days after installation of a new monitor, a complete written continuous monitoring standard operating procedure (SOP). If revisions are made to an existing SOP, updates shall be submitted to IDEM, OAQ biennially.
- (c) Pursuant to PSD ~~Permits~~ CP 183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM 183-12692-00030, issued January 10, 2001, **PSD SSM 183-23905-00030** and 326 IAC 2-1.1-11, the Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

...

~~D.1.23~~ **21** Visible Emission Observations and Continuous Opacity Monitoring (COM) [326 IAC 2-1.1-11] [326 IAC 3-5] [40 CFR 60.273a]

- (a) Pursuant to 326 IAC 2-1.1-11, 326 IAC 3-5, ~~and 40 CFR 60.273a~~, and PSD ~~Permit Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005:-
- (1) The Permittee shall calibrate, certify, operate, and maintain a continuous monitoring system (COMS) to measure opacity from the EAFs Baghouse stack (Stack 1) in accordance with 326 IAC 3-5-2 and 3-5-3.

...

~~D.1.24~~ **22** Bag Leak Detection System (BLDS) [326 IAC 2-2]

Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005:

- (a) The Permittee shall operate continuous bag leak detection systems (BLDS) for the EAFs Baghouse. The bag leak detection systems (BLDS) shall meet the following requirements:

...

~~D.1.25~~ **23** Monitoring of Operations [40 CFR 60.274a]

Pursuant to CP183-10097-00030, issued July 7, 1999, amended by PSD ~~Significant Source Modification~~ SSM183-12692-00030, issued January 10, 2001 and 40 CFR 60.274a, the Permittee shall comply with the following monitoring requirements:

...

D.1.26 24 Monitoring for Total Building Enclosure [326 IAC 2-2]

Pursuant to PSD Permits CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001, and 326 IAC 2-2, the Permittee shall demonstrate compliance with the requirement to provide total enclosure of the meltshop using the procedures listed in either (1) or (2) below:-

...

D.1.25 Visible Emissions Notations

- (a) **Visible emission notations of the stack exhaust from the LMS Baghouse shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.**
- (b) **For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.**
- (c) **In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.**
- (d) **A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.**
- (e) **If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions and Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions and Exceedances, shall be considered a deviation from this permit.**

D.1.26 Parametric Monitoring

- (a) **The Permittee shall record the pressure drop across the LMS baghouse at least once per day when the respective facilities are in operation.**
- (b) **When for any one reading, the pressure drop is outside the normal range of 3.0 and 9.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.**
- (c) **The instrument used for determining the pressure drop shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.**

D.1.27 Record Keeping Requirements

...

- (d) Pursuant to PSD Permits CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001, and to document compliance with Conditions D.1.14 ~~Visible Emission Limitation PSD BACT,~~ and D.1.15 ~~Visible Emission Limitations,~~ the Permittee shall maintain records of visible emission readings at the EAFs Baghouse stack (Stack 1) **required by those conditions** and make the records available upon request to IDEM, OAQ, and the U.S. EPA.

...

- (i) **To document compliance with Condition D.1.25, the Permittee shall maintain records of the visible emission notations required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and**

the reason for the lack of visible emission notation (e.g. the process did not operate that day).

- (j) **To document compliance with Condition D.1.26, the Permittee shall maintain records of the pressure drop readings required by that condition. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**
- (i k) All records shall be maintained in accordance with Condition C.19 - General Record Keeping Requirements of this permit.
- (j l) Records necessary to demonstrate compliance shall be available not later than 30 days of the end of each compliance period.

D.1.28 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

...

- (d) Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001, and to document compliance with Conditions D.1.14 and D.1.15, the Permittee shall maintain records of visible emission readings required by those conditions and make the records available upon request to IDEM, OAQ, and the U.S. EPA. **To document compliance with Condition D.1.21, the Permittee shall maintain records of the COMS and visible emission notations required by that condition.**

[Section D.2]

SECTION D.2 FACILITY OPERATION CONDITIONS

<p>Facility Description [326 IAC 2-7-5(15)]</p> <p>Preheaters → Stack 4</p> <ul style="list-style-type: none">(1) Four (4) natural gas-fired low NO_x ladle preheaters (IDs 3b through 3e), constructed in 2002, each with a nominal heat input rate of 10 million British Thermal Units per hour (MMBtu/hr).(2) One (1) natural gas-fired low NO_x tundish nozzle preheater (ID# 3g), constructed in 2002, with a nominal heat input rate of 10 MMBtu/hr.(3) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i), constructed in 2002 and approved for modification in 2008, each with a nominal heat input rate of 5 15 MMBtu/hr.(4) One (1) natural gas-fired Tundish Nozzle Preheater, identified as (ID# 3m), to be constructed approved for construction under SSM183-18426-00030, nominally rated at 10 MMBtu/hr.(5) One (1) natural gas-fired Tundish Preheater, identified as (ID# 3n), constructed in 2002 and approved for modification in 2008, nominally rated at 40 15 MMBtu/hr.(6) One (1) natural gas-fired low NO_x tundish preheater (ID# 3p), approved for construction in 2008, with a nominal heat input rate of 15 MMBtu/hr.(7) Four (4) natural gas-fired low NO_x horizontal ladle preheaters (ID# 3q, 3r, 3s and 3t), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.

- (8) Two (2) natural gas-fired low NO_x vertical ladle preheaters (ID# 3u and 3v), approved for construction in 2008, with a nominal heat input rate of 10 MMBtu/hr, each.**

Combustion emissions from the preheaters exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the EAF Baghouse **stack (stack 1) and/or LMS Baghouse stack (stack 43)**.

Dryers — Stack 4

- (1) Two (2) natural gas-fired low NO_x ladle dryers (ID# 3f and ID# 3l), constructed in 2002, each with a nominal heat input rate of 10 MMBtu/hr.
- (2) One (1) natural gas-fired low NO_x tundish dryer (ID# 3j), constructed in 2002, with a nominal heat input rate of 5 MMBtu/hr.
- (3) One (1) natural gas-fired Tundish Dryer, identified as (ID# 3o), (to be constructed under SSM183-18426-00030) nominally rated at 5 MMBtu/hr.
- (4) Two (2) natural gas-fired low NO_x tundish dryers, (ID# 3w and 3x), approved for construction in 2008, with a nominal heat input rate of 5 MMBtu/hr, each.**

Combustion emissions from the dryers exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the ~~common~~ EAF Baghouse **stack (stack 1) and/or LMS Baghouse stack (stack 43)**.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.2.1 Nitrogen Oxides (NO_x) Emissions [326 IAC 2-2]

Pursuant to PSD SSM 183-23905-00030:

- (a) **The total natural gas combusted by tundish preheaters ID# 3p, 3n, 3h and 3i shall be less than 241 million standard cubic feet (MMSCF) per twelve consecutive month period with compliance determined at the end of each month.**
- (b) **The NO_x emissions from tundish preheater ID# 3p, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall not exceed 0.1 pounds per MMBtu.**

Compliance with these limits, and the NO_x BACT limits on preheaters ID# 3n, 3h and 3i, is equal to a NO_x emission increase from the modification of less than 40 tons per year and renders the requirements of 326 IAC 2-2 not applicable.

D.2.2 PM/PM10 Emissions - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the PM/PM10 emissions from tundish preheaters ID# 3p, 3h, 3i, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall:

- (1) **Be controlled by the EAFs Baghouse and/or the LMS Baghouse.**
- (2) **Not exceed 0.0076 pounds per MMBtu.**

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

Compliance requirements for the respective baghouses are included in Section D.1 of the permit.

D.2.4 3 Nitrogen Oxides (NO_x) - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD Permits CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the following **units**:

- (a) Four (4) natural gas-fired low NO_x ladle preheaters (ID#s 3b through 3e),
- (b) One (1) natural gas-fired low NO_x tundish nozzle preheater (ID# 3g),
- (c) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i),
- (d) One (1) natural gas-fired low NO_x ladle dryer (ID# 3f), and
- (e) One (1) natural gas-fired low NO_x tundish dryer (ID# 3j)

shall be limited to the use of low NO_x natural gas-fired burners and NO_x emissions shall not exceed 0.10 pound per MMBtu.

~~D.2.2 Clean Unit [326 IAC 2-2.2]~~

~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030 and 326 IAC 2-2.2, the following facilities:~~

- ~~———— (1) Four (4) natural gas-fired low NO_x ladle preheaters (ID#s 3b through 3e),~~
- ~~———— (2) One (1) natural gas-fired low NO_x tundish nozzle preheater (ID# 3g),~~
- ~~———— (3) Two (2) natural gas-fired low NO_x tundish preheaters (ID#s 3h and 3i),~~
- ~~———— (4) One (1) natural gas-fired low NO_x ladle dryer (ID# 3f), and~~
- ~~———— (5) One (1) natural gas-fired low NO_x tundish dryer (ID# 3j)~~

~~are classified as Clean Units for NO_x.~~

~~(b) The Clean Unit designations for the above mentioned facilities in Condition D.2.2(a) are in effect from September 9, 2004 to October 22, 2012.~~

~~The Clean Unit designations were based on the approval of the Affidavit of Construction for these units as permitted to be constructed under PSD Permits 193-10097-00030, issued on July 7, 1999 and PSD Permit 183-12692-00030, issued on January 10, 2001.~~

~~(c) In order to maintain the clean unit designations the above mentioned facilities in Condition D.2.2(a), the Permittee shall comply with the following:~~

- ~~(1) The emissions units designated as clean units shall comply with the emissions limitations or work practice requirements in Condition D.2.1 (Nitrogen Oxides (NO_x) - PSD Best Available Control Technology) as part of the BACT.~~

~~In addition the emissions unit shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~

- ~~(2) No physical change or change in the method of operation shall be undertaken at these emissions units that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.~~

~~(d) The above mentioned facilities in Condition D.2.2(a), designated as clean units, are subject to the following requirements:~~

- ~~(1) Any project at these emissions units for which actual construction begins after the effective date of the clean unit designations and before the expiration date shall~~

~~be considered to have occurred while the emissions units were clean units.~~

- (2) ~~If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.~~
- (3) ~~If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.~~
- (4) ~~A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

D.2.3 4 Ladle Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005, **PSD SSM 183-23905-00030** and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

- (a) The ~~new~~ second ladle dryer (ID# 3I) shall use natural gas as fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the second ladle dryer (ID# 3I).**
- ~~(b c)~~ The nitrogen oxides (NO_x) emissions from the ~~new~~ second ladle dryer (ID# 3I) shall not exceed ~~0.050~~ **0.1** pounds per MMBtu and ~~0.5 pounds of NO_x per hour,~~ based on a three (3) hour block average.
- ~~(c d)~~ The carbon monoxide (CO) emissions from the ~~new~~ second ladle dryer (ID# 3I) shall not exceed 0.084 pounds per MMBtu and 0.84 pounds of CO per hour, based on a three (3) hour block average.
- ~~(d e)~~ The volatile organic compound (VOC) emissions from the ~~new~~ second ladle dryer (ID# 3I) shall not exceed 0.0055 pounds per MMBtu and 0.055 pounds of VOC per hour, based on a three (3) hour block average.
- ~~(e f)~~ The sulfur dioxide (SO₂) emissions from the ~~new~~ second ladle dryer (ID# 3I) shall not exceed 0.0006 pounds per MMBtu and 0.006 pounds of SO₂ per hour based on a three (3) hour block average.
- ~~(f g)~~ The PM (filterable) emissions from the ~~new~~ second ladle dryer (ID# 3I) shall not exceed 0.0019 pounds per MMBtu and 0.019 pounds of filterable PM per hour, based on a three (3) hour block average.
- ~~(g h)~~ The PM₁₀ (filterable and condensable) emissions from the ~~new~~ second ladle dryer (ID# 3I) shall not exceed 0.0076 pounds per MMBtu and 0.076 pound of filterable and condensable PM₁₀ per hour, based on a three (3) hour block average.
- (i) Good combustion practices shall be observed.**

D.2.4 Clean Unit [326 IAC 2-2.2]

~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2, the new second ladle dryer (ID# 3l) is classified as Clean Unit for NO_x.~~

~~(b) The Clean Unit designation for this new second ladle dryer (ID# 3l) is in effect for ten (10) years from the initial start up of this dryer.~~

~~(c) In order to maintain the clean unit designation for new second ladle dryer, the Permittee shall comply with the following:~~

~~(1) The new second ladle dryer, designated as clean unit, shall comply with the emissions limitations or work practice requirements in Conditions D.2.3(a) and D.2.3(b) as part of the BACT.~~

~~In addition, the new second ladle dryer shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~

~~(2) No physical change or change in the method of operation shall be undertaken at this emissions unit that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.~~

~~(d) The new second ladle dryer (ID# 3l), designated as clean unit, is subject to the following requirements:~~

~~(1) Any project at this emissions unit for which actual construction begins after the effective date of the clean unit designation and before the expiration date shall be considered to have occurred while the emissions unit was clean unit.~~

~~(2) If a project at this emission unit does not cause the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designation remains unchanged.~~

~~(3) If a project causes the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designation shall expire upon issuance of the necessary permit modifications, unless the unit requalifies as clean unit. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designation shall expire immediately prior to the time when actual construction of this project begins.~~

~~(4) A project that causes emissions unit to lose its clean unit designation shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

D.2.5 Tundish Nozzle Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

~~Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:~~

~~(a) The Tundish Nozzle Preheater (ID# 3m) shall use natural gas as the primary fuel and propane as back up fuel.~~

~~(b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the~~

Tundish Nozzle Preheater (ID# 3m).

