



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: Dec. 30, 2009

RE: Steel Dynamics, Inc. / 033-26976-00076

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07



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Mr. Barry Smith
Steel Dynamics, Inc.
4500 County Road 59
Butler, IN 46721

December 30, 2009

Re: 033-26976-00076
PSD/Significant Source Modification to:
Part 70 permit No.: T033-12614-00076

Dear Mr. Smith:

Steel Dynamics, Inc. - Iron Dynamics Division was issued Part 70 Operating Permit T033-12614-00076 on October 4, 2006 for stationary Direct Reduced Iron (DRI) manufacturing operation at a steel minimill. An application to modify the source was received on September 10, 2008. The source modification involves the re-opening of the PSD BACT for the submerged arc furnace (SAF) and a new 326 IAC 8-1-6 BACT and therefore is subject to 326 IAC 2-7-10.5, significant source modification and Prevention of Significant Deterioration (PSD) review under 326 IAC 2-2.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

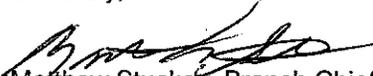
1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2.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

6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

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

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 call (800) 451-6027, and ask for Kristen Layton or extension 3-3031, or dial (317) 233-3031.

Sincerely,


Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Attachments

KRL

cc: File - Dekalb County
U.S. EPA, Region V
Dekalb County Health Department
Northern Regional Office
Air Compliance and Enforcement Branch
Permit Administration and Support Group



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PREVENTION OF SIGNIFICANT DETERIORATION / SIGNIFICANT SOURCE MODIFICATION TO A PART 70 Source OFFICE OF AIR QUALITY

**Steel Dynamics, Inc. – Iron Dynamics Division
4500 County Road 59
Butler, Indiana 46721**

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-2 and 326 IAC 2-7-10.5, applicable to those conditions.

PSD/Significant Source Modification No.: 033-26976-00076	
Issued by:  Matthew Stuckey, Branch Chief Permits Branch Office of Air Quality	Issuance Date: December 30, 2009 Expiration Date: October 4, 2011

TABLE OF CONTENTS

A SOURCE SUMMARY

- A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]
- A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]
- A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]
- A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(15)]
- A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

B GENERAL CONDITIONS

- B.1 Definitions [326 IAC 2-7-1]
- B.2 Permit Term [326 IAC 2-7-.5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)]
[IC 13-15-3-6(a)]
- B.3 Term of Conditions [326 IAC 2-1.1-9.5]
- B.4 Enforceability [326 IAC 2-7-7]
- B.5 Severability [326 IAC 2-7-5(5)]
- B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
- B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]
- B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]
- B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]
- B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1)and(6)]
[326 IAC 1-6-3]
- B.11 Emergency Provisions [326 IAC 2-7-16]
- B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]
- B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]
- B.14 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]
- B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]
- B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]
- B.17 Permit Renewal [326 IAC 2-7-4] [326 IAC 2-7-8(e)]
- B.18 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]
- B.19 Permit Revision under Economic Incentives and Other Programs [326 IAC 2-7-5(8)]
[326 IAC 2-7-12 (b)(2)]
- B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]
- B.21 Source Modification Requirement [326 IAC 2-7-10.5][326 IAC 2-2-2]
- B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2][IC 13-30-3-1] [IC 13-17-3-2]
- B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]
- B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]
- B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

C SOURCE OPERATION CONDITIONS

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

- C.1 Particulate Emission Limitations for Processes with Process Weight Rates Less Than
One Hundred (100) Pounds per Hour [326 IAC 6-3-2]
- C.2 Opacity [326 IAC 5-1]
- C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]
- C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
- C.5 Fugitive Dust Emissions [326 IAC 6-4]
- C.6 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]
- C.7 Stack Height [326 IAC 1-7]
- C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

Testing Requirements [326 IAC 2-7-6(1)]

- C.9 Performance Testing [326 IAC 3-6]

Compliance Requirements [326 IAC 2-1.1-11]

- C.10 Compliance Requirements [326 IAC 2-1.1-11]

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

- C.11 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]
- C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]
- C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7 5(3)] [326 IAC 2-7-6(1)]

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

- C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.15 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]
- C.16 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]
- C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11][326 IAC 2-2]

- C.18 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]
- C.19 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2]
- C.20 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

Stratospheric Ozone Protection

- C.21 Compliance with 40 CFR 82 and 326 IAC 22-1

Alternative operating Scenario

- C.22 Alternative Operating Scenario

D.1 FACILITY OPERATION CONDITIONS - Rotary Hearth Furnace and RHF Discharge Baghouses

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

- D.1.1 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]
- D.1.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.1.3 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]
- D.1.4 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3]
- D.1.5 VOC General Reduction Requirements (BACT): New Facilities [326 IAC 8-1-6]
- D.1.6 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]
- D.1.7 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]
- D.1.8 Lead Emissions - Best Available Control Technology [326 IAC 2-2-3]
- D.1.9 Startup and Shut-Down Emissions - Best Available Control Technology [326 IAC 2-2-3]
- D.1.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.1.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
- D.1.12 Particulate (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

