



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

May 5, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Steel Dynamics, Inc. / 183-18658-00030

FROM: Paul Dubenetzky
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, Room 1049, 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.dot 9/16/03



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Mr. Kevin Bort
Steel Dynamics, Inc.
2601 S. County Road 700 East
Columbia City, IN 46725

Re: **183-18658-00030**
First Permit Amendment to
PSD Permit 183-12692-00030

Dear Mr. Bort:

Steel Dynamics, Inc. (SDI) was issued a Prevention of Significant Deterioration (PSD) permit on January 1, 2001 for a steel mill. A letter requesting a change in the raw material mixture to be charge in the electric arc furnaces was received on March 11, 2004. Pursuant to the provisions of 326 IAC 2-1, the permit is amended as indicated in the attached technical support document.

All other conditions of the permit shall remain unchanged and in effect. Attached is the revised permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Ms. Iryn Calilung at (800) 451-6027, ext. 3-5692 or dial direct 317/233-5692.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ilc

Attachments: Permit 183-18658-00030
TSD for Permit 183-18658-00030

cc: File - Whitley County
U.S. EPA, Region V
Whitley County Health Department



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Air Compliance Section Inspector - RS



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**CONSTRUCTION PERMIT
 PREVENTION OF SIGNIFICANT DETERIORATION (PSD)
 OFFICE OF AIR QUALITY**

**Steel Dynamics, Inc.
 2601 County Road 700 East
 Columbia City, Indiana 46725**

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1.1, 326 IAC 2-2, 40 CFR 52.21, 40 CFR 52.780, and 40 CFR 124, with conditions listed on the attached pages.

Construction Permit No.: CP/PSD-183-10097-00030 Issuance Date: July 7, 1999 PSD Significant Modification No.: 183-12692-00030 Issuance Date: January 10, 2001	
Permit Amendment No.: 183-18658-00030 Issued by: Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: May 5, 2004



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Malfunction Report

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

The Permittee owns a steel beam mill.

Responsible Official: Richard P. Teets, Jr.
Source Address: 2601 County Road 700 East, Columbia City, Indiana 46725
Mailing Address: 2601 County Road 700 East, Columbia City, Indiana 46725
SIC Code: 3312
County Location: Whitley
County Status: Attainment for all criteria pollutants
Source Status: Major source, under PSD Program and Part 70 Program

A.2 Emission Units and Pollution Control Equipment Summary

This permit is to construct and operate the following facilities:

- (a) one (1) main single shell electric arc furnace (ID#s EAF 1a) and one (1) back-up single shell electric arc furnace (ID# EAF 1b). These furnaces are operated one at a time to produce molten steel at a maximum rate of 200 tons per hour. These furnaces 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, and the following emission control technologies:
- (1) DEC air gap for carbon monoxide (CO) and volatile organic compounds (VOC) emissions;
 - (2) low-NO_x/oxyfuel burners (combustion control) for nitrogen oxide (NO_x) emissions; and
 - (3) a baghouse (ID# 1) for particulate (PM and PM-10) emissions.
- 99 percent of the emissions escaping the DEC system are collected by the overhead roof exhaust system and exhaust through a stack (ID# 1). There are no roof monitors in the meltshop.
- (b) one (1) ladle metallurgy refining station (LMS) (ID# 3a) that exhausts 99 percent of its emissions are collected by the overhead roof exhaust system and exhaust through the common EAF baghouse stack. There are no roof monitors in the meltshop.
- (c) four (4) natural gas-fired ladle preheaters (ID# 3b through 3e), each with a maximum heat input rate of 10 million British Thermal Units per hour and each utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse.

- There are no roof monitors in the meltshop.
- (d) one (1) natural gas-fired ladle dryer (ID# 3f) with a maximum heat input rate of 10 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
 - (e) one (1) natural gas-fired tundish nozzle preheater (ID# 3g) with a maximum heat input rate of 10 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
 - (f) two (2) natural gas-fired tundish preheaters (ID#s 3h and 3i), each with a maximum heat input rate of 5 million British Thermal Units per hour and each utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
 - (g) one (1) natural gas-fired tundish dryer (ID# 3j) with a maximum heat input rate of 5 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
 - (h) one (1) continuous caster (ID# 3k) with a maximum casting rate of 200 tons of steel per hour, exhausting 99 percent of its emissions are collected by the overhead roof exhaust system and exhaust through the common EAF baghouse stack. There are no roof monitors in the meltshop.
 - (i) one (1) natural gas-fired reheat furnace (ID# 2) with a nominal heat input rate of 260 million British Thermal Units per hour and utilizing ultra low-NO_x combustion control technology. Combustion and process emissions exhaust through a stack (ID# 2).
 - (j) one (1) EAF dust storage silo (ID# 4) equipped with a bin vent filter for particulate control (PM/PM-10).
 - (k) eight (8) raw material storage silos (ID#s 5 through and 12), each equipped with a bin vent filter for particulate (PM/PM-10) control, and an associated raw material receiving station, with work practices used for particulate (PM/PM-10) control ;
 - (l) a slag handling and processing area (ID# 14) with a maximum rated capacity of 150 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:
 - (1) one (1) grizzly/feeder (ID# F-1) with a maximum capacity of 150 tons per hour;
 - (2) one (1) conveyor (ID# C-1) with a maximum capacity of 150 tons per hour;

- (3) one (1) conveyor (ID# C-2) with a maximum capacity of 135 tons per hour;
- (4) one (1) single deck screen (ID# SDSC-1) with a maximum capacity of 135 tons per hour;
- (5) one (1) primary crusher (ID# CR-1) with a maximum capacity of 15 tons per hour;
- (6) one (1) by-pass conveyor (ID# BC-1) with a maximum capacity of 15 tons per hour;
- (7) one (1) screen (ID# SC-1) with maximum capacity of 15 tons per hour;
- (8) one (1) stacker (ID# ST-1) with a maximum capacity of 6 tons per hour;
- (9) two (2) stackers (ID# ST-2 and ST-3), each with a maximum capacity of 3 tons per hour;
- (10) one (1) conveyor (ID# C-3) with a maximum capacity of 135 tons per hour;
- (11) four (4) stackers (ID#s ST-4 through ST-7), each with a maximum capacity of 33, 42, 30, and 24 tons per hour.

Particulate emissions from the slag processing area are controlled by water suppression and minimizing drop heights. Particulate emissions from the slag dumping area are controlled by a structure as defined in Section D.7 of this permit.

- (m) transporting on paved roadways and parking lots, unpaved roadways, and unpaved areas around slag storage piles and steel scrap piles.
- (n) one (1) cooling tower (ID# 13) with a maximum water flow of 15,000 gallons per minute; and
- (o) three (3) locomotives, each with a maximum diesel consumption of 10 gallons per hour.