- (c) The NO_x emissions from the Tundish Nozzle Preheater (ID# 3m) shall not exceed ~~0.05~~ **0.1** pounds per MMBtu ~~and 0.5 pounds per hour~~, based on a 3-hour block average.

...

D.2.6 Tundish Preheater - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD ~~Significant Source Modification~~ SSM 183-18426-00030, issued November 18, 2005, **PSD SSM 183-23905-00030** and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Tundish Preheater (ID# 3n) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Preheater (ID# 3n).
- (c) The NO_x emissions from the Tundish Preheater (ID# 3n) shall not exceed ~~0.05~~ **0.01** pounds per MMBtu ~~and 0.5 pounds per hour~~, based on a 3-hour block average.
- (d) The CO emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.084 pounds per MMBtu ~~and 0.84 pounds per hour~~, based on a 3-hour block average.
- (e) The VOC emissions from the Tundish Preheater (ID# 3n) shall not exceed ~~0.0055~~ **0.0054** pounds per MMBtu ~~and 0.055 pounds per hour~~, based on a 3-hour block average.
- (f) The SO₂ emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0006 pounds per MMBtu ~~and 0.006 pounds per hour~~, based on a 3-hour block average.
- (g) The filterable and condensable particulate matter (PM/PM₁₀) emissions from the Tundish Preheater (ID# 3n) shall not exceed 0.0076 pounds per MMBtu ~~and 0.076 pounds per hour~~, based on a 3-hour block average.
- (h) Good combustion practices shall be observed.

D.2.7 Tundish Dryer - PSD Best Available Control Technology Limits [326 IAC 2-2]

Pursuant to PSD ~~Significant Source Modification~~ SSM183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall comply with the following PSD Best Available Control Technology (BACT) standards:

- (a) The Tundish Dryer (ID# 3o) shall use natural gas as the primary fuel and propane as back up fuel.
- (b) Low NO_x burners shall be installed and utilized to reduce the NO_x emissions from the Tundish Dryer (ID# 3o).
- (c) The NO_x emissions from the Tundish Dryer (ID# 3o) shall not exceed ~~0.05~~ **0.1** pounds per MMBtu ~~and 0.25 pounds per hour~~, based on a 3-hour block average.

...

~~D.2.8 Clean Units [326 IAC 2-2.2]~~

- ~~(a) Pursuant to PSD ~~Significant Source Modification~~ SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2 (Clean Unit):~~

~~(1) The Tundish Nozzle Preheater (ID# 3m) is classified as Clean Unit for NO_x.~~

~~(2) The Tundish Preheater (ID# 3n) is classified as Clean Unit for NO_x.~~

- ~~(3) The Tundish Dryer (ID# 3o) is classified as Clean Unit for NO_x.~~
- ~~(b) The Clean Unit designations for these preheaters and dryer are in effect for ten (10) years from their initial start ups.~~
- ~~(c) In order to maintain the clean unit designations for the:~~
- ~~(1) Tundish Nozzle Preheater (ID# 3m):
The Permittee shall comply with the Tundish Nozzle Preheater (ID# 3m) NO_x PSD BACT limit.~~
- ~~(2) Tundish Preheater (ID# 3n):
The Permittee shall comply with the Tundish Preheater (ID# 3n) NO_x PSD BACT limit.~~
- ~~(3) Tundish Dryer (ID# 3o):
The Permittee shall comply with the Tundish Dryer (ID# 3o) NO_x PSD BACT limit.~~
- ~~(4) In addition, the new second ladle dryer shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~
- ~~(5) No physical change or change in the method of operation shall be undertaken at this emissions unit that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.~~
- ~~(b) The new second ladle dryer (ID# 3l), designated as clean unit, is subject to the following requirements:~~
- ~~(1) Any project at this emissions unit for which actual construction begins after the effective date of the clean unit designation and before the expiration date shall be considered to have occurred while the emissions unit was clean unit.~~
- ~~(2) If a project at this emission unit does not cause the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designation remains unchanged.~~
- ~~(3) If a project causes the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designation shall expire upon issuance of the necessary permit modifications, unless the unit requalifies as clean unit. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designation shall expire immediately prior to the time when actual construction of this project begins.~~
- ~~(4) A project that causes emissions unit to lose its clean unit designation shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.2.9 8 Low NO_x Burners [326 IAC 2-2] [326 IAC 2-7-6(6)]

- (a)** Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)):
- (a 1)** The Tundish Nozzle Preheater (ID# 3m) shall utilize the low NO_x burners at all

times when the Tundish Nozzle Preheater (ID# 3m) is in operation.

- (b 2) The Tundish Preheater (ID# 3n) shall utilize the low NO_x burners at all times when the Tundish Preheater (ID# 3n) is in operation.
- (e 3) The Tundish Dryer (ID# 3o) shall utilize the low NO_x burners at all times when the Tundish Dryer (ID# 3o) is in operation.

- (b) Pursuant to PSD SSM 183-23905-00030, and in order to comply with Condition D.2.1(b), tundish preheaters ID# 3p, 3h, 3i, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall utilize low NO_x burners at all times the respective units are in operation.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.9 Record Keeping Requirements

To document compliance with Condition D.2.1, the Permittee shall maintain daily records of the fuel used by tundish preheaters ID# 3p, 3n, 3h and 3i. All records shall be maintained in accordance with Condition C.19 (General Record Keeping Requirements) of this permit.

D.2.10 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

[Section D.3]

D.3.3 Clean Unit [326 IAC 2-2-2]

- ~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030 and 326 IAC 2-2-2, the Reheat Furnace (RF) (ID# 2) is classified as a Clean Unit for NO_x.~~
- ~~(b) The Clean Unit designation for this RF (ID# 2) is in effect from September 9, 2004 to October 22, 2012.~~
- ~~The Clean Unit designation was based on the approval of the Affidavit of Construction for this unit as permitted to be constructed under PSD Permits CP183-10097-00030, issued on July 7, 1999 and PSD Permit SSM183-12692-00030, issued on January 10, 2001.~~
- ~~(c) In order to maintain the clean unit designation for the RF (ID# 2), the Permittee shall comply with the following:
 - ~~(1) The RF (ID# 2), designated as clean unit, shall comply with the emissions limitations or work practice requirements in Condition D.3.1 as part of the BACT:

In addition, the RF (ID# 2) shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~
 - ~~(2) No physical change or change in the method of operation shall be undertaken at this emissions unit that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission unit.~~~~
- ~~(d) The RF (ID# 2), designated as clean unit, is subject to the following requirements:
 - ~~(1) Any project at this emissions unit for which actual construction begins after the effective date of the clean unit designation and before the expiration date shall be~~~~

~~considered to have occurred while the emissions unit was clean unit.~~

- ~~(2) If a project at this emission unit does not cause the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designation remains unchanged.~~
- ~~(3) If a project causes the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designation shall expire upon issuance of the necessary permit modifications, unless the unit requalifies as clean unit. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designation shall expire immediately prior to the time when actual construction of this project begins.~~
- ~~(4) A project that causes emissions unit to lose its clean unit designation shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

~~D.3.5 Reheat Furnace Clean Unit [326 IAC 2-2.2]~~

- ~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2 (Clean Unit), the Reheat Furnace (ID# 41) is classified as a Clean Unit for NO_x.~~
- ~~(b) The Clean Unit designation for this Reheat Furnace (ID# 41) is in effect for ten (10) years from its initial start up.~~
- ~~(c) In order to maintain the clean unit designations for the Reheat Furnace, the Permittee shall comply with the Reheat Furnace (ID# 41) NO_x PSD BACT limit.~~

[Section D.4]

~~D.4.7 Clean Unit [326 IAC 2-2.2]~~

- ~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2, the LVD Boiler (ID# 40) is classified as a Clean Unit for NO_x.~~
- ~~(b) The Clean Unit designation for this LVD Boiler (ID# 40) is in effect from September 9, 2004 to June 5, 2013.~~

~~The Clean Unit designation was based on the approval of the Affidavit of Construction for this unit as permitted to be constructed under PSD Permit SSM183-15170-00030 was issued on May 31, 2002.~~

- ~~(c) In order to maintain the clean unit designation for the LVD Boiler (ID# 40), the Permittee shall comply with the following:~~
- ~~(1) The LVD Boiler (ID# 40), designated as a clean unit, shall comply with the emissions limitations or work practice requirements in the following conditions as part of the BACT:~~
- ~~(A) D.4.2 NO_x Limitations PSD BACT, and~~
- ~~(B) D.4.6 Operating Parameters.~~

~~In addition, the LVD Boiler (ID# 40) shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~

- (2) ~~No physical change or change in the method of operation shall be undertaken at this emissions unit that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission unit.~~
- (d) ~~The LVD Boiler (ID# 40), designated as a clean unit, is subject to the following requirements:~~
- (1) ~~Any project at this emissions unit for which actual construction begins after the effective date of the clean unit designation and before the expiration date shall be considered to have occurred while the emissions unit was clean unit.~~
- (2) ~~If a project at this emission unit does not cause the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designation remains unchanged.~~
- (3) ~~If a project causes the need for a change in the emission limitations or work practice requirements in this permit for this unit that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designation shall expire upon issuance of the necessary permit modifications, unless the unit requalifies as clean unit. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designation shall expire immediately prior to the time when actual construction of this project begins.~~
- (4) ~~A project that causes emissions unit to lose its clean unit designation shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

[Section D.5]

~~D.5.3 Clean Unit [326 IAC 2-2.2]~~

- ~~(a) Pursuant to PSD Permit Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2, the nine (9) storage silos are classified as Clean Units for PM/PM₁₀.~~
- ~~(b) The Clean Unit designations for these nine (9) storage silos are in effect from September 9, 2004 to October 22, 2012.~~
- ~~The Clean Unit designations were based on the approval of the Affidavit of Construction for these units as permitted to be constructed under PSD Permits 193-10097-00030, issued on July 7, 1999 and PSD Permit 183-12692-00030, issued on January 10, 2001.~~
- (c) ~~In order to maintain the clean unit designations for the nine (9) storage silos, the Permittee shall comply with the following:~~
- (1) ~~The nine (9) storage silos, designated as clean units, shall comply with the emissions limitations or work practice requirements in the following conditions as part of the BACT:~~
- (A) ~~D.5.1 Particulate Matter (PM/PM₁₀) - PSD Best Available Control Technology, and~~
- (B) ~~D.5.2 Visible Emission Limitation - PSD Best Available Control Technology.~~
- ~~In addition, the nine (9) storage silos shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~

- (2) ~~No physical change or change in the method of operation shall be undertaken at these emissions units that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.~~
- (d) ~~The nine (9) storage silos, designated as clean units, are subject to the following requirements:~~
- (1) ~~Any project at these emissions units for which actual construction begins after the effective date of the clean unit designations and before the expiration date shall be considered to have occurred while the emissions units were clean units.~~
- (2) ~~If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.~~
- (3) ~~If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.~~
- (4) ~~A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

[Section D.6]

D.6.1 Annual Slag Production Limitation - PSD Best Available Control Technology [326 IAC 2-1.1-5]
[326 IAC 2-2]

Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005, **PSD SSM 183-23905-00030**, 326 IAC 2-1.1-5 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall not process more than 438,000 tons of slag per 12-consecutive month period, with compliance determined at the end of each month.