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

- D.1.13 Continuous Emission Rate Monitoring [326 IAC 3-5]
- D.1.14 Opacity Monitoring on the Rotary Hearth Furnace
- D.1.15 Parametric Monitoring

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

- D.1.16 Record Keeping Requirements
- D.1.17 Reporting Requirements

D.2 FACILITY OPERATION CONDITIONS - RHF Discharge and Briquetter Baghouses

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

- D.2.1 Particulate Matter (PM/PM₁₀) – Best Available Control Technology (BACT) [326 IAC 2-2-3]

- D.2.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.2.3 Lead Emissions - Best Available Control Technology [326 IAC 2-2-3]
- D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.2.5 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
- D.2.6 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]

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

- D.2.7 Opacity Monitoring on the Rotary Hearth Furnace
- D.2.8 Parametric Monitoring

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

- D.2.9 Record Keeping Requirements
- D.2.10 Reporting Requirements

D.3 FACILITY OPERATION CONDITIONS - Submerged Arc Furnace

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

- D.3.1 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]
- D.3.2 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]
- D.3.3 Opacity Limits – Best Available Control Technology [326 IAC 2-2-3]
- D.3.4 Sulfur Dioxide (SO₂) – Best Available Control Technology [326 IAC 2-2-3]
- D.3.5 Volatile Organic Compounds (VOC) – Best Available Control Technology [326 IAC 2-2-3] [326 IAC 8-1-6]
- D.3.6 Carbon Monoxide (CO) – Best Available Control Technology [326 IAC 2-2-3]
- D.3.7 Carbon Monoxide (CO) [326 IAC 9-1]
- D.3.8 Nitrogen Oxides (NO_x) – Best Available Control Technology [326 IAC 2-2-3]
- D.3.9 Applicability [326 IAC 2-1.1-3]
- D.3.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.3.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
- D.3.12 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]
- D.1.13 Sulfur Dioxide (SO₂) – Best Available Control Technology [326 IAC 2-2-3]
- D.1.14 Volatile Organic Compounds (VOC) – Best Available Control Technology [326 IAC 2-2-3]
- D.3.15 Carbon Monoxide (CO) – Best Available Control Technology [326 IAC 2-2-3]

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

- D.3.16 Continuous Emission Rate Monitoring [326 IAC 3-5]
- D.3.17 Thermal Oxidizer Temperature
- D.3.18 Parametric Monitoring
- D.3.19 Scrubber Failure Detection

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

- D.3.20 Record Keeping Requirements
- D.3.21 Reporting Requirements

D.4 FACILITY OPERATION CONDITIONS - Coal and Iron Ore Unloading

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

- D.4.1 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]
- D.4.2 Opacity Limits – Best Available Control Technology [326 IAC 2-2-3]
- D.4.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.4.4 Particulate (PM/PM₁₀) Control

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

- D.4.5 Visible Emissions Notations
- D.4.6 Parametric Monitoring
- D.4.7 Broken or Failed Bag Detection

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

- D.4.8 Record Keeping Requirements

D.5 FACILITY OPERATION CONDITIONS – Coal Processing

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

- D.5.1 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]
- D.5.2 NSPS Coal Preparation Plant [40 CFR 60, Subpart Y [326 IAC 12-1]
- D.5.3 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]
- D.5.4 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]
- D.5.5 Opacity Limits – Best Available Control Technology [326 IAC 2-2-3]
- D.5.6 Sulfur Dioxide (SO₂) – Best Available Control Technology [326 IAC 2-2-3]
- D.5.7 Volatile Organic Compounds (VOC) – Best Available Control Technology [326 IAC 2-2-3]
- D.5.8 Carbon Monoxide (CO) – Best Available Control Technology [326 IAC 2-2-3]
- D.5.9 Nitrogen Oxides (NO_x) – Best Available Control Technology [326 IAC 2-2-3]
- D.5.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.5.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11] [40 CFR 60 Subpart Y]
- D.5.12 Particulate (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]

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

- D.5.13 Visible Emissions Notations
- D.5.14 Broken or Failed Bag Detection
- D.5.15 Monitoring of Operations [40 CFR 60.253 Subpart Y]

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

- D.5.16 Record Keeping Requirements

D.6 FACILITY OPERATION CONDITIONS - Ore Dryer

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

- D.6.1 Particulate Matter (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]
- D.6.2 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]
- D.6.3 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.6.4 Sulfur Dioxide (SO₂) – Best Available Control Technology [326 IAC 2-2-3]
- D.6.5 Volatile Organic Compounds (VOC) – Best Available Control Technology [326 IAC 2-2-3]
- D.6.6 Carbon Monoxide (CO) – Best Available Control Technology [326 IAC 2-2-3]
- D.6.7 Nitrogen Oxides (NO_x) – Best Available Control Technology [326 IAC 2-2-3]
- D.6.8 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.6.9 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
- D.6.10 Particulate (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]