A.3 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) because it is a major source, as defined in 326 IAC 2-7-1(22). This source shall submit its Part 70 application within 12 months after being subject to the Part 70 Rules.

SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

Construction Conditions [326 IAC 2-5.1]

B.1 General Construction Conditions

- (a) The data and information supplied with the application shall be the basis for this permit. Prior to any proposed change in construction which would result in an increase in potential to emit exceeding those specified in 326 IAC 2 requiring approval, the change must be approved by the Office of Air **Quality (OAQ)**.
- (b) This permit 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.

B.2 Effective Date of the Permit [40 CFR 124.15, 124.19, and 124.20]

Pursuant to 40 CFR 124.15, 124.19, and 124.20, the effective date of this permit shall be thirty (30) days after the service of notice of the decision, except as provided in 40 CFR 124. Three (3) days shall be added to the thirty (30) day period if service of notice is by mail.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)] [40 CFR 52.21(r)(2)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits) and 40 CFR 52.21(r)(2), the approval to construct shall become invalid if construction is not commenced within eighteen (18) months after receipt of this approval, if construction is suspended for a period of eighteen (18) months or more, or if construction is not completed within a reasonable time.

B.4 Permit Review Rules [326 IAC 2-5.1]

Notwithstanding condition no. B.5, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2-5.1 (Construction of New Sources).

B.5 First Time Operation Permit [326 IAC 2-5.1-3]

- (a) This document shall also become a first-time operation permit pursuant to 326 IAC 2-5.1-3 (Permits) when, prior to start of operation, the following requirements are met:
 - (1) The attached affidavit of construction shall be submitted to the Office of Air **Quality (OAQ)**, Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (2) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

- (b) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (c) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).

B.6 NSPS Reporting Requirement

That pursuant to the New Source Performance Standards (NSPS), Part 60.270a through 60.276a, Subpart AAa, the source owner/operator is hereby advised of the requirement to report the following information for affected NSPS facilities at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and
- (d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

Operation Conditions

B.7 General Operation Conditions

- (a) The data and information supplied in the application shall be the basis of this permit. Prior to any change in the operation which would result in an increase in potential to emit exceeding those specified in 326 IAC 2 requiring approval, the change must be approved by the Office of Air Quality (OAQ).
- (b) The Permittee shall 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 (IC13-17) and the rules promulgated thereunder.

B.8 Preventive Maintenance Plan [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 (PMP) within the date of initial start-up, 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;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, [OAQ](#), upon request and shall be subject to review and approval by IDEM, [OAQ](#).

B.9 Transfer of Permit [326 IAC 2-5.5-6]

Pursuant to 326 IAC 2-5.5-6 (Transfer of Permits):

- (a) In the event that ownership of the steel beam mill is changed, the Permittee shall notify the [OAQ](#), Permit Branch, in writing of the change in ownership, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The [OAQ](#) shall reserve the right to issue a new permit.

B.10 Permit Revocation [326 IAC 2-1.1-9(1)]

Pursuant to 326 IAC 2-1.1-9(1)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2 (Permit Review Rules).

B.11 Availability of Permit [326 IAC 2-5.1-3]

Pursuant to 326 IAC 2-5.1-3, the Permittee shall maintain the applicable permit on the premises of the source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards

C.1 Major Source

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-7 (Part 70 Permit Program), this source is a major source.

C.2 Opacity Limitations [326 IAC 5-1-2]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, or otherwise limited by this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.4 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5] [326 IAC 2-2-3]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations) and 326 IAC 2-2-3, fugitive particulate matter shall be controlled according to attached Fugitive Dust Control Plan (Attachment A).

C.5 Operation of Equipment [326 IAC 2-1.1-5] [326 IAC 2-2-3]

Except as provided otherwise, all air pollution control equipment listed in section D of this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation. The air pollution controls, operating practices, and quality of the raw materials shall be consistently implemented so as to not reduce the effectiveness of air pollution controls as required in Section D regardless of the production rate of the facilities regulated by this permit. This includes, but is not limited to, the sulfur content of raw materials, the operation of the thermal oxidation and negative pressure at the DEC air gap, the oil content and other quality control parameters of the scrap management program, fan amperage consistent with furnace operating mode, and burner operation.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

Testing Requirements

C.7 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures) and 326 IAC 2-1.1-11, except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by the IDEM, [OAQ](#).

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air [Quality](#)
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, [OAQ](#), within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, [OAQ](#), a reasonable written explanation within forty (40) days after the completion of the testing.

Compliance Monitoring Requirements

C.8 Compliance Monitoring

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment upon start-up. If due to circumstances beyond its control, this schedule cannot be met, the Permittee shall notify:

Indiana Department of Environmental Management
Compliance Branch, Office of Air [Quality](#)
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

in writing, no more than ninety (90) days after receipt of this permit, with full justification of the reasons for the inability to meet this date and a schedule which it expects to meet. If a denial of the request is not received before the monitoring is fully implemented, the schedule shall be deemed approved.

C.9 Pressure Gauge Specifications

Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.

Corrective Actions and Response Steps

C.10 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2.1.1-11]

- (a) When the results of a stack test performed in conformance with condition C.7 - Performance Testing, of this permit exceed the level specified in any condition of this

permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, [OAQ](#), within thirty (30) days of receipt of the test results. The Permittee also shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, [OAQ](#), that retesting in one-hundred and twenty (120) days is not practicable, IDEM, [OAQ](#), may extend the retesting deadline.
- (c) IDEM, [OAQ](#), reserves the authority to take any actions allowed under the law to resolve noncompliant stack tests.

Record Keeping and Reporting Requirements

C.11 Emission Statement [326 IAC 2-6]

- (a) The Permittee shall submit a certified, annual emission statement that must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:
 - (1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 assessment fee.
- (b) The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air [Quality](#)
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (c) The annual emission statement 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.12 Monitoring Data Availability [326 IAC 2-1.1-11]

- (a) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, as required by section D Compliance Monitoring and Record Keeping Requirements, reasons for this must be recorded.
- (b) At its discretion, the IDEM, [OAQ](#), may excuse such failures provided adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

- (c) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated above.

C.13 Records and Notice of Malfunction [326 IAC 1-6-2]

That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the IDEM, [OAQ](#), or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to IDEM, [OAQ](#). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence. The attached Malfunction Report Form (2 pages) or its substantial equivalent can be used for notifications made via facsimile and can be used as a follow up for notifications made via telephone.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.14 General Record Keeping Requirements [326 IAC 2-1.1-11]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, [OAQ](#) representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If an IDEM, [OAQ](#), representative makes a request for records to the Permittee, the Permittee shall furnish the records to IDEM, [OAQ](#), within a reasonable time.
- (b) All record keeping requirements not already legally required shall be implemented upon start-up.