D.6.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to PSD Permit SSM 183-18426-00030, November 21, 2005 and 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), the combined filterable particulate emissions from the crushing, screening, conveyor transfer points, continuous stacking operations shall not exceed 60.96 pounds per hour.

D.6.3 Visible Emission Limitations - PSD Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD Permits CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2004 **PSD SSM 183-23905-00030**, and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the fugitive dust emissions from the various slag handling and processing operations shall be controlled in accordance with the Fugitive Dust Control Plan (FDCP) (**included in Section E.1 of this permit**) such that the following visible emission limitations are not exceeded:

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity) (six (6) minute average)
Transferring of skull slag to slag pot	10 %
Pouring of liquid slag from EAF or LMS to slag pots	3% (on any building opening)
Dumping of liquid slag from slag pot to slag pit and cooling	3 %
Transferring of skull slag from slag pot to skull pit	5 %
Digging skull slag pits	5 %
Digging slag pits	3 %
Stockpiling of slag adjacent to the grizzly feeder	3 %
Wind erosion of stockpiles	3 %
Crushing	3 %
Screening	3 %
Conveyor transfer points	3 %
Continuous stacking of processed slag to stockpiles	3 %
Loadout of processed slag from stockpiles to haul trucks for shipment	3 %
Inplant hauling of slag pots (filled) and processed slag	3 %

~~D.6.4 Slag Dumping Fugitive Particulate Matter (PM/ PM₁₀) - PSD Best Available Control Technology [326 IAC 2-2]~~

~~Pursuant to PSD Permits CP183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM183-12692-00030, issued January 10, 2001 and 326 IAC 2-2 (PSD - Control Technology Review; Requirements), the slag dumping pits shall be covered by a partially enclosed, roofed structure to reduce particulate matter emissions during slag dumping. The roof shall extend over the entire slag pit area and past the dump stations. The sides of the structure shall extend sufficiently downward from the roof, taking into account:~~

- ~~(a) reduction of PM emissions during dumping and partial shielding of prevailing winds; and~~
- ~~(b) dissipation of heat and consideration of safety concerns within the structure.~~

~~D.6.5 Clean Unit [326 IAC 2-2.2]~~

~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2, the slag handling and processing operations are classified as Clean Units for PM/PM₁₀.~~

~~(b) The Clean Unit designation for these slag handling and processing operations are in effect for ten (10) years from the issuance date of this permit.~~

~~(c) In order to maintain the clean unit designations for the slag handling and processing operations, the Permittee shall comply with the following:~~

~~(1) The slag handling and processing operations, designated as clean units, shall comply with the emissions limitations or work practice requirements in the following conditions as part of the BACT:~~

~~(A) D.6.1 Annual Slag Production Limitation,~~

~~(B) D.6.3 Visible Emission Limitations BACT, and~~

~~(C) D.6.4 Slag Dumping Fugitive Particulate Matter.~~

~~In addition, the slag handling and processing operations shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~

~~(2) No physical change or change in the method of operation shall be undertaken at these operations that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the operations.~~

~~(d) The slag handling and processing operations, designated as clean units, are subject to the following requirements:~~

~~(1) Any project at these emissions units for which actual construction begins after the effective date of the clean unit designations and before the expiration date shall be considered to have occurred while the emissions units were clean units.~~

~~(2) If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.~~

~~(3) If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.~~

~~(4) A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

D.6.6 4 Preventive Maintenance Plan (PMP) [326 IAC 1-6-3] [326 IAC 2-7-5(13)]

Pursuant to PSD Permits CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001 and 326 IAC 1-6-3, a Preventive Maintenance Plan (PMP), in accordance with Condition B.10 - Preventive Maintenance Plan (PMP), of this permit, is required for the slag handling and processing operations associated control devices.

D.6.7 5 Testing Requirements [326 IAC 2-2]

Pursuant to PSD Permits CP 183-10097-00030, issued July 7, 1999, amended by PSD Significant Source Modification SSM 183-12692-00030, issued January 10, 2001, the Permittee shall perform a compliance test for opacity on the above-mentioned slag handling and processing operations, utilizing 40 CFR Part 60, Appendix A, Method 9, or other methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

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D.6.8 6 Visible Emissions Notations

...

D.6.9 7 Record Keeping Requirements [326 IAC 2-7-19]

Pursuant to PSD Significant Source Modification SSM 183-18426-00030, issued November 18, 2005, the Permittee shall maintain records of the following:

...

- (b) To document compliance with ~~Condition D.6.8~~ **D.6.6**, the Permittee shall maintain a **daily** records of the ~~once per day~~ visible emission notations **required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).**

...

D.6.40 8 Reporting Requirements [326 IAC 2-1.1-11]

Pursuant to SSM 183-18426-00030, issued, November 21, 2005, and to document compliance with Condition D.6.1 - Annual Slag Production Limitation, the Permittee shall submit a quarterly summary of the amount of slag processed, using the reporting form (Slag Production Report) located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported and in accordance with Section C.19 - General Reporting Requirements of this permit.

[Section D.7]

D.7.3 Clean Unit [326 IAC 2-2.2]

~~(a) Pursuant to PSD Significant Source Modification SSM183-18426-00030, issued November 18, 2005 and 326 IAC 2-2.2, the transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles are classified as Clean Units for PM/PM₁₀.~~

~~(b) The Clean Unit designations for these transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles are in effect from September 9, 2004 to October 22, 2012.~~

~~The Clean Unit designations were based on the approval of the Affidavit of Construction for these units as permitted to be constructed under PSD Permits CP13-10097-00030, issued on July 7, 1999 and PSD Permit SSM183-12692-00030, issued on January 10, 2001.~~

~~(c) In order to maintain the clean unit designations for the transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles, the Permittee shall comply with the following:~~

~~(1) The transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles (designated as clean units) shall comply with the emissions limitations or work practice requirements in the following conditions as part of the BACT:~~

~~(A) D.7.1 Fugitive Dust Emission Limitations – Best Available Control Technology, and~~

~~(B) D.7.2 Visible Emission Limitations – Best Available Control Technology.~~

~~In addition, the transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit.~~

~~(2) No physical change or change in the method of operation shall be undertaken at these emissions units that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.~~

~~(d) The transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles (designated as clean units) are~~

subject to the following requirements:

- (1) ~~Any project at these emissions units for which actual construction begins after the effective date of the clean unit designations and before the expiration date shall be considered to have occurred while the emissions units were clean units.~~
- (2) ~~If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.~~
- (3) ~~If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.~~
- (4) ~~A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).~~

[Reports]

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Steel Dynamics, Inc. - Structural and Rail Division
Source Address: 2601 County Road 700 East, Columbia City, IN 46725
Mailing Address: 2601 County Road 700 East, Columbia City, IN 46725
Part 70 Permit No.: T183-17160-00030
Facility: Tundish preheaters ID# 3p, 3n, 3h and 3i
Parameter: Fuel consumption
Limit: The natural gas combusted by tundish preheaters ID# 3p, 3n, 3h and 3i shall be less than 241 million standard cubic feet (MMSCF) per twelve consecutive month period with compliance determined at the end of each month.

QUARTER :

YEAR:

Month	Natural gas consumption (MMSCF)	Natural gas consumption (MMSCF)	Natural gas consumption (MMSCF)
	This Month	Previous 11 Months	12 Month Total

Month 1			
Month 2			
Month 3			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 183-23905-00030. The operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Permit Modification No. 183-24522-00030. The staff recommends to the Commissioner that this Part 70 Significant Source Modification and Significant Permit Modification be approved.

Appendix A: Emission Calculations

**PM/PM10 Emissions
From an EAF Baghouse**

Company Name: Steel Dynamics, Inc. - Structural and Rail Division
Address : 2601 County Road 700 East, Columbia City, IN 46725
SSM: 183-23905-00030
Reviewer: ERG/BS
Date: 11/1/07

Description: Airflow rating increase of the EAF Baghouse

Nominal Production Rate: 300 ton metal/hr
PM Control Equipment: Baghouse (Stack 1)
Filterable + Condensable PM10 Outlet Grain Loading: 0.0052 grains/dscf
Filterable PM Outlet Grain Loading: 0.0018 grains/dscf
Current Stack Temp: 200 deg F
New Stack Temp: 250 deg F
Existing Air Flow Rate: 1,166,250 ascf/min
Existing Air Flow Rate: 933,000 dscf/min
Moisture Content of Exhaust: 2 %
New Air Flow Rate: 1,800,000 ascf/min
New Air Flow Rate: 1,311,820 dscf/min

Existing Potential to Emit PM*/PM10* After Control:

Hourly PM10* Emissions = gr/dscf x air flow rate (dscf/min) x 60 (min/hr) x 1/7000 (lb/gr) **41.6 lbs/hr**
Annual PM10* emissions = hourly PM10 emissions x 8760 (hr/yr) x 1/2000 (ton/lb) = **182.1 tons/yr**
Hourly PM* Emissions = gr/dscf x air flow rate (dscf/min) x 60 (min/hr) x 1/7000 (lb/gr) **14.4 lbs/hr**
Annual PM* emissions = hourly PM emissions x 8760 (hr/yr) x 1/2000 (ton/lb) = **63.0 tons/yr**

NEW Potential to Emit PM*/PM10* After Control:

Hourly PM10* Emissions = gr/dscf x air flow rate (dscf/min) x 60 (min/hr) x 1/7000 (lb/gr) **58.5 lbs/hr**
Annual PM10* emissions = hourly PM10 emissions x 8760 (hr/yr) x 1/2000 (ton/lb) = **256.1 tons/yr**
Hourly PM* Emissions = gr/dscf x air flow rate (dscf/min) x 60 (min/hr) x 1/7000 (lb/gr) **20.2 lbs/hr**
Annual PM* emissions = hourly PM emissions x 8760 (hr/yr) x 1/2000 (ton/lb) = **88.6 tons/yr**

PM*/PM10* Emissions Increase: ⁽¹⁾

Annual PM10* emissions = New PTE After Control (tons/yr) - Existing PTE After Control (tons/yr) **74.0 tons/yr**
Annual PM* emissions = New PTE After Control (tons/yr) - Existing PTE After Control (tons/yr) **25.6 tons/yr**

(1) The emissions increase is equal to the difference between projected actual emissions and baseline actual emissions. Projected actual emissions are equal to the potential to emit (after control) of the modified baghouse because the emissions from a baghouse are dependent on baghouse design. Baseline actual emissions are equal to the potential to emit (after control) of the existing baghouse configuration because the source did not provide actual emission data.

NOTE: PM* = Filterable PM/PM10; PM10* = Filterable and Condensable PM10

Appendix A: Emission Calculations

**PM/PM10 Emissions
From a LMS Baghouse**

Company Name: Steel Dynamics, Inc. - Structural and Rail Division
Address : 2601 County Road 700 East, Columbia City, IN 46725
SSM: 183-23905-00030
Reviewer: ERG/BS
Date: 11/1/07

Description: New LMS Baghouse

Nominal Production Rate: 300 ton metal/hr
PM Control Equipment: Baghouse (Stack 43)
Filterable + Condensable PM10 Outlet Grain Loading: 0.0052 grains/dscf
Filterable PM Outlet Grain Loading: 0.0018 grains/dscf
Stack Temp: 275 deg F
New Air Flow Rate: 350,000 ascf/min
New Air Flow Rate: 251,429 dscf/min
Control Efficiency: 99.0%

Potential to Emit PM*/PM10* After Control: ⁽¹⁾

Hourly PM10* Emissions	= gr/dscf x air flow rate (dscf/min) x 60 (min/hr) x 1/7000 (lb/gr)	11.2 lbs/hr
Annual PM10* emissions	= hourly PM10 emissions x 8760 (hr/yr) x 1/2000 (ton/lb) =	49.1 tons/yr
Hourly PM* Emissions	= gr/dscf x air flow rate (dscf/min) x 60 (min/hr) x 1/7000 (lb/gr)	3.9 lbs/hr
Annual PM* emissions	= hourly PM emissions x 8760 (hr/yr) x 1/2000 (ton/lb) =	17.0 tons/yr

(1) The emissions increase is equal to the difference between projected actual emissions and baseline actual emissions. Projected actual emissions are equal to the potential to emit (after control) of the new baghouse because the emissions from a baghouse are dependent on baghouse design. Baseline actual emissions are zero because the baghouse is new.