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

- D.6.11 Visible Emissions Notations
- D.6.12 Broken or Failed Bag Detection

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

- D.6.13 Record Keeping Requirements

D.7 FACILITY OPERATION CONDITIONS- Ore Processing

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

- D.7.1 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]
- D.7.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.7.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.7.4 Particulate (PM/PM₁₀) – Best Available Control Technology [326 IAC 2-2-3]

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

- D.7.5 Visible Emissions Notations
- D.7.6 Parametric Monitoring
- D.7.7 Broken or Failed Bag Detection

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

- D.7.8 Record Keeping Requirements

D.8 FACILITY OPERATION CONDITIONS – Material Storage and Handling

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

- D.8.1 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.8.2 Particulate (PM/PM₁₀) (PSD) [326 IAC 2-2]
- D.8.3 Part 70 Minor Source Modification [326 IAC 2-7-10.5(d)(5)]
- D.8.4 Particulate (PM/PM₁₀) (Particulate Matter Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]
- D.8.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.8.6 Particulate (PM/PM₁₀) Control

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

- D.8.7 Visible Emissions Notations

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- D.8.8 Record Keeping Requirements

D.9 FACILITY OPERATION CONDITIONS – Outdoor Storage and Handling

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

- D.9.1 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.9.2 Preventative Maintenance Plan [326 IAC 2-7-5(13)]

D.10 FACILITY OPERATION CONDITIONS - SAF Building Dust Control System

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

- D.10.1 Particulate Matter Limitations (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]
- D.10.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]
- D.10.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

- D.10.4 Particulate Matter (PM/PM₁₀) Control [326 IAC 2-2-3]
- D.10.5 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
- D.10.6 Visible Emission Notations
- D.10.7 Parametric Monitoring
- D.10.8 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.10.9 Record Keeping Requirements

D.11 FACILITY OPERATION CONDITIONS - Insignificant Activities

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

D.11.1 Particulate (PM/PM₁₀) (Particulate Matter Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

Certification

Emergency Occurrence Report

Quarterly Deviation and Compliance Monitoring 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, A.2, A.3 and A.4 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

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

The Permittee owns and operates a stationary Direct Reduced Iron (DRI) manufacturing operation at a steel minimill.

Source Address: 4500 County Road 59, Butler, Indiana 46721
Mailing Address: 4500 County Road 59, Butler, Indiana 46721
Phone Number: 260-868-8000
SIC Code: 3312
County Location: DeKalb
Source Location Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source under PSD Rules
Minor Source, Section 112 of the Clean Air Act
1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

The source consists of:

- (a) Steel Dynamics, Inc., - Flat Roll Division, the primary operation, located at 4500 County Road 59, Butler, Indiana 46721; and
- (b) Steel Dynamics, Inc. – Iron Dynamics Division, the supporting operation, located at 4500 County Road 59, Butler, Indiana 46721.

Separate Part 70 permits will be issued to Steel Dynamics, Inc. - Flat Roll Division (033-8068-00043) and Steel Dynamics, Inc. – Iron Dynamics Division (033-12614-00076), solely for administrative purposes. For this permit, the Permittee is Steel Dynamics, Inc. – Iron Dynamics Division, the supporting operation.

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

Steel Dynamics, Inc. – Iron Dynamics Division consists of the following emission units and pollution control devices:

Rotary Hearth Furnace (RHF)

- (a) One (1) rotary hearth furnace (RHF) constructed in 1998 and modified in 2001 with an addition of ten (10) natural gas-fired low-NOx burners, having a total furnace nominal heat input of 376 MMBtu per hour. The RHF processes coal and iron ore to produce a nominal throughput of ninety-six (96) tons of direct reduced iron per hour. Emissions are controlled by an afterburner for CO and VOC, lime injection in the gas stream for SO₂, selective non-catalytic reduction for NOx, and a baghouse for PM/PM₁₀ and lead. Emissions exhaust through Stack 40. The RHF is equipped with a pressure relief valve for safety purposes.

Rotary Hearth Furnace Additional Emission Points

(a) RHF Fugitives

One (1) 40,000 dscfm air flow fugitive emissions baghouse, added in 2003, to control fugitive emissions from the Rotary Hearth Furnace (RHF), exhausting through Stack 77.

(b) RHF Briquetters

Two (2) enclosed RHF green briquetters, constructed in 2003, replacing the existing pelletizing equipment, with a nominal throughput of 160 tons per hour, exhausting through the RHF fugitive emissions baghouse, exhausting through Stack 77.

Submerged Arc Furnace (SAF)

(a) Submerged Arc Furnace (SAF)

(1) One (1) submerged arc furnace (SAF), constructed in 1998, that processes direct reduced iron (DRI), coke and lime to produce a nominal output of 55 tons of liquid hot metal (pig iron) per hour. Emissions are exhausted through a hole in the stationary lid, controlled by a wet venturi scrubber with a nominal air flow of 300,000 dscfm and an afterburner exhausting through Stack 58. The SAF is equipped with a pressure relief valve for safety purposes.