C.15 General Reporting Requirements [326 IAC 2-1.1-11]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air [Quality](#)
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) Unless otherwise specified in this permit, any notice, report, or other submission 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) Unless otherwise specified in this permit, any report shall be submitted within thirty (30) days of the end of the reporting period.
- (d) The first report shall cover the period commencing on the date of operation of the source following the issuance of this permit and ending on the last day of the reporting period.

Ambient Air Monitoring

C.16 Post Construction Ambient Monitoring [326 IAC 2-2-4]

Within 180 days of the effective date of this permit, two (2) ambient monitoring sites shall be established at locations approved by IDEM, [OAQ](#).

- (a) A downwind monitoring site near the maximum impact area (Annual Maximum Impact Area: UTM East 639300 and UTM North 4553700) shall measure PM-10 and the following meteorological parameters: wind speed, wind direction, and outdoor temperature. This site shall operate for at least twenty-four (24) months after the permitted facilities begin operation. After the 24-month period, the Permittee may petition IDEM, [OAQ](#), to cease the monitoring activities and the department shall grant such petition within 45 days after receipt of the petition if it is established that the PM-10 levels continue to comply with the NAAQS and that the plant has minimal impact on air quality.
- (b) A monitoring site upwind from the maximum impact area shall measure PM-10. This site shall operate for at least twenty-four (24) months after the permitted facilities begin operation. After the 24-month period, the Permittee may petition IDEM, [OAQ](#), to cease the monitoring activities and the department shall grant such petition within 45 days after receipt of the petition if it is established that the PM-10 levels continue to comply with the NAAQS and that the plant has minimal impact on air quality.
- (c) Upon resolution of *American Trucking Ass'n v. U.S. EPA*, No. 97-1440 (D.C. Circuit), and subsequent USEPA administrative proceedings relative to the National Ambient Air Quality Standard for ozone and PM, the Department may require, consistent with the applicable NAAQS, the Permittee to operate an ozone monitor and/or a PM monitor to assess the impacts of the facility on local air quality. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.
- (d) The monitors shall meet the operating and maintenance criteria contained in the Indiana Department of Environmental Management, Office of Air [Quality](#), Quality Assurance Manual. Additionally, a monitoring/QA plan must be submitted and approved by IDEM, [OAQ](#), prior to commencement of the monitoring.
- (e) Ambient data along with precision and accuracy data from the monitors shall be submitted on a quarterly basis in a format approved by the Commissioner within sixty (60) days after the end of the quarter being reported.

C.17 Source Wide Hazardous Air Pollutant (HAP) Limitations [326 IAC 2-4.1-1]

- (a) The Permittee shall not allow any single HAP to be emitted from the source which exceeds ten (10) tons per year.

- (b) Notwithstanding Condition D.1.11, the Permittee shall not allow any combination of HAPs to be emitted from the source which exceeds twenty-five (25) tons per year.

Therefore, the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control) shall not apply.

SECTION D.1 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

one (1) main single shell electric arc furnace (ID#s EAF 1a) and one (1) back-up single shell electric arc furnace (ID# EAF 1b). These furnaces are operated one at a time to produce molten steel at a maximum rate of 200 tons per hour. These furnaces 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, and the following emission control technologies:

- (1) DEC air gap for carbon monoxide (CO) and volatile organic compounds (VOC) emissions;
- (2) low-NO_x/oxyfuel burners (combustion control) for nitrogen oxide (NO_x) emissions; and
- (3) a baghouse (ID# 1) for particulate (PM and PM-10) emissions.

99 percent of the emissions escaping the DEC system are collected by the overhead roof exhaust system and exhaust through a stack (ID# 1). There are no roof monitors in the meltshop.

Emissions Limitation and Standards

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

Pursuant to 326 IAC 2-1.1-5 (Air Quality Requirements), the Permittee shall only operate one electric arc furnace (EAF) at a time to produce molten steel at a maximum rate of 200 tons per hour.

D.1.2 Nitrogen Oxides (NO_x) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), the EAF auxiliary burners shall be limited to low-NO_x/oxyfuel burners and NO_x emissions from the EAF shall not exceed the following:

- (a) NO_x emissions from the EAF shall not exceed 0.51 pounds per ton of steel produced and 102 pounds of NO_x per hour, based on a three (3) hour block average. The Permittee shall demonstrate compliance with these BACT limits within the time period specified in condition D.1.15, item (a)(1). These BACT limits shall be applicable only until compliance with 0.35 pounds per ton of steel produced and 70 pounds per hour BACT limits is demonstrated.
- (b) NO_x emissions from the EAF shall not exceed 0.35 pounds per ton of steel produced and 70 pounds of NO_x per hour, based on a three (3) hour block average. The Permittee shall demonstrate compliance with this BACT limit within the time period specified in condition D.1.15, item (a)(2).
- (c) If the Permittee applies for a permit modification to address the 70 pounds per hour limit, IDEM, OAQ, shall issue a final decision on such application within 120 days upon IDEM's receipt of the application.

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 EAF 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), filterable PM emissions from the EAF baghouse shall not exceed 0.0052 grains per dry standard cubic feet. (Attached is a copy of 40 CFR Part 60, Subpart AAa.)

D.1.5 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Process Operations), filterable PM emissions from the EAF stack shall not exceed 58.5 pounds per hour when operating at the maximum process weight rate of 200 tons per hour.

The pounds 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.1.6 Particulate Matter (PM/PM-10) - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), filterable PM/PM-10 emissions from the EAF shall be controlled by a baghouse. Filterable PM/PM-10 emissions from the EAF baghouse shall not exceed 0.0018 grains per dry standard cubic feet, as determined by the compliance test required in Condition D.1.15.
- (b) Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), total PM/PM-10 (including condensible PM-10) emissions from the EAF shall not exceed 0.0052 grains per dry standard cubic feet. The Department may revise this permit to adjust the total PM/PM-10 limitation based upon the results of the stack test required in Condition D.1.15. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.
- (c) There shall be no roof monitors in the melt shop. 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 baghouse.
- (d) Cross-draft partitions shall be constructed surrounding the EAF in a manner that will promote good capture efficiency for the meltshop baghouse.
- (e) A segmented canopy hood shall be constructed above the EAF. The canopy shall be divided into separate sections and the dampers operated in a manner that will maximize the draft directly above the point of greatest emissions.