NOTE: PM* = Filterable PM/PM10; PM10* = Filterable and Condensable PM10

**Appendix A: Emissions Calculations
Natural Gas Combustion**

**Company Name: Steel Dynamics, Inc. - Structural and Rail Division
Address : 2601 County Road 700 East, Columbia City, IN 46725
SSM: 183-23905-00030
Reviewer: ERG/BS
Date: 11/1/07**

Description: New or modified tundish and ladle preheaters and dryers

Added Heat Input Capacity⁽²⁾

110.0 MMBtu/hr

Potential Throughput: 944.7 MMCF/yr 107,843 CF/hr

Criteria Pollutants

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor (lb/MMCF)	1.9	7.6	0.6	100.0	5.5	84.0
Unrestricted Potential to Emit (ton/yr)	0.90	3.59	0.28	47.24	2.60	39.68

(1) Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

(2) This is the total heat input capacity increase for the modification to the tundish and ladle operations described in the TSD.

METHODOLOGY

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Potential to Emit (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) x 1/2000 ton/lb

HAPs

HAPs - Organics

	Benzene	Dichloro-benzene	Formaldehyde	Toluene
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	3.4E-03
Potential to Emit (tons/yr)	9.919E-04	5.668E-04	3.543E-02	1.606E-03

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor (lb/MMCF)	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential to Emit (tons/yr)	2.362E-04	5.196E-04	6.613E-04	1.795E-04	9.919E-04

Total HAPs 0.04 tons/yr

METHODOLOGY

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Potential to Emit (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) x 1/2000 ton/lb

**Appendix A: Emissions Calculations
Natural Gas Combustion**

**Company Name: Steel Dynamics, Inc. - Structural and Rail Division
Address : 2601 County Road 700 East, Columbia City, IN 46725
SSM: 183-23905-00030
Reviewer: ERG/BS
Date: 11/1/07**

Description: Development of natural gas limit

As shown on page 3 of the calculations, the unrestricted NOx PTE of the modification is greater than 40 tpy. Therefore, in order to render the requirements of 326 IAC 2-2 not applicable, SDI has elected to limit the total fuel consumed by the tundish preheaters in order to limit NOx emissions. Calculations showing the net increase in NOx emissions are provided below:

Unit	Existing Capacity (MMBtu/hr)	Proposed Capacity (MMBtu/hr)	Baseline Fuel Use (MMCF/yr)	Proposed Fuel Use (MMCF/yr)	Baseline NOx Emission Rate (lb/MMCF)	Proposed NOx Emission Rate (lb/MMCF)	Projected Actual NOx Emissions (tpy)	Baseline Actual NOx Emissions (tpy) ^(c)	Increase in NOx Emissions (tpy)	Note
Horiz. Ladle Preheater 3q	-	10	-	85.9	-	100	4.29	0	4.29	(a)
Horiz. Ladle Preheater 3r	-	10	-	85.9	-	100	4.29	0	4.29	
Horiz. Ladle Preheater 3s	-	10	-	85.9	-	100	4.29	0	4.29	
Horiz. Ladle Preheater 3t	-	10	-	85.9	-	100	4.29	0	4.29	
Vert. Ladle Preheater 3u	-	10	-	85.9	-	100	4.29	0	4.29	
Vert. Ladle Preheater 3v	-	10	-	85.9	-	100	4.29	0	4.29	
Tundish Dryer 3w	-	5	-	42.9	-	100	2.15	0	2.15	
Tundish Dryer 3x	-	5	-	42.9	-	100	2.15	0	2.15	
Tundish Preheater 3p	-	15	-	241.0	-	100	12.1	0	9.9	(b)
Tundish Preheater 3n	10	15	42.9		50			1.07		
Tundish Preheater 3h	5	15	21.5		50			0.54		
Tundish Preheater 3i	5	15	21.5		50			0.54		
Total Net Increase in NOx Emissions from modification (tpy):									39.96	

(a) These new units will be able to operate at design capacity.

(b) SDI has proposed to limit the natural gas consumption of tundish preheaters 3p, 3n, 3h and 3i to less than 241 MMCF per year.

(c) Baseline actual emissions are based on a preheater capacity factor of 50%.

METHODOLOGY

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Fuel Use (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hr/yr) x 1 MMCF/1,020 MMBtu

Emissions (tons/yr) = Capacity (MMCF/yr) x Emission Rate (lb/MMCF) x 1/2000 ton/lb

Indiana Department of Environmental Management Office of Air Quality

APPENDIX B to the Technical Support Document (TSD) - BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION

Source Information and Description of Modification

Source Name:	Steel Dynamics, Inc. - Structural and Rail Division
Source Location:	2601 County Road 700 East, Columbia City, IN 46725
County:	Whitley
SIC Code:	3312
Operation Permit No.:	T183-17160-00030
Operation Permit Issuance Date:	July 3, 2007
Significant Source Modification No.:	183-23905-00030
Significant Permit Modification No.:	183-24522-00030
Permit Reviewer:	ERG/BS

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following federal BACT (Best Available Control Technology) review for a major modification relating to a mini-mill that produces structural steel owned and operated by Steel Dynamics, Inc. ("SDI") located in Columbia City, Indiana. The following emission units will be added or modified, pursuant to 326 IAC 2-2, in order to complete this modification:

Modifications to existing source

- (a) Modify the existing EAFs Baghouse by increasing its airflow rating from 933,333 acfm to 1,800,000 acfm. The EAFs Baghouse (exhausting to stack 1) controls emissions from the existing Electric Arc Furnaces, EAF-1a and EAF-1b. The purpose of this modification is to reduce of the amount of criteria pollutant fugitives in the meltshop and improve the air quality of the meltshop. As a result, the amount of criteria pollutant emissions exhausted from stack 1 will increase.
- (b) Add a baghouse (LMS Baghouse) to control emissions from the existing Ladle Metallurgical Station (LMS). The LMS consists of two Ladle Metallurgical Furnaces (LMF). The new baghouse will have an airflow rating of 350,000 acfm and will exhaust to a new stack, stack 43. SDI also proposes to re-route the emissions of the Continuous Casters (CC) from the EAFs Baghouse to the LMS Baghouse. The addition of the LMS Baghouse will also reduce of the amount of criteria pollutant fugitives in the meltshop and improve the air quality of the meltshop.
- (c) SDI proposes to increase the nominal heat input rate of three (3) existing natural gas-fired tundish preheaters (ID# 3n, ID# 3h and ID# 3i) to 15 MMBtu/hr. Preheaters ID #3h and #3i are each currently 5 MMBtu/hr. Preheater ID #3n is currently 10 MMBtu/hr.
- (d) SDI proposes to remove the BACT requirement to maintain a partially enclosed, roofed structure to reduce particulate matter emissions during slag dumping.
- (e) Re-evaluate NO_x BACT for ladle dryer ID#3l, tundish nozzle preheater ID#3m, and tundish dryer ID#3o. According to SDI, the existing NO_x BACT for these units is not practically achievable.

Added Emission Units

SDI proposes to add the following emission units:

- (e) One (1) natural gas-fired tundish preheater, identified as ID# 3p, with a nominal heat input rate of 15 MMBtu/hr.
- (f) Four (4) natural gas-fired horizontal ladle preheaters, identified as ID# 3q, 3r, 3s, and 3t, with nominal heat input rate of 10 MMBtu/hr, each.
- (g) Two (2) natural gas-fired vertical ladle preheaters, identified as ID# 3u and ID# 3v, with a nominal heat input rate of 10 MMBtu/hr, each.
- (h) Two (2) natural gas-fired tundish dryers, identified as ID# 3w and ID# 3x, with a nominal heat input rate of 5 MMBtu/hr, each.

Emissions from these units will be captured by the meltshop canopy and exhaust to the existing EAF Baghouse (stack 1) and/or the new LMS Baghouse (stack 43).

See the *Permit Level Determination – PSD* section of the Technical Support Document for the net emissions increase of the modification.

BACT Description

This source is located in Whitley County which is designated as attainment or unclassifiable for all criteria pollutants. Based upon emission calculations completed by the IDEM, OAQ, the emission increase of the modification exceeds the Prevention of Significant Deterioration (PSD) significance threshold levels in 326 IAC 2-2-1 for PM, PM₁₀, and NO_x.

In addition, the Permittee has proposed to change existing BACT requirements for SO₂, VOC and CO in order to accommodate the heat input capacity increase of tundish preheater ID# 3n.

Therefore, PM, PM₁₀, NO_x, SO₂, VOC and CO emissions have been reviewed pursuant to 326 IAC 2-2-3, which requires a BACT determination.

BACT is defined as “an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under the CAA emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of ‘best available control technology’ result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act.”

According to the “*Top-Down*” *Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses are conducted with a ‘top-down’ approach which consists of the following steps:

- (1) Identify all potentially available control options;
- (2) Eliminate technically infeasible control options;
- (3) Rank remaining control technologies by control effectiveness;
- (4) Evaluate control options; and
- (5) Select BACT.

Also in accordance with the *“Top-Down” Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses (specifically step 4) must take into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution, thereby protecting public health and the environment. This BACT determination is based on the following information:

- (1) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;
- (2) EPA and State air quality permits;
- (3) Communications with control device equipment manufacturers;
- (4) The EPA New Source Review website;
- (5) Technical books and articles; and
- (6) Guidance documents from, and communications with, state agencies.

APPENDIX B.1 Best Available Control Technology (BACT) Determination for Electric Arc Furnaces

Background and Process Description

The following limitations currently exist as BACT for EAF-1a and EAF-1b:

Pursuant to CP 183-10097-00030, issued July 7, 1999, amended by SSM 183-12692-0030, issued January 10, 2001 and 326 IAC 2-2:

- (a) Filterable PM/PM10 emissions from the EAFs shall be controlled by a baghouse.
- (b) Filterable PM/PM10 emissions from the EAFs Baghouse shall not exceed 0.0018 grains per dry standard cubic feet and 14.4 pounds per hour based on a 3-hour block average.
- (c) The total filterable and condensable PM/PM10 emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet and 41.6 pounds per hour based on a 3-hour block average.
- (d) There shall be no roof monitors in the melt shop.
- (e) The meltshop shall be located in a total enclosure subject to general ventilation that maintains the meltshop at a lower than ambient pressure to ensure in-draft through any doorway opening.

Ventilation air from the total enclosure shall be conveyed to the meltshop EAF Baghouse.

- (f) A segmented canopy hood shall be constructed above the EAFs. The canopy shall be divided into separate sections and the dampers operated in a manner that will promote good capture efficiency for the meltshop EAF Baghouse.
- (g) Visible emissions from the EAFs Baghouse stack (Stack 1) shall not exceed three percent (3%) opacity based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, 326 IAC 2-1.1-5 (Air Quality Requirements) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall operate EAF-1a and EAF-1b at a maximum combined rate of:

- (a) 300 tons of molten steel per hour, and
- (b) 2,628,000 tons of molten steel per 12-consecutive month period, with compliance determined at the end of each month.

BACT for PM/PM10

The following sections include PM and PM10 BACT determinations for EAF-1a and EAF-1b.

Step 1 – Identify Control Options

According to information available in the EPA's *Compilation of Air Pollutant Emission Factors, AP-42 Ch. 12.5 (Iron and Steel Production)* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from an electric arc furnace can be controlled with:

- (a) Fabric filter collector (baghouse),

- (b) Electrostatic precipitator (ESP),
- (c) Wet scrubber, or
- (d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

Electrostatic Precipitator (ESP):

ESPs use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds such as those emitted from the EAFs. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge. This operational problem drastically lowers the efficiency of the ESP.

Therefore, an ESP is considered technically infeasible for controlling particulate emissions from an EAF.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
Wet Scrubber	Greater than 90%
High Efficiency Cyclone	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

- (a) Fabric Filter Collector (i.e. Baghouse):

A review of the EPA's technical bulletins and technology fact sheets located at:

www.epa.gov/ttn/catc/products.html; and

<http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/index.html>

state that fabric filter collectors (i.e. baghouses) demonstrate excellent effectiveness and reliability when properly designed and operated to collect dry particulates. A collector will generally have an extremely high particulate matter collection efficiency for relatively minimal cost.

The existing PM/PM10 BACT for EAF-1a, EAF-1b and the most recent BACT determinations in the RBLC require the use of fabric filter collectors.