(b) RHF Discharge Chute

One (1) 60,000 dscfm airflow RHF Discharge Chute baghouse, added in 2003, to control fugitive emissions from the pan conveyor used to transport material from the Rotary Hearth Furnace to the Submerged Arc Furnace exhausting to Stack 58.

(c) Ladle Preheaters

Two (2) ladle preheaters each with a nominal heat input of 9 MMBtu per hour;

(d) Briquetters

Two (2) enclosed SAF hot briquetters, constructed in 2002, with a nominal throughput of 55 tons per hour, exhausting through Stack 58.

(e) Conveyors

(1) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 1, constructed in 2000, with a nominal throughput rate of 55 tons per hour, and

(2) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 2, constructed in 2003, with a nominal throughput rate of 55 tons per hour.

Coal and Iron Ore Unloading

(a) One (1) receiving shed, constructed in 1998, with a particulate matter emissions exhaust system controlled by a baghouse exhausting through Stacks 67 and 68.

(b) One (1) rotary railcar dumper, constructed in 1998, with a nominal throughput of 2,500 tons per hour, with the particulate matter emissions captured by a side hood controlled by the shed baghouse exhausting through Stacks 67 and 68.

Coal Processing

- (a) One (1) totally enclosed coal crusher identified as a double cone classifier (grinder), constructed in 1998, with the air from the coal collectors that is not recirculated, exhausts through the coal dryer Stack 75.
- (b) One (1) coal dryer, constructed in 1998, with a nominal heat capacity of 25 MMBtu per hour and processes a nominal 60 tons of coal per hour, with emissions exhausting through Baghouse B-75, then Stack 75.

Ore Dryer

One (1) Ore Dryer, constructed in 1998, with a nominal heat capacity of 27MMBtu per hour and processes a nominal 115 tons of ore per hour, with emissions exhausting through Baghouse B-76, then Stack 76.

Ore Processing

One (1) Ore Preparation Process, constructed in 1998, consisting of a roll screener, ore press (grinder) and magnetic separators with particulate matter emissions controlled by a baghouse, exhausting to Stack 74.

Material Storage and Handling

- (a) Silos and Bins

Fourteen (14) material storage silos and bins equipped with air bin vent filters to vent the displaced air for particulate matter emissions control, consisting of the following:

- (1) One (1) storage bin, constructed in 1998, with a nominal capacity of 8,000 cubic feet, exhausting through Stack 44.
 - (2) One (1) EAF dust silo, constructed in 1998, with a nominal capacity of 7,970 cubic feet, exhausting through Stack 45.
 - (3) One (1) carbon injection silo, constructed in 1998, with a nominal capacity of 2,300 cubic feet, exhausting through Stack 46.
 - (4) Four (4) coal silos, constructed in 1998, with nominal capacities of 8,909, 23,420, 19,712 and 24,289 cubic feet respectively, exhausting through Stacks 47 through 50.
 - (5) One (1) SAF bin, constructed in 1998, with a nominal capacity of 7,970 cubic feet, exhausting through Stack 86.
 - (6) One (1) zinc silo, constructed in 2003, with a nominal throughput rate of 3.0 tons of recycled zinc per hour, controlled by one (1) filter, exhausting through Stack 80.
 - (7) One (1) ash silo, constructed in 2003, with a nominal throughput rate of 3.0 tons of ash per hour, controlled by one (1) filter, exhausting into the building.
 - (8) Four (4) storage bins, constructed in 1998.
- (b) Material Recycling and Unloading Systems
 - (1) One (1) SAF dust recycling system, constructed in 2003 with a nominal throughput rate of 3.0 tons of dust per hour, controlled by one (1) filter, exhausting into the building.

- (2) One (1) zinc silo, constructed in 2003 with a nominal throughput rate of 3.0 tons of recycled zinc per hour, controlled by one (1) filter, exhausting through Stack 80.
- (3) One (1) ash silo, constructed in 2003 with a nominal throughput rate of 3.0 tons of ash per hour, controlled by one (1) filter, exhausting into the building.
- (4) One (1) EAF dust unloading process, constructed in 2003 with a nominal throughput rate of 3.0 tons of dust per hour, controlled by one (1) filter, exhausting into the building.
- (5) One (1) vacuum system, constructed in 2003 with a nominal throughput rate of 3.0 tons of dust per hour, controlled by one (1) filter, exhausting into the building.
- (6) One (1) zinc silo unloading process, constructed in 2003 with a nominal throughput rate of 3.0 tons of zinc per hour, controlled by one (1) filter, exhausting into the building.
- (7) One (1) ash silo unloading process, constructed in 2003 with a nominal throughput rate of 3.0 tons of ash per hour, controlled by one (1) filter, exhausting into the building.