D.1.7 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), SO₂ emissions from the EAF shall not exceed 50.0 pounds of SO₂ per hour, as determined by the compliance test required in condition D.1.15.

D.1.8 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), CO emissions from the EAF shall be controlled by thermal oxidation and maintaining a negative pressure at the DEC air gap. CO emissions from the EAF shall not exceed 2.0 pounds per ton of steel produced and 400 pounds of CO per hour, based on a three (3) hour block average.

D.1.9 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 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 at the DEC air gap.

D.1.10 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), VOC emissions from the EAF shall be minimized in accordance with the attached Scrap Management Program (Attachment B) and shall be controlled by thermal oxidation and maintaining a negative pressure at the DEC air gap. VOC emissions from the EAF shall not exceed 18 pounds of VOC per hour, based on a three (3) hour block average.

D.1.11 Lead and Hazardous Air Pollutant (HAP) Limitations [326 IAC 2-1.1-4] [326 IAC 2-2] [326 IAC 2-4.1-1]

Subject to Condition C.17 of this permit, the Permittee shall not allow:

- (a) lead to be emitted from the meltshop baghouse controlling the meltshop operations (EAF, LMS, and CC) in a quantity equal to or greater than 0.114 pounds per hour.
- (b) lead content of the EAF baghouse dust to exceed five-tenths percent (0.5%) by weight.
- (c) mercury to be emitted from the EAF stack in a quantity equal to or greater than 0.02 pounds per hour. This limitation is not federally enforceable.
- (d) beryllium to be emitted from the EAF stack in a quantity equal to or greater than 5.75×10^{-5} pounds per hour. This limitation is not federally enforceable.
- (e) fluorides to be emitted from the EAF stack in a quantity equal to or greater than 0.68 pound per hour.
- (f) manganese compounds to be emitted from the EAF stack in a quantity equal to or greater than 1.14 pounds per hour.

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

D.1.12 Visible Emission Limitations - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements):

- (a) Visible emissions from the EAF baghouse stack (ID #1) 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).
- (b) All fugitive particulate matter (PM and PM-10,) emissions generated during furnace operations shall be captured by the melt shop roof canopy and ducted to the EAF baghouse (ID# 1) such that visible emissions generated at the EAF 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.
- (c) Additional 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 (Visible Emissions Limitations) under condition C.2 - Opacity Limitations.

D.1.13 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 EAF any gases that:

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

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

D.1.14 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with condition B.8 - Preventive Maintenance Plan of this permit, is required for the meltshop and associated control devices.

Compliance Determination Requirements

D.1.15 Testing Requirements [326 IAC 2-1.1-11] [40 CFR 60.275a]

- (a)
 - (1) Pursuant to 326 IAC 2-1.1-11, the Permittee shall test for NO_x on the EAF within 60 days after achieving maximum capacity, but no later than 365 days after initial start up, utilizing methods as approved by the Commissioner. This test shall be performed to determine compliance with conditions D.1.2, item (a).
 - (2) Pursuant to 326 IAC 2-1.1-11, the Permittee shall test for NO_x on the EAF within 540 days after initial start up, utilizing methods as approved by the Commissioner. This test shall be performed to determine compliance with conditions D.1.2, item (b), and shall be repeated at least once every year from the date of the valid compliance demonstration, until the Title V permit of this source is in effect.
- (b) Pursuant to 326 IAC 2-1.1-11, the Permittee shall test for SO₂ on the EAF within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, utilizing methods as approved by the Commissioner. This test shall be performed to determine compliance with conditions D.1.7, respectively, and shall be repeated at least once every

year from the date of the valid compliance demonstration, until the Title V permit of this source is in effect.

With the submission of the test protocol as required under condition C.7 of this permit, at a minimum, the Permittee shall include the information of sulfur content of the raw materials to be used in testing in comparison to the raw materials used for the past year.

- (c) Pursuant to 326 IAC 2-1.1-11 and 40 CFR 60.275a, the Permittee shall test for filterable and condensable PM/PM-10 on the EAF within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, utilizing 40 CFR Part 60, Appendix A, Method 5, Method 201 or 201A, Method 202 or other methods as approved by the Commissioner. This test shall be performed to determine compliance with conditions D.1.4, D.1.5, and D.1.6 and shall be repeated at least once every five (5) years from the date of the valid compliance demonstration.
- (d) Pursuant to 326 IAC 2-1.1-11, the Permittee shall perform speciation tests from the EAF stack for emissions of HAPs listed under Section 112 (b) of the CAA within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, utilizing methods as approved by the Commissioner. These tests shall be performed to gather information on HAP emissions from the EAF stack and to demonstrate compliance with condition D.1.11 of this permit. The information shall include, as a minimum, results for hexane, toluene, benzene, formaldehyde, fluorides, naphthalene, arsenic compounds, beryllium compounds, cadmium compounds, chromium compounds, lead compounds, manganese compounds, mercury compounds, nickel compounds, and selenium compounds. The Permittee shall stack test for lead utilizing Method 12 and a method detection level which is below the emission limit. This stack test for lead emissions shall be performed annually until the Title V permit of this source is in effect.

Test results below the detection level indicate compliance with condition D.1.11 of this permit.

- (e) Pursuant to 326 IAC 2-1.1-11 and 40 CFR 60.275a, the Permittee shall perform an initial compliance test for opacity on the EAF baghouse stack (ID# 1) within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, utilizing 40 CFR Part 60, Appendix A, Method 9, or other methods as approved by the Commissioner. This test shall be performed to determine compliance with condition D.1.12 and D.1.13.
- (f) The baghouse EAF dust shall be sampled and analyzed for lead content on a monthly basis according to the procedures specified in the EPA publication SW-846-6010B, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*.

D.1.16 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 install, calibrate, certify, operate, and maintain a continuous monitoring system for measuring CO and VOC emissions rates in pounds per hour from the EAF stack (ID# 1) in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.
- (b) The Permittee shall submit to IDEM, OAQ, within ninety (90) days after monitor installation, a complete written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.

- (c) 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.1.17 Visible Emission Observations and Continuous Opacity Monitoring [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, the Permittee shall do the following to demonstrate compliance with conditions D.1.12(a) and D.1.13(a):
- (1) The Permittee shall install, calibrate, certify, operate, and maintain a continuous monitoring system to measure opacity from the EAF stack (ID# 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 monitor installation, a written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.
- (b) If the continuous opacity monitor is down for more than one (1) hour, the Permittee shall perform visible emission observations once per hour by having a trained employee record whether emissions are normal or abnormal.
- (1) 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.
 - (2) 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.

Compliance Monitoring Requirements

D.1.18 Baghouse Operating Condition [326 IAC 2-1.1-11]

The baghouse (ID# 1) shall be operated at all times when the EAF is in operation.