- (b) Wet scrubbers and high efficiency cyclones:

While scrubbers and cyclones are capable of controlling PM emissions, they have control efficiencies lower than that of fabric filters. As a result, further review of these control options is not necessary.

The OAQ reviewed 28 facilities and 31 processes listed in the EPA's RBLC under the RBLC Code 81.310 (Ferrous Metals Industry - Electric Arc Furnaces) that implemented BACT to control

particulate emissions. Of these facilities and processes, the following five (5) most recent records were identified that address filterable PM/PM10 emissions from electric arc furnaces:

Source	RBLC ID	Date of permit issuance	Add-on Control	PM/PM10 BACT limit (gr/dscf)	% opacity BACT limit
Wheeling Pittsburgh Steel Corp.	OH-0292	1/6/05	Baghouse	0.0032	3%
North Star BHP Steel	OH-0285	8/5/03	Baghouse	0.0018	6%
Charter Steel, Inc.	OH-0276	4/14/03	Baghouse	0.0024	6%
J & L Specialty Steel	PA-0214	4/2/03	none	0.0018	none
Timken Company	OH-0246	2/20/03	Baghouse	0.0032	none
<i>SDI - Proposed</i>	<i>NA</i>	<i>NA</i>	<i>Baghouse</i>	<i>0.0018</i>	<i>3%</i>

Note that the OAQ established 0.0018 gr/dscf PM and 0.0052 gr/dscf PM10 BACT limits for Nucor Steel in PSD SSM 107-16823-00038, issued November 21, 2003. This determination is not listed in the RBLC.

The OAQ reviewed 28 facilities and 31 processes listed in the EPA's RBLC under the RBLC Code 81.310 (Ferrous Metals Industry - Electric Arc Furnaces) that implemented BACT to control particulate emissions. Of these facilities and processes, the following four (4) most recent records were identified that address filterable plus condensable PM10 emissions from electric arc furnaces:

Source	RBLC ID	Date of permit issuance	Add-on Control	PM/PM10 BACT limit (gr/dscf)	% opacity BACT limit
Nucor Steel	TX-0417	1/15/03	Baghouse	0.0052	none
Hoegannaes Corp.	TN-0122	2/11/00	Baghouse	0.0052 ^(a)	none
Steel Dynamics	IN-0080	7/7/99	Baghouse	0.0052	3%
Arkansas Steel Assoc.	AR-0030	9/24/98	Baghouse	0.0052	none
<i>SDI - Proposed</i>	<i>NA</i>	<i>NA</i>	<i>Baghouse</i>	<i>0.0052</i>	<i>3%</i>

Note that the OAQ established 0.0018 gr/dscf PM and 0.0052 gr/dscf PM10 BACT limits for Nucor Steel in PSD SSM 107-16823-00038, issued November 21, 2003. This determination is not listed in the RBLC.

(a) This limit was not established as BACT. It is listed in the RBLC as a "Case-by-Case" limit.

SDI has proposed to continue using a fabric filter baghouse to control PM/PM10 emissions from EAF-1a and EAF-1b. Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

SDI's proposed filterable PM/PM10 BACT limit of 0.0018 gr/dscf (with 3% opacity) is identical to its existing BACT requirement and the most stringent limitation established in recent BACT determinations for similar operations.

SDI's proposed filterable plus condensable PM10 BACT limit of 0.0052 gr/dscf (with 3% opacity) is identical to its existing BACT requirement and the most stringent limitation established in recent BACT determinations for similar operations.

The existing PM/PM10 BACT for the EAFs includes the most stringent requirements for EAFs. In addition to specifying the aforementioned gr/dscf, lb/hr and opacity emission limits, it also includes operation requirements. The EAFs are not being modified so the existing production rate limitations shall remain in effect.

Step 5 – Select BACT

Based on the evaluations described above, the IDEM, OAQ has determined that the existing PM/PM10 BACT for SDI's EAF-1a and EAF-1b remains PM/PM10 BACT. Specifically, PM/PM10 BACT for EAF-1a and EAF-1b is as follows:

(Note that the structure of the existing BACT requirements has been revised somewhat for clarity.)

Pursuant to CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2 (PSD – Control Technology Review Requirements):

- (a) Filterable PM/PM₁₀ emissions from EAF-1a and EAF-1b shall be controlled by the EAFs Baghouse.
- (b) The total filterable PM/PM₁₀ emissions from the EAFs Baghouse shall not exceed 0.0018 grains per dry standard cubic feet and 14.4 pounds per hour based on a 3-hour block average.
- (c) The total filterable and condensable PM₁₀ emissions from the EAFs Baghouse shall not exceed 0.0052 grains per dry standard cubic feet and 41.6 pounds per hour based on a 3-hour block average.
- (d) There shall be no roof monitors in the melt shop.
- (e) The meltshop shall be located in a total enclosure subject to general ventilation that maintains the meltshop at a lower than ambient pressure to ensure in-draft through any doorway opening.

Ventilation air from the total enclosure shall be conveyed to the EAFs Baghouse.
- (f) A segmented canopy hood shall be maintained above the EAFs. The canopy shall be divided into separate sections and the dampers operated in a manner that will promote good capture efficiency for the EAFs Baghouse.
- (g) Visible emissions of the stack exhaust from the EAFs Baghouse (Stack 1) shall not exceed three percent (3%) opacity, based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, PSD SSM 183-23905-00030, 326 IAC 2-1.1-5 (Air Quality Requirements) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall operate EAF-1a and EAF-1b at a maximum combined rate of:

- (a) 300 tons of molten steel per hour, and
- (b) 2,628,000 tons of molten steel per 12-consecutive month period, with compliance determined at the end of each month.

APPENDIX B.2 Best Available Control Technology (BACT) Determination for Ladle Metallurgical Station (LMS) and Continuous Casters (CC)

Background and Process Description

The ladle metallurgical station (LMS) consists of two ladle metallurgical furnaces (LMF). After melting and refining the steel in the EAF, molten steel is further refined to specification in the LMS. The refined steel from the LMS is cast using two (2) continuous casters (CC).

BACT for PM/PM10

The existing PM/PM₁₀ BACT requirements for these units are as follows:

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, amended by PSD SSM 183-12692-00030, issued January 10, 2001 and 326 IAC 2-2, the filterable and condensable PM/PM10 emissions from the ladle metallurgical station (LMS) and continuous casters (CC) shall be controlled by the EAFs Baghouse.

The following sections include PM and PM10 BACT determinations for the LMS and CC. These units are reviewed together because they operate in conjunction with one another, will exhaust to the same stack and a review of similar sources indicates that they are often controlled by the same control device.

Step 1 – Identify Control Options

According to information available in the EPA's *Compilation of Air Pollutant Emission Factors, AP-42 Ch. 12.5 (Iron and Steel Production)* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from a LMS or CC can be controlled with a:

- (a) Fabric filter collector (baghouse),
- (b) Electrostatic precipitator (ESP),
- (c) Wet scrubber, or
- (d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

Electrostatic Precipitator (ESP):

ESPs use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds such as those emitted from the LMS. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge. This operational problem drastically lowers the efficiency of the ESP.

Therefore, an ESP is considered technically infeasible for controlling particulate emissions from LMS. The OAQ is not aware of a steel mill where an ESP has been operated to control particulate emissions from an LMS.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
Wet Scrubber	Greater than 90%
High Efficiency Cyclone	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

- (a) Fabric Filter Collector (i.e. Baghouse):

A review of the EPA's technical bulletins and technology fact sheets located at:

www.epa.gov/ttn/catc/products.html; and

<http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/index.html>

state that fabric filter collectors (i.e. baghouses) demonstrate excellent effectiveness and reliability when properly designed and operated to collect dry particulates. A collector will generally have an extremely high particulate matter collection efficiency for relatively minimal cost.

The existing BACT for the LMS and CC and the most recent BACT determinations in the RBLC require the use of fabric filter collectors.

- (b) Wet scrubbers and Cyclones:

While scrubbers and cyclones are capable of controlling particulate emissions, they have control efficiencies lower than that of fabric filters. As a result, further review of these control options is not necessary.

The OAQ reviewed 24 facilities and 28 processes listed in the EPA's RBLC (RACT-BACT-LAER Clearinghouse) under the RBLC Codes 81.220 (Hot Metal Transfer and Ladle Processes), 81.340 (Ladle Metallurgical Processes) and 81.350 (Casting and Pouring) that implement BACT to control particulate emissions. Of these facilities and processes, the following five (5) most recent records were identified that address filterable PM/PM10 emissions:

Source	RBLC ID	Date of permit issuance	Add-on Control	PM/PM10 BACT limit (gr/dscf)	% opacity BACT limit
Wheeling Pittsburgh Steel Corp.	OH-0292	1/6/05	Baghouse	0.0032	none
Steelcorr, Inc.	AR-0077	7/22/04	Baghouse	0.0018 ⁽¹⁾	none
Nucor Steel	IN-0108	11/21/03	Baghouse	0.0018	none
Charter Steel, Inc.	OH-0276	4/14/03	Baghouse	0.0024 ⁽¹⁾	none
Quanex Corp.	AR-0021	2/18/98	Baghouse	0.0018	none
<i>SDI - Proposed</i>	<i>NA</i>	<i>NA</i>	<i>Baghouse</i>	<i>0.0018</i>	<i>3%</i>

(1) These BACT limits were established for both the ladle metallurgical furnace and the caster.

The OAQ reviewed 24 facilities and 28 processes listed in the EPA's RBLC (RACT-BACT-LAER Clearinghouse) under the RBLC Codes 81.220 (Hot Metal Transfer and Ladle Processes), 81.340 (Ladle Metallurgical Processes) and 81.350 (Casting and Pouring) that implement BACT to control particulate emissions. Of these facilities and processes, the following five (5) most recent records were identified that address filterable plus condensable PM10 emissions:

Source	RBLC ID	Date of permit issuance	Add-on Control	PM/PM10 BACT limit (gr/dscf)	% opacity BACT limit
Nucor Steel	AR-0086	6/11/04	Baghouse	0.0052	none
Nucor Steel	IN-0108	11/21/03	Baghouse	0.0052	none
Nucor Steel	TX-0417	1/15/03	Baghouse	0.0052	none
Nucor Steel	AR-0085	10/10/01	Baghouse	0.0052	none
Arkansas Steel Assoc.	AR-0044	1/5/01	Baghouse	0.0052	none
<i>SDI - Proposed</i>	<i>NA</i>	<i>NA</i>	<i>Baghouse</i>	<i>0.0052</i>	<i>3%</i>

SDI has proposed to use a fabric filter baghouse to control PM/PM10 emissions from the LMS and CC. Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

SDI's proposed filterable PM/PM10 BACT limit of 0.0018 gr/dscf is identical to the most stringent limitation established in recent BACT determinations for similar operations.

SDI's proposed filterable plus condensable PM10 BACT limit of 0.0052 gr/dscf is identical to the most stringent limitation established in recent BACT determinations for similar operations.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the ladle metallurgical station (LMS) and continuous casters (CC) (exhausting to stack 43):

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999, PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT):

- (a) PM/PM10 emissions from the Ladle Metallurgical Station (ID# 3a) and Continuous Casters (ID# 3k and ID# 42a) shall be controlled by the LMS Baghouse.
- (b) The PM/PM10 emissions from the following facilities are limited as indicated in the table below:

<u>Stack #:</u> Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions	
	(gr/dscf)	(lb/hr)	(gr/dscf)	(lb/hr)
<u>Stack 43:</u> Ladle Metallurgical Station (ID# 3a) and Continuous Casters (ID# 3k and ID# 42a)	0.0018	3.9	0.0052	11.2

- (c) Visible emissions of the stack exhaust from the LMS Baghouse (stack 43) shall not exceed three percent (3%) opacity, based on a six (6) minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9).

APPENDIX B.3 Best Available Control Technology (BACT) Determination for Tundish Preheaters, Ladle Preheaters and Tundish Dryers

Background and Process Description

The emissions from the new or modified tundish preheaters, ladle preheaters and tundish dryers (identified in the *Source Information and Description of Modification* section of this document) are the product of natural gas combustion. These units are "open-flame" combustion units and emissions will be captured by the meltshop canopy and exhaust through the existing EAF Baghouse (stack 1) and/or new LMS Baghouse (stack 43).