Outdoor Storage and Handling

- (a) One (1) coal and ore Stacker conveyer with a nominal capacity of 2,500 tons per hour. Fugitive emissions controlled as needed by water sprays, to control fugitive dust at transfer and discharge points.
- (b) One (1) storage pile of coal with a nominal storage capacity of 20,000 tons and nominal pile acreage of 1.0 acre and a nominal throughput of 300,000 tons per year.
- (c) One (1) storage pile of iron ore with a nominal storage capacity of 120,000 tons and nominal pile acreage of 5.7 acres and a nominal throughput of 900,000 tons per year.
- (d) One (1) storage pile of fluxstone (lime dolomite) with a storage capacity of 30,000 tons and a pile acreage of 0.5 acres and a nominal throughput of 80, 000 tons per year.
- (e) Above ground coal and iron ore reclaim hoppers used by the front end loaders to transport material from the storage piles to the conveying system.
- (f) Closed conveyers with a nominal capacity of 1,100 tons per hour to move coal and ore to storage silos or coal crusher.

SAF Building Dust Control System

One (1) SAF Building Dust Control System; identified as DC-90; constructed in 2006; with emissions controlled by a 300,000 scfm baghouse; exhausting to Stack 90.

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

Steel Dynamics, Inc. – Iron Dynamics Division also includes the following insignificant activities, as follows:

1. Specifically regulated insignificant activities, as defined in 326 IAC 2-7-1(21):
 - (a) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment and welding equipment. [326 IAC 6-3-2]

- (b) Bentonite railcar unloading. [326 IAC 6-3-2]
2. Other Insignificant activities:
- (a) Space heaters, process heaters, or boilers using the following fuels:
 - (i) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (ii) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.
 - (b) Combustion source flame safety purging on startup.
 - (c) The following VOC and HAP storage containers:
 - (i) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs equal to or less than twelve thousand (12,000) gallons.
 - (ii) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
 - (d) Refractory storage not requiring air pollution control equipment.
 - (e) Equipment used exclusively for filling drums, pails, or other packaging containers with the following: Lubricating oils, Waxes and Greases.
 - (f) Application of: oils; greases; lubricants; and nonvolatile material; as temporary protective coatings.
 - (g) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume.
 - (h) Noncontact cooling tower systems with the following: Forced and induced draft cooling tower system not regulated under a NESHAP.
 - (i) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
 - (j) Stockpiled soils from soil remediation activities that are covered and waiting transport for disposal.
 - (k) Paved and unpaved roads and parking lots with public access.
 - (l) Covered conveyors for limestone conveying of less than or equal to seven thousand two hundred (7,200) tons per day for sources other than mineral processing plants constructed after August 31, 1983.
 - (m) Underground conveyors.
 - (n) Coal bunker and coal scale exhausts and associated dust collector vents.
 - (o) Purging of gas lines and vessels that is related to routing maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.
 - (p) Flue gas conditioning systems and associated chemicals such as the following: sodium sulfate; ammonia and sulfur trioxide.

- (q) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.
 - (r) On-site fire and emergency response training approved by the department.
 - (s) Purge double block and bleed valves.
 - (t) Filter or coalescer media changeout.
 - (u) A laboratory as defined in 326 IAC 2-7-1(21)(D).
 - (v) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.
 - (w) Cleaners and solvents characterized as follows: Having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38°C (100°F).
3. Other Activities less than significant level
- (a) Diesel generators

A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

Steel Dynamics, Inc. – Iron Dynamics Division is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

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

SECTION B

GENERAL CONDITIONS

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

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

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

- (a) This permit, T033-12614-00076, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

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

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

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

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

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

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

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

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

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

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

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

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

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form or its equivalent, with each submittal requiring certification. One certification may cover multiple forms in one (1) submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

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

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

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

and

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

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

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

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

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs 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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

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

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-base emission limitation, except as otherwise provided in this condition.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

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

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

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

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

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

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

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

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

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

- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report. Any emergencies that have been previously reported pursuant to paragraph (b)(5) of this condition and certified by an "responsible official" need only referenced by the date of the original report.

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

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

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

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

- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ has issued the modification. [326 IAC 2-7-12(b)(8)]

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

- (a) All terms and conditions of permits established prior to T033-12614-00076 and issued pursuant to permitting programs approved into the state implementation plan have been either:

- (1) incorporated as originally stated,
- (2) revised under 326 IAC 2-7-10.5, or
- (3) deleted under 326 IAC 2-7-10.5.

- (b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

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

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

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

- (a) Deviations from any permit requirements (for emergencies see Section B.11 - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

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

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

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

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

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

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:

- (1) That this permit contains a material mistake.

- (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
- (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

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

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

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

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

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

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

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

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

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

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

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

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

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

- (c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

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

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

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-17-3-2] [IC13-30-3-1]

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

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

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

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

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a permit revision that allows for a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

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

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

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

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

C.1 Particulate Matter Emission Limitations for Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in 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 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to a fugitive dust plan submitted for approval by IDEM no later than ninety (90) days after issuance of this permit for approval by IDEM.