- (a) The Permittee shall record the pressure drop across the baghouse at least once per shift when the EAF is in operation.
- (b) Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 4 - 10 inches of water to monitor compliance with the particulate emission limits in operation conditions D.1.4, D.1.5, and D.1.6.
- (c) The Preventive Maintenance Plan for the baghouse shall contain troubleshooting contingency and response steps for when the pressure drop reading is outside of the above mentioned range for any one reading.
- (d) The instruments used for determining the pressure shall comply with condition C.9 - Pressure Gauge Specifications of this permit and shall be calibrated at least once every six (6) months.

D.1.19 Baghouse Inspections [326 IAC 2-1.1-11]

An inspection shall be performed annually of all bags controlling the EAF. All defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.

D.1.20 Broken or Failed Bag Detection [326 IAC 2-1.1-11]

- (a) The Permittee shall install and operate a continuous bag leak detection system. The bag leak detection system shall meet the following requirements:
- (3) The bag leak detection system 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 .
 - (4) The bag leak detection system sensor must provide output of relative particulate matter loadings.
 - (5) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loadings is detected over a preset level.
 - (6) The bag leak detection system shall be installed and 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 installation, operation, and adjustment of the system.
 - (7) 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.
 - (8) 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.
 - (9) The bag detector must be installed downstream of the baghouse.
- (2) In the event of a bag leak detection system alarm, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Preventive Maintenance Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Preventive Maintenance Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. The Permittee shall keep a minimum of 100 bags on site to assure timely response to bag failures.

D.1.21 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 item (c) of this condition, the Permittee shall check and record on a once-per-shift basis the furnace static pressure and either:

- (1) check and record the control system fan motor amperes and damper positions on a once-per-shift basis; or
- (2) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or
- (3) install, 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) When the Permittee is required to demonstrate compliance with the standard in condition D.1.13(b) and at any other time IDEM, [OAQ](#), or the U.S. EPA may require, that either the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the EAF.
- (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) The Permittee shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. 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) 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 and refining period.

D.1.22 DRI, Charge and Injection Carbon Sampling and Analysis [326 IAC 2-1.1-11]

- (a) The sulfur content of the direct iron (DRI), charge carbon, and injection carbon added into the EAF shall not exceed the following in order to monitor compliance with condition D.1.7:

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

injection carbon	2.5
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- (b) The Permittee may utilize the following alternative mixture of sulfur content of the charge carbon and injection carbon added into the EAF in order to monitor compliance with Condition D.1.7:

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 EAF.

- (c) The Permittee shall obtain vendor certifications and/or analyses to verify that shipments of raw materials do not exceed the thresholds stated in section (a).

D.1.23 Transformer Power Usage Monitoring [326 IAC 2-1.1-11]

Pursuant to 326 IAC 2-1.1-11, the Permittee shall monitor the transformer power usage at both EAFs in order to document compliance with Condition D.1.1.

D.1.24 Monitoring for Total Building Enclosure [326 IAC 2-1.1-11]

Within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, the Permittee shall demonstrate compliance with the requirement to provide total enclosure of the meltshop, Condition D.1.6(c) 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 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:
- (1) The propeller of the anemometer shall be made of a material of uniform density and shall be properly balanced to optimize performance.
 - (2) The measurement range of the anemometer shall extend to at least 300 meters per minute (1,000 feet per minute).
 - (3) 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.

The Preventive Maintenance Plan for the meltshop shall contain troubleshooting contingency and response steps for when doorway in-draft is not demonstrated for any doorway that is open during normal operation.

- (2)(A) The Permittee shall install a differential pressure gage on the leeward wall of the building to measure the pressure difference between the inside and outside of the building.
- (B) The pressure gage 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.

The Preventive Maintenance Plan for the meltshop shall contain troubleshooting contingency and response steps for when the pressure differential between the inside and outside of the building is less than 0.02 mm Hg.

Record Keeping and Reporting Requirements

D.1.25 Record Keeping Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) To document compliance with operation condition D.1.16, 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 operation condition D.1.17, the Permittee shall maintain records:
 - (1) 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.
 - (2) of visible emission readings at the EAF stack and make available upon request to IDEM, [OAQ](#), and the U.S. EPA.
- (c) To document compliance with operation condition D.1.18, the Permittee shall maintain the following:
 - (1) Records of the following baghouse operational parameters once per shift during normal operation:
 - (A) Differential pressure; and
 - (B) Cleaning cycle: operation.
 - (2) Documentation of all response steps implemented for every pressure drop reading that is outside of the range.
- (d) To document compliance with Condition D.1.15(f), The Permittee shall maintain monthly records of the results of the lead analyses of the baghouse EAF dust. The lead content of the baghouse EAF dust shall be recorded as a percent by weight.
- (e) Pursuant to 40 CFR 60.276a, records of the measurements required in 40 CFR 60.274a, as also required in condition D.1.21, must be retained for at least 5 years following the date of the measurement.

- (f) To document compliance with operation condition D.1.22, the Permittee shall maintain records of the verification of sulfur content of DRI, charge carbon, and injection carbon added into the EAF.
- (g) To document compliance with operation condition D.1.23, the Permittee shall maintain records of the transformer power usage of both EAFs sufficient to document that only one EAF has operated at any given time.
- (h) To document compliance with operation condition D.1.20, 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.
- (i) All records shall be maintained in accordance with condition C.14 - General Record Keeping Requirements of this permit.

D.1.26 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) 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 within thirty (30) calendar days following the end of each calendar quarter and in accordance with condition C.15 - General Reporting Requirements of this permit.
- (b) Pursuant to 40 CFR 60.276a, the Permittee shall comply with the following reporting requirements:
 - (1) The Permittee shall submit a semi-annual written report of exceedances of the control device opacity to IDEM, OAQ, and the U.S. EPA.
 - (2) The Permittee shall submit semi-annually any values that exceed furnace static pressure established under 40 CFR 60.274a(g) and 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 the U.S. EPA.
 - (3) The Permittee shall furnish to IDEM, OAQ, and the U.S. EPA a written report of the results of the compliance emission test required to determine compliance with conditions D.1.4 and D.1.13. 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:

- (i) List of charge and tap weights and materials;
 - (ii) Heat times and process log;
 - (iii) Control device operation log; and
 - (iv) 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 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

one (1) ladle metallurgy refining station (LMS) (ID# 3a) that exhausts 99 percent of its emissions are collected by the overhead roof exhaust system and exhaust through the common EAF baghouse stack. There are no roof monitors in the meltshop.