BACT for PM/PM10

For the purposes of this review, PM and PM10 are evaluated together. As a result, particulate matter emissions are referred to as PM/PM10; this indicates that the PM emissions or limit and the PM10 emissions or limit are the same.

The following sections include a PM/PM10 BACT determination for tundish preheaters ID# 3p, 3h, 3i, 3n, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, there are no reasonably available options to control PM/PM10 emissions specific to natural gas combustion.

Step 2 – Eliminate Technically Infeasible Control Options

Not applicable. There are no control options identified.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. There are no control options identified.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for natural gas combustion. Specifically, the OAQ reviewed 13 facilities and 15 processes listed under RBLC Code 81.300 (Iron Foundries - Ladle Metallurgy) that implement BACT to control PM/PM10 emissions.

Of those facilities and processes, only one relevant record was identified:

Charter Steel; RBLC Code OH-0276; permit 13-04176, issued April 14, 2003

In that BACT determination, PM/PM10 emissions from several ladle preheaters, ladle dryers and tundish preheaters (each with a natural gas-fired heat input capacity of less than 15 MMBtu/hr) were required to be controlled by the meltshop baghouse.

The OAQ also reviewed 147 facilities and 199 processes listed in the RBLC under RBLC Code 13.310 (Natural Gas Combustion; less than 100 MMBtu/hr) that implemented BACT to control PM/PM10 emissions. Of these facilities and processes, the following five (5) most recent records for natural gas combustion units were identified:

Source	RBLC ID	Date of permit issuance	Combustion Unit size (MMBtu/hr)	PM/PM10 BACT limit	Equivalent BACT limit (lb/MMBtu)
BP Exploration Alaska	AK-0062	8/19/05	34	(1)	NA
Duke Energy	OH-0252	12/28/04	30.6	0.31 lb/hr	0.01
Dome Valley	AZ-0047	12/1/04	38	0.0033 lb/MMBtu (2)	0.0033
Hyundai Motor	AL-0212	11/22/04	24.5	(1)	NA
Wisconsin Public Service	WI-0226	8/27/04	46.2	0.8 lb/hr	0.017
<i>SDI - Proposed</i>	<i>NA</i>	<i>NA</i>	<i>5 - 15, each</i>	<i>0.0076 lb/MMBtu</i>	<i>0.0076</i>

(1) A PSD BACT emission limit was not established.

(2) This BACT limit is for a 38 MMBtu/hr auxiliary boiler. The firing configuration of a boiler is different from that of the tundish units being reviewed. In addition, boilers are often designed with combustion controls that optimize fuel and air mixing. These characteristics contribute to a lower PM/PM10 emission rate (on a lb/MMBtu basis) compared to open-flame combustion units like the tundish units being reviewed. As a result, this RBLC record is included for informational purposes only and is not considered in this evaluation.

None of the BACT determinations identified in the table above were coupled with the use of PM/PM10 controls.

The OAQ also reviewed permits for other similar sources located in Indiana that implement BACT to control PM/PM10 emissions from tundish preheaters, ladle preheaters and tundish dryers.

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, the PM/PM10 emissions from tundish preheater ID #3n shall not exceed 0.0076 pounds per MMBtu and 0.076 pounds per hour. This BACT determination did not require any form of control.

SDI proposes that PM/PM10 BACT for the tundish preheaters, tundish dryers, and ladle preheaters be the use of the EAFs Baghouse and LMS Baghouse. This approach was implemented by the only identical BACT determination (Charter Steel) listed in the RBLC.

SDI also proposes a PM/PM10 BACT emission rate of 0.0076 lb/MMBtu. This is equivalent to a 2005 PM/PM10 BACT determination for identical units located at the source.

Step 5 – Select BACT

Based on the considerations mentioned above, the IDEM, OAQ has determined that the PM/PM10 BACT for SDI's tundish preheaters, ladle preheaters and tundish dryers is the following:

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the PM/PM10 emissions from tundish preheaters ID# 3p, 3h, 3i, 3n, ladle preheaters ID# 3q, 3r, 3s, 3t, 3u and 3v and tundish dryers ID# 3w and 3x shall:

- (1) Be controlled by the EAFs Baghouse and/or the LMS Baghouse.
- (2) Not exceed 0.0076 pounds per MMBtu.

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

BACT for NOx

NOx formation is primarily the result of "thermal NOx" and "fuel NOx". Thermal NOx refers to the generation of NOx from the oxidation of nitrogen in the air. Fuel NOx refers to the generation of NOx from the oxidation of nitrogen in the fuel.

Unlike boilers and furnaces, where combustion air and temperature can be controlled, the engineering of open flame combustion units plays a very small role in the magnitude of NOx emissions.

The following sections include a NOx BACT determination for ladle dryer ID# 3l, tundish nozzle preheater ID# 3m, tundish preheater ID# 3n and tundish dryer ID# 3o.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, there are no reasonably available add-on options to control NOx emissions from open flame combustion units.

IDEM, OAQ is not aware of any steel mills using any add-on control technology to control combustion-related emissions from small combustion sources. However, the following integral control/pollution prevention systems were investigated:

- (a) Low NOx Burners (LNB), and
- (b) Ultra Low NOx Burners (ULNB)

Step 2 – Eliminate Technically Infeasible Control Options

Ultra Low NOx Burners

Ultra low-NOx burners (ULNB) use sealed combustion chambers, like boilers and furnaces, where baffle design controls air staging and consequently mitigates NOx generation. ULNB also reduce NOx formation by recirculation of the exhaust gases to slow the dissipation of heat. As a result, the utilization of ULNB requires considerable reconfiguration of the combustion equipment - which is technically infeasible for the tundish preheaters, ladle preheaters and tundish dryers.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. Only one technically feasible control option has been identified - Low NOx Burners.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established NOx BACT limitations for natural gas combustion. Specifically, the OAQ reviewed 12 facilities and 15 processes listed under RBLC Code 81.340 (Ladle Metallurgical Processes) that implement BACT to control NOx emissions.

The OAQ also reviewed permits for similar sources located in Indiana that implement BACT to control NOx emissions from tundish preheaters, ladle preheaters and tundish dryers.

Of these facilities and processes, the following records were identified that address NOx emissions from tundish preheaters, ladle preheaters and dryers:

Source	RBLC ID	Date of permit issuance	Size (MMBtu/hr)	Control	NOx BACT limit (lb/MMBtu)
Gerdau Ameristeel Wilton	IA-0087	5/29/07	5	None ⁽¹⁾	0.1
Nucor Steel - Crawfordsville (IN)	NA	4/27/06	12	Low-NOx Burners	0.1
Steel Dynamics - Whitley (IN)	NA	11/18/05	10	Low-NOx Burners	0.05 ⁽²⁾
Steel Dynamics - Hendricks (IN)	NA	8/29/03	7.5	Low-NOx Burners	0.05 ⁽²⁾
Charter Steel, Inc.	OH-0276	4/14/03	20	None	0.098 ⁽³⁾
Steel Dynamics - Whitley (IN)	NA	7/7/99	10	Low-NOx Burners	0.1
<i>SDI - Proposed</i>	<i>NA</i>	<i>Pending</i>	<i>5-15, each</i>	<i>None</i>	<i>0.1</i>

(1) No add-on controls were required; however, the determination did require good control of combustion.

(2) These sources have been unable to demonstrate compliance with the 0.05 lb/MMBtu limit. As a result, this emission rate is not considered in this BACT determination.

(3) This limit is 2% lower than the 0.01 lb/MMBtu BACT limit established in recently issued permits.

IDEM could not locate information explaining how this limit was determined. As a result, this emission rate is not considered in this BACT determination.

IN – Located in Indiana.

While an emission rate of 0.05 lb/MMBtu is the most stringent NOx BACT limitation established for nearly-identical units, the respective sources have been unable to demonstrate compliance with the limit. Therefore, 0.1 lb/MMBtu is the most practically achievable NOx limit for the tundish preheaters, ladle preheaters and tundish dryers. A limit of 0.1 lb/MMBtu has also been established as BACT for tundish preheaters, ladle preheaters and dryers in recently issued permits.

Step 5 – Select BACT

Based on the considerations mentioned above, the IDEM, OAQ has determined that NOx BACT for ladle dryer ID#3l, tundish nozzle preheater ID#3m, tundish preheater ID# 3n and tundish dryer ID# 3o is the following:

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following BACT standards for ladle dryer ID# 3l, tundish nozzle preheater ID# 3m, tundish preheater ID# 3n and tundish dryer ID# 3o:

- (1) Low NOx burners shall be installed and utilized to minimize NOx emissions.
- (2) NOx emissions from each unit shall not exceed 0.1 pounds per MMBtu.
- (3) Good combustion practices shall be observed.

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

BACT for SO2

The following sections include a SO2 BACT determination for tundish preheater ID# 3n. Note that the SO2 emissions increase associated with the modification of tundish preheater ID# 3n is 0.01 ton/yr.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, there are no reasonably available add-on options to control SO2 emissions from small natural gas combustion units. In addition, the IDEM, OAQ, is not aware of any steel mills using any add-on control technology to control combustion-related emissions from small combustion sources.

In addition, any form of SO2 add-on control is considered impractical due to the small SO2 emission rate of the preheater.

Step 2 – Eliminate Technically Infeasible Control Options

Not applicable. No technically feasible control options have been identified.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. No technically feasible control options have been identified.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established SO2 BACT limitations for natural gas combustion. Specifically, the OAQ reviewed 12 facilities and 15 processes listed under RBLC Code 81.340 (Ladle Metallurgical Processes) that implement BACT to control SO2 emissions. No records were identified.

The OAQ also reviewed permits for similar sources located in Indiana that implement BACT to control SO2 emissions from tundish preheaters.

Of these facilities and processes, the following records were identified that address SO2 emissions from tundish preheaters:

Source	RBLC ID	Date of permit issuance	Size (MMBtu/hr)	Add-on Control	SO2 BACT limit (lb/MMBtu)
Nucor Steel - Crawfordsville (IN)	NA	4/27/06	12	None	0.0006
Steel Dynamics - Whitley (IN)	NA	11/18/05	10	None	0.0006
Steel Dynamics - Hendricks (IN)	NA	8/29/03	7.5	None	0.0006
<i>SDI - Proposed</i>	<i>NA</i>	<i>Pending</i>	<i>15</i>	<i>None</i>	<i>0.0006</i>

SDI's proposed SO2 BACT limit of 0.0006 lb/MMBtu is identical to the only limitation established in recent BACT determinations for similar operations.

Step 5 – Select BACT

Based on the considerations mentioned above, the IDEM, OAQ has determined that SO₂ BACT for tundish preheater ID# 3n is the following:

Pursuant to PSD SSM 183-18426-00030, issued November 18, 2005, amended by PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the SO₂ emissions from tundish preheater ID# 3n shall not exceed 0.0006 pounds per MMBtu.

BACT for CO

The following sections include a CO BACT determination for tundish preheater ID# 3n. Note that the CO emissions increase associated with the modification of tundish preheater ID# 3n is 1.84 ton/yr.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, there are no reasonably available add-on options to control CO emissions from small natural gas combustion units. In addition, the IDEM, OAQ, is not aware of any steel mills using any add-on control technology to control combustion-related emissions from small combustion sources.

In addition, any form of CO add-on control is considered impractical due to the small CO emission rate of the preheater.

Step 2 – Eliminate Technically Infeasible Control Options

Not applicable. No technically feasible control options have been identified.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. No technically feasible control options have been identified.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established CO BACT limitations for natural gas combustion. Specifically, the OAQ reviewed 12 facilities and 15 processes listed under RBLC Code 81.340 (Ladle Metallurgical Processes) that implement BACT to control CO emissions.

The OAQ also reviewed permits for similar sources located in Indiana that implement BACT to control CO emissions from tundish preheaters.

Of these facilities and processes, the following records were identified that address CO emissions from tundish preheaters:

Source	RBLC ID	Date of permit issuance	Size (MMBtu/hr)	Add-on Control	CO BACT limit (lb/MMBtu)
Gerdau Ameristeel Wilton	IA-0087	5/29/07	5	None	0.084
Nucor Steel - Crawfordsville (IN)	NA	4/27/06	12	None	0.084
Steel Dynamics - Whitley (IN)	NA	11/18/05	10	None	0.084
Steel Dynamics - Hendricks (IN)	NA	8/29/03	7.5	None	0.084
Charter Steel, Inc.	OH-0276	4/14/03	20	None	0.082
<i>SDI - Proposed</i>	<i>NA</i>	<i>Pending</i>	<i>15</i>	<i>None</i>	<i>0.084</i>

IN – Located in Indiana.