C.7 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. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

The Permittee shall comply with the applicable requirements of 326 IAC 14-10, 326 IAC 18, and 40 CFR 61.140.

Testing Requirements [326 IAC 2-7-6(1)]

C.9 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), 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 IDEM, OAQ.

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

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

No later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ no later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the Permittee submits to IDEM, OAQ, a reasonable written explanation no later than five (5) days prior to the end of the initial forty-five (45) day period. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Requirements [326 IAC 2-1.1-11]

C.10 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require Stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

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

C.11 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented no later than ninety (90) days after permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated no later than ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

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

Unless otherwise specified in the approval for the new emission units(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on August 16, 1998.
- (b) Upon direct notification by IDEM, OAQ, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.15 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.16 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by

excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

- (1) initial inspection and evaluation;
 - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
- (1) monitoring results;
 - (2) review of operation and maintenance procedures and records;
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall maintain the following records:
- (1) monitoring data;
 - (2) monitor performance data, if applicable; and
 - (3) corrective actions taken.

C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) When the results of a Stack test performed in conformance with Section C.9 - 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, no later than thirty (30) days after receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the corrective actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred twenty (120) days after submission to IDEM, OAQ 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 law in response to noncompliant Stack tests.

The response action documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]
[326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11][326 IAC 2-2]**

C.18 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)][326 IAC 2-6]

(a) Pursuant to 326 IAC 2-6-3(a) (1), the Permittee shall submit no later than July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) ("Regulated pollutant which is used only for purposes of Section 19 of this rule") from the source, for purposes of Part 70 fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue,
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

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

(b) The 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.19 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2]

(a) Records of all required monitoring data and support information required by this permit 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 physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented no later than ninety (90) days after permit issuance.

(c) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A), 40 CFR 51.165(a)(6)(vi)(B), 40 CFR 51.166(r)(6)(vi)(a), and/or 40 CFR 51.166(r)(6)(vi)(b)) that a "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1 (ee) and/or 326 IAC 2-3-1 (z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1 (rr) and/or 326 IAC 2-3-1 (mm)), the Permittee shall comply with following:

- (1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, document and maintain the following records:
 - (A) A description of the project.

- (B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
- (C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:
 - (i) Baseline actual emissions;
 - (ii) Projected actual emissions;
 - (iii) Amount of emissions excluded under section; 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1(mm)(2)(A)(iii); and
 - (iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.
- (d) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A) and/or 40 CFR 51.166(r)(6)(vi)(a)) that a "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:
 - (1) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and
 - (2) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.20 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted no later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) 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.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted no later than thirty (30) days after the end of the reporting period. All reports that require certification shall be signed by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar months, quarters or years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.
- (f) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C.19- General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ.
 - (1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C.19 - General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C.19 - General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and
 - (2) The emissions differ from the preconstruction projection as documented and maintained under Section C.19 - General Record Keeping Requirements (c)(1)(C)(ii).
- (g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:
 - (1) The name, address, and telephone number of the major stationary source.
 - (2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C.19 - General Record Keeping Requirements.
 - (3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).
 - (4) Any other information that the Permittee deems fit to include in this report.

Reports required in this part shall be submitted to:

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

- (h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C.19 - General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.21 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

Alternative Operating Scenario

C.22 Alternative Operating Scenario

The Permittee may use propane gas as an alternative fuel in place of natural gas during emergency situations.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Rotary Hearth Furnace Operations

Rotary Hearth Furnace (RHF)

- (a) One (1) rotary hearth furnace (RHF) constructed in 1998 and modified in 2001 with an addition of ten (10) natural gas-fired low-NO_x burners, having a total furnace nominal heat input of 376 MMBtu per hour. The RHF processes coal and iron ore to produce a nominal throughput of ninety-six (96) tons of direct reduced iron per hour. Emissions are controlled by an afterburner for CO and VOC, lime injection in the gas stream for SO₂, selective non-catalytic reduction for NO_x, and a baghouse for PM/PM₁₀ and lead. Emissions exhaust through Stack 40. The RHF is equipped with a pressure relief valve for safety purposes.

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

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

D.1.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology (BACT)[326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from the rotary hearth furnace process baghouse shall not exceed 0.0052 grains per dscf through Stack 40. The total emissions shall not exceed 13.4 pounds per hour.

D.1.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM 033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the visible emissions discharged into the atmosphere from the rotary hearth furnace process baghouse Stack 40 shall not exceed three percent (3%) opacity, as determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).
- (b) Pursuant to CP-033-8091-00043, issued June 25, 1997 and 326 IAC 2-2-3, the visible emissions from vents, Stacks and building roof monitors, unless otherwise specified, shall not exceed three (3%) percent opacity. Visible emissions shall be determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).