Emissions Limitation and Standards

D.2.1 Particulate Matter (PM/PM-10) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), at least 99 percent of the filterable and condensible PM/PM-10 emissions from the LMS shall be captured by the melt shop roof canopy then controlled by the common EAF baghouse, which limit is set forth at condition D.1.6.

D.2.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Process Operations), filterable PM emissions from the LMS shall not exceed 58.5 pounds per hour when operating at the maximum process weight rate of 200 tons per hour.

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

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

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.

Compliance Determination, Compliance Monitoring, Record Keeping and Reporting Requirements

Refer to section D.1 of this permit for compliance determination, compliance monitoring, record keeping, and reporting requirements that may apply to the EAF baghouse.

SECTION D.3 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

- (1) four (4) natural gas-fired ladle preheaters (ID# 3b through 3e), each with a maximum heat input rate of 10 million British Thermal Units per hour and each utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
- (2) one (1) natural gas-fired ladle dryer (ID# 3f) with a maximum heat input rate of 10 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
- (3) one (1) natural gas-fired tundish nozzle preheater (ID# 3g) with a maximum heat input rate of 10 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
- (4) two (2) natural gas-fired tundish preheaters (ID#s 3h and 3i), each with a maximum heat input rate of 5 million British Thermal Units per hour and each utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.
- (5) one (1) natural gas-fired tundish dryer (ID# 3j) with a maximum heat input rate of 5 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion emissions exhaust inside the building, and are collected by the overhead roof exhaust system and ducted to the meltshop baghouse. There are no roof monitors in the meltshop.

Emissions Limitation and Standards

D.3.1 Nitrogen Oxides (NO_x) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), the above-mentioned facilities shall be limited to the use of low-NO_x natural gas-fired burners such that NO_x emissions shall not exceed 0.10 pound per million British Thermal Units.

Compliance Determination Requirements

D.3.2 Testing Requirements [326 IAC 2-1.1-11]

Testing of the above-mentioned facilities is not required by this permit.

SECTION D.4 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

one (1) continuous caster (ID# 3k) with a maximum casting rate of 200 tons of steel per hour, exhausting 99 percent of its emissions are collected by the overhead roof exhaust system and exhaust through the common EAF baghouse stack. There are no roof monitors in the meltshop.

Emissions Limitation and Standards

D.4.1 Particulate Matter (PM/PM10) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), at least 99 percent of the filterable and condensible PM/PM-10 emissions from the continuous caster shall be captured by the overhead roof exhaust system, then controlled by the common EAF baghouse, which limit is set forth at condition D.1.6.

D.4.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Process Operations), filterable PM emissions from the continuous caster shall not exceed 58.5 pounds per hour when operating at the maximum process weight rate of 200 tons per hour.

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

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

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

Compliance Determination, Compliance Monitoring, Record Keeping and Reporting Requirements

Refer to section D.1 of this permit for compliance determination, compliance monitoring, record keeping, and reporting requirements that may apply to the EAF baghouse.

SECTION D.5 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

one (1) natural gas-fired reheat furnace (ID# 2) with a nominal heat input rate of 260 million British Thermal Units per hour and utilizing low-NO_x combustion control technology. Combustion and process emissions exhaust through a stack (ID# 2).

Emissions Limitation and Standards

D.5.1 Nitrogen Oxides (NO_x) - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), the reheat furnace 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 million British Thermal Units.
- (b) The Permittee shall not allow more than 189.8 million cubic feet of natural gas to be combusted in the reheat furnace on a monthly basis averaged over a twelve (12) month period.

D.5.2 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), CO emissions from the reheat furnace shall not exceed 0.03 pound per million British Thermal Units.

Compliance Determination Requirements

D.5.3 Testing Requirements [326 IAC 2-1.1-11]

Pursuant to 326 IAC 2-1.1-11, the Permittee shall perform NO_x and CO testing on the reheat furnace within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, utilizing methods as approved by the Commissioner. This test shall be performed to determine compliance with conditions D.5.1 and D.5.2, respectively, and shall be repeated at least once every five (5) years from the date of the valid compliance demonstration.

Record Keeping and Reporting Requirements

D.5.4 Record Keeping Requirements [326 IAC 2-1.1-11]

- (a) To document compliance with operation condition D.5.1(b), the Permittee shall maintain records of the natural gas combusted in the reheat furnace each month.
- (b) All records shall be maintained in accordance with condition C.14 - General Record Keeping Requirements of this permit.

SECTION D.6 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

- (a) one (1) EAF dust storage silo (ID# 4) that is equipped with a bin vent filter for particulate control (PM/PM-10).
- (b) eight (8) raw material storage silos (ID#s 5 through and 12), each equipped with a bin vent filter for particulate (PM/PM-10) control, and an associated raw material receiving station, with work practices used for particulate (PM/PM-10) control.

Emissions Limitation and Standards

D.6.1 Particulate Matter (PM/PM-10) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), filterable PM/ PM-10 emissions from each of the nine (9) storage silos shall not exceed 0.01 grains per dry standard cubic feet.

D.6.2 Visible Emission Limitation - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), visible emissions from each of the nine (9) storage silos shall not exceed three percent (3%) opacity.
- (b) Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), visible emissions from the EAF 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.6.3 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.6.4 Visible Emission Limitations [40 CFR Part 60, Subpart AAa]

Pursuant to 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.6.5 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with condition B.8 - Preventive Maintenance Plan, of this permit, is required for the nine (9) storage silos and associated control devices.

Compliance Determination Requirements

D.6.6 Testing Requirements [326 IAC 2-1.1-11]

Testing of the nine (9) storage silos is not required by this permit.

Compliance Monitoring Requirements

D.6.7 Visible Emissions Notations [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) The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

D.6.8 Bin Vent Filter Inspections [326 IAC 2-1.1-11]

An inspection shall be performed each calendar quarter of all bin vent filters controlling the nine (9) storage silos. All defective filters shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.

D.6.9 Broken or Failed Bin Vent Filter Detection [326 IAC 2-1.1-11]

In the event that filter failure has been observed:

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Preventive Maintenance Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Preventive Maintenance Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion.
- (b) For single compartment filters, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced.

Record Keeping Requirements

D.6.10 Record Keeping Requirements [326 IAC 2-1.1-11]

- (a) To document compliance with condition D.6.7, the Permittee shall maintain records of the following:
 - (1) Weekly visible emission notations of the bin vent exhaust and raw material receiving station.
 - (2) 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.14 - General Record Keeping Requirements of this permit.