While an emission rate of 0.082 lb/MMBtu is the most stringent CO BACT limitation established for identical units, the RBLC indicates that compliance with this limit has not been verified. As a result, this limit is excluded from the evaluation.

SDI indicated that 0.084 lb/MMBtu is the most practically achievable CO limit for tundish preheater ID# 3n. The proposed limit is equivalent to other CO BACT determinations for tundish preheaters. A more stringent limit is not obtainable without the use of add-on controls; which are technically infeasible.

Step 5 – Select BACT

Based on the considerations mentioned above, the IDEM, OAQ has determined that CO BACT for tundish preheater ID# 3n is the following:

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the CO emissions from tundish preheater ID# 3n shall not exceed 0.084 pounds per MMBtu.

BACT for VOC

The following sections include a VOC BACT determination for tundish preheater ID# 3n. Note that the VOC emissions increase associated with the modification of tundish preheater ID# 3n is 0.12 ton/yr.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA’s *Compilation of Air Pollutant Emission Factors* and the EPA’s *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, there are no reasonably available add-on options to control VOC emissions from small natural gas combustion units. In addition, the IDEM, OAQ, is not aware of any steel mills using any add-on control technology to control combustion-related emissions from small combustion sources.

In addition, any form of VOC add-on control is considered impractical due to the small CO emission rate of the preheater.

Step 2 – Eliminate Technically Infeasible Control Options

Not applicable. No technically feasible control options have been identified.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. No technically feasible control options have been identified.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA’s RBLC (RACT-BACT-LAER Clearinghouse) to identify established VOC BACT limitations for natural gas combustion. Specifically, the OAQ reviewed 9 facilities and 11 processes listed under RBLC Code 81.340 (Ladle Metallurgical Processes) that implement BACT to control VOC emissions.

The OAQ also reviewed permits for similar sources located in Indiana that implement BACT to control VOC emissions from tundish and ladle operations.

Of these facilities and processes, the following records were identified that address VOC emissions from tundish and ladle operations:

Source	RBLC ID	Date of permit issuance	Size (MMBtu/hr)	Add-on Control	VOC BACT limit (lb/MMBtu)
Nucor Steel - Crawfordsville (IN)	NA	4/27/06	12	None	0.0054 ⁽¹⁾
Steel Dynamics - Whitley (IN)	NA	11/21/05	10	None	0.0055
Steel Dynamics - Hendricks (IN)	NA	8/29/03	7.5	None	0.0055
Charter Steel, Inc.	OH-0276	4/14/03	20	None	0.0055
<i>SDI - Proposed</i>	<i>NA</i>	<i>Pending</i>	<i>15</i>	<i>None</i>	<i>0.0055</i>

IN – Located in Indiana.

(1) This VOC BACT limit was established for ladle preheaters and transition piece dryers.

Despite SDI's proposal that 0.0055 lb/MMBtu is BACT for VOC, IDEM believes that a VOC emission rate of 0.0054 lb/MMBtu is achievable without the use of add-controls. This is consistent with the most recent BACT determination for nearly identical units.

Step 5 – Select BACT

Based on the considerations mentioned above, the IDEM, OAQ has determined that VOC BACT for tundish preheater ID# 3n is the following:

Pursuant to PSD SSM 183-23905-00030 and 326 IAC 2-2-3 (PSD - BACT), the VOC emissions from tundish preheater ID# 3n shall not exceed 0.0054 pounds per MMBtu.

APPENDIX B.4 Best Available Control Technology (BACT) Determination for Slag Handling and Processing

Background and Process Description

During melting in the EAFs, a slag containing oxidation products of phosphorus, silicon, manganese, carbon and other materials occurs and forms on top of the molten metal.

The following description is located in Section D.6 of SDI's Part 70 permit (T183-17160-00030, issued July 3, 2007) regarding slag handling and processing:

A slag handling and processing area (ID# 14), operated by an independent contractor, with a nominal rated capacity of 250 tons per hour.

This processing area consists of slag pot dumping, deskulling, slag cooling, digging of slag pits by a front-end loader, loading of grizzly feeder by a front-end loader, crushing, screening, conveyor transfer points, loading of materials into piles, storage piles, load out of materials from piles, and vehicle movement around piles.

This processing area utilizes the following equipment: one (1) grizzly/feeder, three (3) conveyors, one (1) single deck screen, one (1) primary crusher, one (1) by-pass conveyor, one (1) screen, and seven (7) stackers.

Pursuant to 326 IAC 2-2-3, Condition D.6.3 of T183-17160-00030, issued July 3, 2007, requires compliance with a comprehensive Fugitive Dust Control Plan (FDCP) and various opacity limitations for the various operations associated with SDI's slag handling and processing activities. Section E.1 of T183-17160-00030, issued July 3, 2007, includes the FDCP and Condition E.1.5 contains requirements pertaining to slag handling/processing.

Pursuant to 326 IAC 2-2-3, Condition D.6.4 of T183-17160-00030, issued July 3, 2007, requires that the slag dumping pits be covered by a partially enclosed, roofed structure to reduce particulate matter emissions during slag dumping.

SDI has had considerable difficulty maintaining the roofed structure. The extreme heat from slag dumping warps the steel canopy and continually weakens the structure to the point that it has collapsed several times and required repairs. As a result, SDI proposes to remove the BACT requirement to maintain the partial enclosure. Note that it is not clear whether the enclosure effectively controls PM/PM10 emissions; however, it is apparent that the enclosure does temporarily increase opacity close to the ground during slag dumping by hindering the dissipation of the emissions.

BACT for PM/PM10

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors*, the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets* and a review of permits for similar sources, PM/PM10 emissions from slag handling and processing can be controlled using dust suppression.

Step 2 – Eliminate Technically Infeasible Control Options

The suppression of dust (fugitive particulate emissions) is technically feasible and a prolific measure for controlling PM/PM10 emissions from slag handling and processing.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. Only one control option has been identified.

Step 4 - Evaluate Control Options

The OAQ reviewed 37 facilities and 134 processes listed in the EPA’s RBLC under the RBLC Codes 81.390 and 81.290 (Other Steel Foundry Processes) that implemented BACT to control PM/PM10 emissions. Of these facilities and processes, the following five (5) most recent records for slag handling and processing were identified:

Source	RBLC ID	Date of permit issuance	Opacity Limit	Drop/dump Height Maximum	Dust Suppression
Nucor Steel	NC-0113	11/23/04	none	Y	Y
Steelcorr, Inc.	AR-0077	7/22/04	none	Y	Y
Charter Steel	OH-0276	4/14/03	15%	N	N
Nucor Steel	AR-0078	6/9/03	none	N	Y
Nucor Steel	AR-0055	10/10/01	none	N	Y
<i>SDI - Proposed</i>	NA	NA	5%, 3%	Y	Y

As the above table indicates, recent BACT determinations for slag handling and processing commonly include one or more of the following requirements: opacity limits, drop/dump height maximums and dust suppression (typically with water spraying).

None of the recent BACT determinations required the use of a partially enclosed structure to minimize emissions from the slag dumping pits.

Except for the requirement to maintain the partially enclosed, roofed structure over the slag dumping pits, SDI proposes to comply with its existing BACT requirements. Those requirements include all of the control options identified from a review of similar BACT determinations listed in the RBLC. In addition, SDI’s existing opacity limits are considerably lower than the opacity limits established in 2003 for Charter Steel.

SDI’s existing BACT requirements limit the opacity of the visible emission notations from the various slag handling/processing operations and instruct the Permittee to comply with a FDCP that includes provisions to minimize drop heights and to use water to suppress dust generated during slag transfers. SDI must also comply with a processing limit of 438,000 tons of slag per 12-consecutive month period.

Step 5 – Select BACT

Based on the considerations mentioned above, the IDEM, OAQ has determined that the PM/PM10 BACT for SDI’s slag handling and processing area (ID# 14) is as follows:

Pursuant to PSD SSM 183-23905-00030, 326 IAC 2-1.1-5 and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the Permittee shall not process more than 438,000 tons of slag per 12-consecutive month period, with compliance determined at the end of each month.

Pursuant to PSD CP 183-10097-00030, issued July 7, 1999 and PSD SSM 183-23905-00030, the fugitive dust emissions from the various slag handling and processing operations shall be

controlled in accordance with the Fugitive Dust Control Plan (FDCP) (Section E.1 of the permit) such that the following visible emission limitations are not exceeded:

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity) (six (6) minute average)
Transferring of skull slag to slag pot	10 %
Pouring of liquid slag from EAF or LMS to slag pots	3% (on any building opening)
Dumping of liquid slag from slag pot to slag pit and cooling	3 %
Transferring of skull slag from slag pot to skull pit	5 %
Digging skull slag pits	5 %
Digging slag pits	3 %
Stockpiling of slag adjacent to the grizzly feeder	3 %
Wind erosion of stockpiles	3 %
Crushing	3 %
Screening	3 %
Conveyor transfer points	3 %
Continuous stacking of processed slag to stockpiles	3 %
Loadout of processed slag from stockpiles to haul trucks for shipment	3 %
Inplant hauling of slag pots (filled) and processed slag	3 %

The FDCP, included as Section E.1 in the Part 70 permit, includes the following requirements for the slag handling/processing operations:

- (a) During transferring of the skull slag to the slag pot, the drop height shall be minimized and the transferring shall be performed such that the visible emission limitations in the permit are not exceeded.
- (b) Emissions during the dumping of liquid slag from the slag pot to the slag pit shall be controlled by the use of skull slag and by applying water, as needed, such that the visible emission limitations in the permit are not exceeded.
- (c) Water suppression to control emissions during the transferring of the skull slag from the slag pot to the skull pit can be waived for safety reasons.
- (d) Emissions during the digging of the slag and skull pit by front-end loaders shall be controlled by applying water, as needed, such that the visible emission limitations in the permit are not exceeded.
- (e) Emissions from slag processing operations shall be controlled, as needed, through the application of water.

 Spray bars shall be used as needed to apply water on crushing and screening operations, and conveyor transfer points.
- (f) The stacker to pile drop height shall be limited to less than 48 inches, and front end loader batch drop height into trucks shall be limited to less than 48 inches.

Note that the above requirements were established pursuant to 326 IAC 2-2 in PSD SSM-183-12692-00030, issued January 10, 2001, and PSD SSM 183-18426-00030, issued November 18, 2005, and have not been revised by this BACT review.

Air Quality Analysis

Steel Dynamics, Incorporated (SDI)

Columbia City, Indiana (Whitley County)

Tracking and Plant ID: 183-23905-00030

Proposed Project

Steel Dynamics, Inc. (SDI) has submitted a request for a significant source modification of their facility with an increase in the Particulate Matter less than 10 microns (PM₁₀) emissions. SDI is proposing a new LMF baghouse and an increase in emissions from the EAF baghouse at their Columbia City location.

Analysis Summary

Based on the potential emissions after controls, a PSD air quality analysis was triggered for PM₁₀. Initial modeling determined that the project exceeded the significant impact levels for PM₁₀. A refined analysis was performed and showed no violation of the NAAQS or the PSD increment. A Hazardous Air Pollutant (HAP) analysis was performed, which showed the source will not pose a health concern. An additional impact analysis showed no significant impact. Based on modeling results, the proposed modification will not have a significant impact upon federal air quality standards.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

- A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.
- B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid utilized for the analyses.
- C. Determine the significant impact level, the area impacted by the source's emissions and background air quality levels.
- D. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or PSD increment if the applicant exceeds significant impact levels.
- E. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park.
- F. Perform a Hazardous Air Pollutant (HAP) screening for informational purposes.

G. Summarize the Air Quality Analysis

Section A - Pollutants Analyzed for Air Quality Impact

Applicability

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Regulations (CFR) 52.21(b) (23) (i).