D.1.3 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the sulfur dioxide emissions from the rotary hearth furnace process baghouse Stack 40 shall be controlled by lime injection, wet scrubber and/or use of EAF dust as supplemental feedstock. The SO₂ emissions shall be limited as follows:

- (a) When using lime injection or wet scrubber as control, SO₂ emissions shall not exceed 0.75 pounds per ton of material charged into the furnace. The SO₂ emissions shall not exceed 78 pounds per hour.
- (b) When using at least 2 tons per hour of EAF dust as supplemental feedstock as control, SO₂ emissions shall not exceed 0.4 pounds per ton of material charged into the furnace. The SO₂ emissions shall not exceed 39.0 pounds per hour.

D.1.4 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), except during periods of start up or shut down, the volatile organic compound emissions from the rotary hearth furnace process baghouse Stack 40 shall be controlled by an afterburner and operated at an average temperature of one thousand eight hundred sixty three (1863)^oF and emissions shall not exceed 0.06 pounds per ton of material charged into the furnace. The total emissions shall not exceed 6.23 pounds per hour.

D.1.5 VOC General Reduction Requirements (BACT): New Facilities [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the Rotary Hearth Furnace Best Available Control Technology (BACT) requirements for 326 IAC 2-2-3 are equivalent to BACT requirements for this rule.

D.1.6 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), except during periods of start up or shut down, the carbon monoxide emissions from the rotary hearth furnace process bag house Stack 40 shall be controlled by afterburner and operated at an average temperature of one thousand eight hundred sixty three (1863)^oF and emissions shall not exceed 100 ppm and 114,519 ug/m³. The total emissions shall not exceed 146.8 pounds per hour.

D.1.7 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the nitrogen oxide(s) emissions from the rotary hearth furnace process baghouse Stack 40 shall be controlled by the use of low-NOx natural gas-fired burners and a selective non-catalytic reduction unit (SNCR). Except during periods of start up or shut down, the total emissions shall not exceed 1.25 pounds per ton of material charged into the furnace and 120 pounds per hour.

The SNCR system shall be operated in a manner recommended by the manufacturer and good work practices to minimize the NOx emissions and ammonia slip.

D.1.8 Lead Emissions - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the lead emissions from the rotary hearth furnace process baghouse Stack 40 shall not exceed 0.00058 pounds per ton of material charged into the furnace and 0.0557 pounds per hour.

D.1.9 Startup and Shutdown Emissions - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM 033-15955-00076, issued on December 18, 2002 and 326 IAC 2-2-3, the startup is defined as the duration from the firing of the burners in the RHF to the time when the RHF exhaust gas temperature is within the optimum ranges of the operation control devices for NOx, CO and VOC emissions.
- (b) Shutdown is defined as the duration from first curtailment of fuel input to the RHF burners with the intent of full shutdown to the final complete stop of fuel input and complete cessation of combustion in the RHF.
- (c) The RHF shall be operated in a manner consistent with good air pollution control and work practices to minimize emissions during startup and shutdown by operating in accordance with written procedures developed and maintained by the Permittee, which shall include at a minimum the following measures:
 - (1) Review of operating parameters of the unit startup, or shutdown as necessary to make adjustments to reduce or eliminate excess emissions;
 - (2) Operate emission control equipment as soon as the RHF exhaust gas temperature reaches the lower value of the optimum temperature range for the control equipment. This operation shall continue until the time the RHF shutdown sequence is initiated with the intention of shutdown of the unit; and

- (3) Implementation of the inspection and repair procedures for the RHF and the emissions control equipment prior to attempting startup to ensure proper operation.

D.1.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the RHF and the following control devices: the rotary hearth furnace process baghouse, RHF selective non-catalytic reduction system, and afterburner.

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

D.1.11 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

Not later than twelve (12) months from issuance of this Part 70 permit (T033-12614-00076), issued on October 4, 2006, and in order to demonstrate compliance with Condition D.1.1 - Particulate Matter (PM/PM₁₀) - Best Available Control Technology and D.1.4 - Volatile Organic Compounds (VOC) - Best Available Control Technology, the Permittee shall perform PM/PM₁₀, lead, and VOC testing on the RHF, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years. PM₁₀ includes filterable and condensable components.

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

D.1.12 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM 033-15955-00076, issued on December 18, 2002 and 326 IAC 2-2-3 (Control Technology Review: Requirements) and in order to comply with conditions D.1.1- Particulate Matter (PM/PM₁₀) - Best Available Control Technology and D.1.8 - Lead Emissions - Best Available Control Technology, the baghouse for PM/PM₁₀ control shall be in operation and control emissions from the rotary hearth furnace process baghouse Stack 40 at all times the rotary hearth furnace is in operation.