SECTION D.7 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

a slag handling and processing area (ID# 14) with a maximum rated capacity of 150 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:

- (1) one (1) grizzly/feeder (ID# F-1) with a maximum capacity of 150 tons per hour;
- (2) one (1) conveyor (ID# C-1) with a maximum capacity of 150 tons per hour;
- (3) one (1) conveyor (ID# C-2) with a maximum capacity of 135 tons per hour;
- (4) one (1) single deck screen (ID# SDSC-1) with a maximum capacity of 135 tons per hour;
- (5) one (1) primary crusher (ID# CR-1) with a maximum capacity of 15 tons per hour;
- (6) one (1) by-pass conveyor (ID# BC-1) with a maximum capacity of 15 tons per hour;
- (7) one (1) screen (ID# SC-1) with maximum capacity of 15 tons per hour;
- (8) one (1) stacker (ID# ST-1) with a maximum capacity of 6 tons per hour;
- (9) two (2) stackers (ID# ST-2 and ST-3), each with a maximum capacity of 3 tons per hour;
- (10) one (1) conveyor (ID# C-3) with a maximum capacity of 135 tons per hour;
- (11) four (4) stackers (ID#s ST-4 through ST-7), each with a maximum capacity of 33, 42, 30, and 24 tons per hour.

Particulate emissions from the slag processing area are controlled by water suppression and minimizing drop heights.

Particulate emissions from the slag dumping area are controlled by a structure as defined in Section D.7 of this permit.

Emissions Limitation and Standards

D.7.1 Annual Slag Production Limitation [326 IAC 2-1.1-5]

Pursuant to 326 IAC 2-1.1-5, the Permittee shall not process more than 262,800 tons of slag per year.

D.7.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Process Operations), combined filterable PM emissions from the crushing, screening, conveyor transfer points, continuous stacking operations shall not exceed 55.4 pounds per hour. This limit is based on the maximum

process weight rate of 150 tons per hour. PM 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 requirements of condition D.7.3 for these operations.

The pounds 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.7.3 Visible Emission Limitations - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), fugitive dust emissions from the various slag handling and processing operations shall be controlled in accordance with the attached Fugitive Dust Control Plan such that the following visible emission limitations are not exceeded:

Slag Handling/Processing Operation	Visible Emission Limitation (% opacity)
Transferring of skull slag to slag pot	10 % opacity, six (6) minute average
Pouring of liquid slag from EAF or LMF to slag pots	3% opacity, six (6) minute average on any building opening
Dumping of liquid slag from slag pot to slag pit and cooling	3 % opacity, six (6) minute average
Transferring of skull slag from slag pot to skull pit	5 % opacity, six (6) minute average
Digging skull slag pits	5 % opacity, six (6) minute average
Digging slag pits	3 % opacity, six (6) minute average
Stockpiling of slag adjacent to the grizzly feeder	3 % opacity, six (6) minute average
Wind erosion of stockpiles	3 % opacity, six (6) minute average
Crushing	3 % opacity, six (6) minute average
Screening	3 % opacity, six (6) minute average
Conveyor transfer points	3 % opacity, six (6) minute average
Continuous stacking of processed slag to stockpiles	3 % opacity, six (6) minute average
Loadout of processed slag from stockpiles to haul trucks for shipment	3 % opacity, six (6) minute average
Inplant hauling of slag pots (filled) and processed slag (this does not include activities covered under section D.8.)	3 % opacity, six (6) minute average

D.7.4 Slag Dumping Fugitive Particulate Matter (PM/PM10) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), the slag dumping pits shall be covered by a partially enclosed, roofed structure to reduce PM 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:

- (1) reduction of PM emissions during dumping and partial shielding of prevailing winds; and
- (2) dissipation of heat and consideration of safety concerns within the structure.

D.7.5 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with condition B.8 - Preventive Maintenance Plan, of this permit, is required for the slag handling and processing operations and associated control devices.

Compliance Determination Requirements

D.7.6 Testing Requirements [326 IAC 2-1.1-11]

Pursuant to 326 IAC 2-1.1-11, the Permittee shall perform an initial compliance test for opacity on the above-mentioned slag handling and processing operations within 60 days after achieving maximum capacity, but no later than 180 days after initial start up, utilizing 40 CFR Part 60, Appendix A, Method 9, or other methods as approved by the Commissioner. This test shall be performed to determine compliance with conditions D.7.1 and shall be repeated at least once every five (5) years from the date of the valid compliance demonstration.

SECTION D.8 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

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

Emissions Limitation and Standards

D.8.1 Visible Emission Limitations - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), 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 attached Fugitive Dust Control Plan (Attachment A) such that the following limitations are not exceeded:

- (a) Paved surface silt loading shall not exceed 9.7 grams of silt per square meter and the average 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:
- (1) The first will be taken at the time of emission generation.
 - (2) The second will be taken five (5) seconds later.
 - (3) 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.

- (b) 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:
- (1) The first will be taken at the time of emission generation.
 - (2) The second will be taken five (5) seconds later.
 - (3) 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.

Compliance Determination Requirements

D.8.2 Testing Requirements [326 IAC 2-1.1-11]

Testing of the above-mentioned operations is not required by this permit.

SECTION D.9 EMISSION UNIT OPERATION CONDITIONS

The information describing the processes contained in this description box is descriptive information and does not constitute enforceable conditions.

- (a) one (1) cooling tower (ID# 13) with a maximum water flow of 15,000 gallons per minute; and
- (b) three (3) locomotives, each with a maximum diesel consumption of 10 gallons per hour.

Emissions Limitation and Standards

D.9.1 Particulate Matter (PM/PM-10) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD - Control Technology Review; Requirements), filterable PM/PM-10 emissions from the cooling tower shall not exceed 0.008 pound per hour.

D.9.2 Nitrogen Oxides (NO_x) - Air Quality Impact [326 IAC 2-2-5]

Pursuant to 326 IAC 2-2-5 (PSD - Air Quality Impact; Requirements), NO_x emissions from the locomotives shall not exceed 490 pounds per kilogallon of diesel fuel.

Compliance Determination Requirements

D.9.3 Testing Requirements [326 IAC 2-1.1-11]

Testing of the cooling tower and locomotives is not required by this permit.