Proposed Project Emissions

Particulate Matter less than 10 microns (PM₁₀) is the pollutant that will be emitted from the revision of SDI's emission limits. An air quality analysis is required for this pollutant because potential emissions after controls exceed the significant emission rate as shown in Table 1:

TABLE 1
Significant Emission Rates for PSD

POLLUTANT	POTENTIAL EMISSION RATE (Source Totals)	SIGNIFICANT EMISSION RATE	PRELIMINARY AQ ANALYSIS REQUIRED
	(tons/year)	(tons/year)	
PM ₁₀	124.1	15	Yes

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid

Stack Height Compliance with Good Engineering Practice (GEP)

Applicability

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur. Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which would affect the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$H_g = H + 1.5L$$

Where: H_g is the GEP stack height
 H is the structure height
 L is the structure's lesser dimension (height or width)

Existing Stack

Since the existing stack height of the unit for which the modification is proposed is below GEP stack height, the effect of aerodynamic downwash will be accounted for in the air quality analysis for the project.

Meteorological Data

The meteorological data used in the AERMOD model consisted of 1988 through 1992 surface data from the Fort Wayne Airport Weather Service station merged with the mixing heights from Dayton, Ohio Airport National Weather Service station. The meteorological data was obtained through the National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC) and preprocessed into AERMOD ready format using U.S.EPA's AERMET.

Model Description

OAQ used model version 07026 of AERMOD to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Regulations Part 51, Appendix W "Guideline on Air Quality Models".

The Auer Land Use Classification Scheme was used to determine the land use in the area. The area is considered primarily rural; therefore, a rural classification was used.

Receptor Grid

The receptor grid extended approximately 10 kilometers from the plant. Fence line receptors were closely spaced (100 meters) near the plant boundary to identify the influence of aerodynamic building downwash.

Treatment of Terrain

Receptor terrain elevation inputs were interpolated from DEM (Digital Elevation Model) data obtained from the USGS. DEM terrain data was preprocessed using AERMAP.

Section C - Significant Impact Level/Area (SIA) and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source exceeded the PSD significant impact levels (concentrations). If the source's concentrations exceed these levels, further air quality analysis is required. More modeling for PM₁₀ was required because the results did exceed significant impact levels. Significant impact levels are defined by the following time periods in Table 2 below with all maximum-modeled concentrations from the worst case operating scenarios.

TABLE 2
Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (ug/m ³)	SIGNIFICANT IMPACT LEVEL (ug/m ³)	MONITORING THRESHOLD (ug/m ³)	MONITORING DE MINIMUS EXCEEDED	REFINED AQ ANALYSIS REQUIRED
PM ₁₀	24-Hour	8.1	5	10	NO	Yes
PM ₁₀	Annual	0.9	1	-	-	No

Pre-construction and Post-construction Monitoring Analysis

Applicability

The PSD requirements, 326 IAC 2-2-4, require an air quality analysis of the new source or the major modification to determine if the pre-construction monitoring threshold is triggered. This project does not trigger any monitoring requirements.

Background Concentrations

Applicability

EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (EPA-450/4-87-007) Section 2.4.1 is cited for approval of the monitoring sites for this area.

Background Monitors

For 24-hour background concentrations, the average second highest monitoring values were used. Annual background concentrations were taken from the maximum annual values.

TABLE 3
Monitoring Data Used For Background Concentrations *

POLLUTANT	Monitoring Site	TIME AVERAGING PERIOD	Concentration (ug/m ³)
PM ₁₀	2022 North Beacon Ft. Wayne	Annual	20
PM ₁₀	2022 North Beacon Ft. Wayne	24-Hour	39.3

*OAQ used the most representative site for the air quality analysis.

Section D - NAAQS and PSD Increment

NAAQS Compliance Analysis and Results

IDEM supplied emission inventories of all sources within a 50-kilometer radius of SDI. Inventories were taken from the IDEM's air quality web site. The NAAQS inventories are generated from I-STEPS (State Emission Processing System) in accordance with 326 IAC 2-6. The PSD increment inventories include sources that affect the increment based on the major and minor source baseline dates and are compiled from permits issued by IDEM.

NAAQS modeling for the appropriate time-averaging periods for PM₁₀ was conducted and compared to the respective NAAQS limit. OAQ modeling results are shown in Table 4. All maximum-modeled concentrations were compared to the respective NAAQS limit. All maximum-modeled concentrations during the five years were below the NAAQS limits and further modeling was not required.

TABLE 4
NAAQS Analysis

Pollutant	Year	Time-Averaging Period	Maximum Concentration (ug/m3)	Background Concentration (ug/m3)	Total (ug/m3)	NAAQS Limit (ug/m3)	NAAQS Violation
PM ₁₀	1989	24 hour (H2H)	32.0	39.3	71.3	150	NO
PM ₁₀	1988	Annual	3.05	20	23.1	50	NO

Analysis and Results of Source Impact on the PSD Increment

Applicability

Maximum allowable increases (PSD increments) are established by 326 IAC 2-2 for PM₁₀. This rule also limits a source to no more than 80 percent of the available PSD increment to allow for future growth.

Source Impact

Since the impact for PM₁₀ from SDI modeled above significant impact levels, a PSD increment analysis for the existing major sources and its surrounding counties was required. Results of the increment modeling, which utilized a different inventory than the NAAQS modeling are summarized in Table 5 below.

TABLE 5
PM10 Increment Analysis

Pollutant	Year	Time-Averaging Period	Maximum Concentration ug/m3	PSD Increment ug/m3	Total Impact on the PSD Increment	Increment Violation
PM ₁₀	1989	24 Hour (H2H)	12.5	30	41.6%	NO
PM ₁₀	1988	Annual	2.9	18	16.1%	NO

The results of the increment analysis indicate the highest second high 24 hour concentration for

PM₁₀ was not above 80% of the available increment. No further analysis is required.

Part E – Qualitative Analysis

Additional Impact Analysis

All PSD permit applicants must prepare additional impacts analysis for each pollutant subject to regulation under the Act. This analysis assesses the impacts on soils and vegetation, caused by any increase in emissions of any regulated pollutant from the source. The SDI PSD permit application provided an additional impact analysis performed by Keramida Environmental.

Economic Growth

Since there is no construction involved in revising the emission limit, there will be no growth associated with this change.

Soils and Vegetation Analysis

A list of soil types present in the general area was determined. Soil type is largely Clayey Glacial Till.

Due to the agricultural nature of the land, crops in the Whitley County area consist mainly of corn, wheat, and soybeans (2002 Agricultural Census for Whitley County). The maximum modeled concentrations for SDI are well below the threshold limits necessary to have adverse impacts on the surrounding vegetation such as autumn bent, nimblewill, barnyard grass, bishopscap and horsetail, and milkweed (Flora of Indiana – Charles Deam). Livestock in Whitley County consist mainly of hogs, beef and milk cows (2002 Agricultural Census for Whitley County) and will not be adversely impacted from the facility. Trees in the area are mainly hardwoods. These are hardy trees and no significant adverse impacts are expected due to modeled concentrations.

Federal Endangered Species Analysis

Federally endangered or threatened species are listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana, and include 12 species of mussels, 4 species of birds, 2 species of bat and butterflies and 1 specie of snake. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The facility is not expected to have any additional adverse effects on the habitats of the species in the area.

Visibility Analysis

The VISCREEN model is designed as a screening model to determine the visual impact parameters from a single source plume. It is used to determine whether or not a plume is visible as an object itself.

The PM₁₀ emissions limits were used to run a local visibility Level 1 analysis. VISCREEN Version 1.01 was used to determine if the color difference parameter (Delta-E) or the plume (green) contrast limits were exceeded. The Delta-E was developed to specify the perceived magnitude of color and brightness changes and is used as the primary basis for determining the perceptibility of plume visual impacts. The plume constant can be defined at any wavelength as the relative difference in the intensity (called spectral radiance) between the viewed object and its background. This is used to determine how the human eye responds differently to different wavelengths of light. The Delta-E of 2.0 and the plume contrast of 0.05 were not exceeded at the nearest interstate and airport locations.

Additional Analysis Conclusions

The results of the additional impact analysis conclude the modification at the facility will have no significant impact on economic growth, soils, vegetation or visibility in the immediate vicinity or on any Class I area.

Part F – HAPs Analysis

OAQ currently requests data concerning the emission of 189 HAPs listed in the 1990 Clean Air Act Amendments (CAAA) that are either carcinogenic or otherwise considered toxic and may be used by industries in the State of Indiana.

Potential emissions of aggregate HAPs from this project are estimated to be 0.04 tons per year.

IDEM completed a HAP analysis comparing the maximum estimated concentrations of each pollutant with the Unit Risk Factor (URF) or Inhalation Unit Risk and the Reference Concentration (RfC). This analysis offers a refined, up to date site specific analysis that takes into account the different potencies and health effects that each pollutant presents to the public.

The URF is the upper-bound excess lifetime cancer risk estimated to result from continuous inhalation exposure to a pollutant over a 70 year lifetime. Multiplying the estimated concentration by the URF will produce a cancer risk estimate. The cancer risk estimate is the conservative probability of developing cancer from exposure to a pollutant or a mixture of pollutants over a 70 year lifetime, usually expressed as the number of additional cancer cases in a given number of people, e.g., one in a million. For screening purposes, the cancer estimates for each pollutant are considered to be additive when deriving the cumulative maximum individual cancer risk.

Non-cancer health effects are determined using the Reference Concentration (RfC). The RfC is an estimate of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Dividing the estimated pollutant concentration by the RfC will determine the pollutant's Hazard Quotient (HQ). All of the HAPs' Hazard Quotients were added together to determine the Hazard Index (HI).

This HAP screening analysis uses health protective assumptions that overestimate the actual risk associated with emissions from SDI. Estimates 1) assume a 70 year exposure time, 2) assume that all carcinogens cause the same type of cancer, 3) assume that all non-carcinogens have additive health effects, 4) assume maximum permit allowable emissions from the facility, and 5) use conservatively derived dose-response information. The risk analysis cannot accurately predict whether there will be observed health problems around SDI; rather it identifies possible avenues of risk.

TABLE 6
Hazardous Air Pollutant Modeling Results

Compound	Annual Concentration (ug/m3)	Cancer URF (ug/m3)	Cancer Risk	Hazard Quotient
Benzene	1.5 E-05	7.8 E-06	1.2 E-10	0.000
Di-Chlorobenzene	9.0 E-06	6.9 E-06	5.4 E-11	0.000
Cadmium compounds	8.2E-06	1.8 E-03	1.47 E-08	0.000
Chromium (VI) compounds	1.0E-05	1.2 E-02	1.2 E-07	0.000
Compound	Annual	Cancer	Cancer Risk	Hazard Quotient

	Concentration (ug/m3)	URF (ug/m3)		
Formaldehyde	5.5 E-04	1.3 E-05	7.1 E-10	0.000
Lead	3.7 E-06	1.2 E-05	4.4 E-11	0.000
Manganese	2.8 E-06	---	---	0.000
Nickel compounds	1.58 E-05	2.4 E-04	3.79 E-09	0.000
Toluene	2.55 E-05	---	---	0.000
			Total Cancer Risk	1.4 E-07
				0.000
				Total Hazard Index (HI)

* Further information on URFs and RfCs can be found at the following EPA website:
<http://www.epa.gov/ttn/atw/toxsource/chronicsources.html>

The Hazard Index for the project does not exceed 1. Pollutants with a Hazard Quotient (HQ) greater than 1 are considered to be at concentrations that could represent a health concern. Hazard Quotients above 1 do not represent areas where adverse health effects will be observed but indicate that the potential exists.

The additive cancer risk estimate from all HAPs is 1.4 additional cancer cases in ten million people. This means if an individual was exposed to these HAPs continuously for 70 years, the risk of getting cancer from this exposure would be 1.4 in ten million. The US EPA considers one in ten thousand (1.0E-04) excess cancer risks to be the upper range of acceptability with an ample margin of safety. The probability for the general public to be exposed to these HAPs for 24 hours a day, seven days a week, 52 weeks a year for 70 years is minimal.

Part G - Summary of Air Quality Analysis

SDI has applied for a modification of their facility with an increase of their PM₁₀ emissions. Whitley County is designated as attainment for all criteria. PM₁₀ emission rates associated with the proposed facility exceeded the respective significant emission rates. Modeling results taken from the latest version of the AERMOD model showed PM₁₀ impacts were predicted to be greater than the significant impact levels. The NAAQS and increment modeling for PM₁₀ showed no violations of the standards. Increment analysis showed that less than 80% of available increment was consumed. A Hazardous Air Pollutant (HAP) analysis was performed and showed no likely adverse impact. The nearest Class I area is Mammoth Cave National Park in Kentucky over 100 kilometers away from the source. Additional impact analysis was performed but the operation of the proposed facility will have no significant impact.