MALFUNCTION REPORT
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ? _____, 100 LBS/HR VOC ? _____, 100 LBS/HR SULFUR DIOXIDE ? _____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ? _____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION
_____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: **Steel Dynamics, Inc. (SDI)** PHONE NO. _____
LOCATION: Columbia City, Whitley County
PERMIT NO. 183-10097 183-12692 and 183-18658
AFS PLANT ID: 183-00030 AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: _____ / _____ / 20____ _____ AM / PM
ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE _____ / _____ / 20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____
ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS: _____

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____

(SIGNATURE IF FAXED 317 233-5967)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

PAGE 1 OF 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD)
Permit Amendment to a
Prevention of Significant Deterioration (PSD) Permit

Source Background and Description

Source Name:	Steel Dynamics, Inc. (SDI)
Source Location:	2601 County Road 700 East, Columbia City, IN 46725
Mailing Address:	2601 County Road 700 East, Columbia City, IN 46725
Responsible Official:	Vice President and General Manager
County:	Whitley
SIC Code:	3312 (Steel Mill)
NAICS Code:	331211
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Major source under Section 112 of the CAA
Permit Number:	PSD/SSM 183-18658-00030
Permit Writer:	Iryn Calilung 317/233-5692 icalilun@dem.state.in.us

Permitting History

Steel Dynamics, Inc. (SDI) owns and operates a mini mill in Whitley County that produces a variety of carbon and low alloy structural steel products.

SDI has been operating under the following issued air approvals:

Table 1 - - - Issued Approvals	
Permit Number	Issuance Dates
CP/PSD No. 183-10097-00030	July 7, 1999
PSD Modification No. 183-12692-00030	January 10, 2001
PSD No. 183-15170-00030	May 31, 2002

SDI is a Part 70 source. SDI submitted their Part 70 permit application on April 10, 2003. The Part 70 permit application is still under review by the Office of Air Quality (OAQ).

Description of the Proposed Modification

On March 9, 2004, Steel Dynamics, Inc. (SDI) submitted a permit modification application requesting to use different mixture of materials to be charged to the electric arc furnaces (EAFs). This request is due to the severe shortages of carbon and coke.

SDI is currently allowed to charge in the EAFs a mixture consisting of approximately 80% scrap with 0.04% sulfur content and direct reduced iron (DRI) for the remaining 20%. SDI is required to sample and analyze the sulfur content of the DRI, charge carbon and injection carbon and shall not exceed the following sulfur content percentages:

Table 2 - - Existing Sulfur Content of Raw Materials Used	
Raw Material	Sulfur Content (%)
direct reduced iron (DRI)	0.20
charge carbon	0.6
injection carbon	2.5

Compliance with the above mentioned sampling and monitoring requirements verifies compliance with the Prevention of Significant Deterioration (PSD) best available control technology (BACT) limit of 50 pounds of SO₂ per hour.

SDI seeks to have the operational flexibility to use different mixture of scrap, charge carbon and injection carbon and still comply with the SO₂ PSD BACT limit.

- Maintain 80% of the mixture as scrap at approximately 0.04% sulfur.
- Eliminate the use of DRI.
- Use higher sulfur content charge carbon and injection carbon, as shown below.

Table 3 - - Proposed Sulfur Content of Raw Materials	
Raw Material	Sulfur Content (%)
direct reduced iron (DRI)	--
charge carbon	2.0
injection carbon	4.0

On April 8, 2004, SDI submitted supporting documents consisting of a letter from a SDI supplier, and articles confirming the severe shortages in carbon and coke used by the steel industry.

There is no new construction involved in this permit modification application.

Emissions Calculations

The table below summarizes the impact of the proposed alternative operating scenario in terms of potential emissions:

Table 4 - - Raw Material Mixture				
	Existing Raw Material Mixture		Proposed Raw Material Mixture	
	% S	lbs/hour SO ₂	% S	lbs/hour SO ₂
Scrap	0.04	50	0.04	50
DRI	0.2		--	
Charge Carbon	0.6		2	
Injection Carbon	2.5		4	

- (1) The combined maximum rate of the electric arc furnaces (EAFs) is 200 tons of metal per hour.
- (2) Existing Raw Material Mixture
 - (a) 80% of the charge mixture is scrap, and 20% is DRI.
 - (b) The existing SO₂ PSD BACT limit for the EAFs is 50 pound per hour.
- (3) Proposed Raw Material Mixture
 - (a) Eliminate the use of DRI.
 - (b) 100% of the charge mixture is scrap

$$\text{Scrap} = (200 \text{ tons/hour}) * (2000 \text{ lbs/ton}) = 400,000 \text{ lbs/hour}$$
 - (c) Increase the sulfur content of the charge carbon and injection carbon.
 - (d) Maintain the SO₂ PSD BACT limit of 50 lbs/hour.
- (4) Since there is change in the SO₂ PSD BACT limit, the request to use different mixture is incorporated into the permit.

County Attainment Status

Steel Dynamics, Inc. (SDI) is located in Whitley County.

Table 13		Whitley County	
Pollutant		Status	
PM ₁₀		Attainment	
SO ₂		Attainment	
NO ₂		Attainment	
Ozone		Attainment	
CO		Attainment	
Lead		Attainment	

- (1) Volatile organic compounds (VOC) and Ozone
VOC are precursors for the formation of ozone. Therefore, VOC 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 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD) 326 IAC 2-2.
- (2) Criteria Pollutants
Whitley County has been classified as attainment or unclassifiable for all the other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Federal and State Rules Applicability Determination

- (1) There are no changes on the existing applicable federal and state rules due to the proposed alternative scenario.
- (2) There are no new additional applicable federal and state rules that apply due to the proposed alternative scenario.

Compliance Determination and Monitoring

The existing compliance monitoring for SO₂ PSD BACT limit is revised as follows as a result of the addition of the alternative operating scenario (new requirements are in **bold** fonts for emphasis):

D.1.22 DRI, Charge and Injection Carbon Sampling and Analysis [326 IAC 2-1.1-11]

- (a) The sulfur content of the direct iron (DRI), charge carbon, and injection carbon added into the EAF shall not exceed the following in order to monitor compliance with condition D.1.7:

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

- (b) **The Permittee may utilize the following alternative mixture of sulfur content of the charge carbon and injection carbon added into the EAF in order to monitor compliance with Condition D.1.7:**

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 EAF.

- (~~b~~ c) The Permittee shall obtain vendor certifications and/or analyses to verify that shipments of raw materials do not exceed the thresholds stated in sections (a) **and (b)**.

Additional Administrative Change

The entire permit was also revised to change the name of the permitting office from Office of Air Management (OAM) to Office of Air Quality (OAQ).

Recommendation and Conclusion

- (1) Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 11, 2004. Additional information was received on April 8, 2004, and April 19, 2004.
- (2) The applicant has provided a copy of the application in the Peabody Public Library, 1160 East Highway 205, Columbia City, IN 46725.
- (3) Based on the facts, conditions and evaluations made, OAQ staff recommends to the IDEM Commissioner that the findings for the Permit Amendment 183-18658-00030 be approved.

IDEM Contact

Questions regarding this proposed PSD permit can be directed to Iryn Calilung at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015 or by telephone at (317) 233-5692 or toll free at 1-800-451-6027 extension 3-5692 or at icalilun@dem.state.in.us.