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

D.1.13 Continuous Emission Rate Monitoring [326 IAC 3-5]

When the Submerged Arc Furnaces off gas is routed to the Rotary Hearth Furnace and at all times when the Rotary Hearth Furnace is in operation, the Permittee shall comply with the following:

- (a) Pursuant to 326 IAC 3-5-1(d), the Permittee shall calibrate, certify, operate, and maintain a continuous emissions monitoring systems (CEMS) for measuring SO₂, CO, and NO_x emissions rates in pounds per hour from the rotary hearth furnace process baghouse Stack 40, in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.
- (b) 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.
- (c) In the event that a breakdown of the SO₂, CO, and/or NO_x continuous emission monitoring system (CEMS) occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
- (d) Whenever the SO₂ CEMS is malfunctioning or will be down for calibration, maintenance, or repairs for a period of six (6) hours, the Permittee shall monitor the lime injection rate into the gas stream.
- (e) Whenever the NO_x CEMS is malfunctioning or will be down for calibration, maintenance, or repairs for a period of six (6) hours, the Permittee shall monitor the ammonia injection rate into the Selective Non-Catalyst Reduction Unit.

- (f) When ever the CO continuous emissions monitoring system is malfunctioning or down for maintenance or repair for a period of six (6) hours, the Permittee shall monitor the thermal oxidizer temperature, so it is maintained at the temperature achieved during the last compliant stack test.
- (g) A calibrated backup SO₂, NO_x and/or CEMS shall be brought online no later than seventy-two (72) hours of shutdown of the primary CEMS, and shall be operated until such time as the primary CEMS is back in operation.
- (h) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 326 IAC 2-2.

D.1.14 Opacity Monitoring on the Rotary Hearth Furnace

The Permittee shall demonstrate compliance with Condition D.1.2 by using any of the following methods:

- (a) Opacity Readings by certified opacity observer:
 - (1) Opacity from the rotary hearth furnace process baghouse Stack 40 shall be performed at least once per day during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.
 - (2) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.
 - (3) 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.
 - (4) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.
 - (5) Conditions (1) through (3) above are not applicable should a continuous opacity monitor be installed which meets 40 CFR 60, Appendix B, Performance Specification or a bag leak detector is installed as provided in this condition.
- (b) Continuous Opacity Monitoring System (COMs)
 - (1) Calibrate, certify, operate and maintain a continuous opacity monitoring system in accordance with 40 CFR 60 Appendix B, Performance Specification for measuring opacity from the rotary hearth furnace process baghouse Stack 40, in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.
 - (2) In the event that a breakdown of a COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
 - (3) Whenever a COM is malfunctioning or is down for maintenance, or repairs for a period of twenty-four (24) hours or more, and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide a certified opacity reader, who may be an employee of the Permittee or an independent contractor, to self-monitor the emissions from the emission unit stack.

- (A) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.
 - (B) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day during daylight operations, with at least four (4) hours between each set of readings, until a COMS is online.
 - (C) Method 9 readings may be discontinued once a COMS is online.
 - (D) Any opacity exceedances determined by Method 9 readings shall be reported with the Quarterly Opacity Exceedances Reports.
- (4) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 326 IAC 3-5 and 40 CFR 60.
- (c) Bag Leak Detection System
- (1) Operation of a bag leak detection system. If bag leak detection system is installed, then condition D.1.18 shall not be applicable.
 - (2) In the event the bag leak detection system is inoperable, the Permittee shall substitute Condition D.1.17(a) and D.1.18 to show compliance, until the bag leak detection system is operable.
 - (3) The baghouse leak detection system shall meet the following criteria:
 - (A) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0052 grains per dry standard cubic foot or less.
 - (B) The bag leak detection system sensor must provide output of relative particulate matter loading.
 - (C) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.
 - (D) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the US 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.
 - (E) 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 devices, and establishing the alarm set points and the alarm delay time.
 - (F) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 326 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.
 - (G) The bag leak detection system sensors must be inspected monthly and build-up must be removed from probe and insulator.

- (H) The Permittee shall perform monthly QA checks including response tests and electronics drift checks and opacity readings to confirm the operation of the baghouse is in order.
- (I) The bag detector must be installed on each compartment or downstream of the baghouse.
- (J) In the event a bag leak detection system alarm is triggered and if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
- (K) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.15 Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the rotary hearth furnace, at least once per day when the RHF is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure shall comply with Section C.13 - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.16 Record Keeping Requirements

- (a) To document compliance with Condition D.1.13 and D.1.14(b) (if applicable) the Permittee shall maintain records as required under 326 IAC 3-5-6 at the source in a manner such that they may be inspected by IDEM, OAQ or U.S. EPA, as requested.
- (b) To document compliance with Condition D.1.13(c) through (g), the Permittee shall maintain records of CEMS down time, the lime injection rate, the ammonia injection rate and/or thermal oxidizer temperature during the CEMS down time.
- (c) To document compliance with Condition D.1.14(a) (if applicable), the Permittee shall maintain records of the once per day opacity readings of the rotary hearth furnace process baghouse Stack 40. The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).
- (d) To document compliance with Condition D.1.15 (if applicable), the Permittee shall maintain records of the once per day pressure drop during normal operation. The Permittee shall include in its daily record when a pressure drop reading is not taken and

the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

- (e) To document compliance with condition D1.14(c)(3) (if applicable), the Permittee shall maintain records of opacity readings 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 and records of preventive maintenance required by D.1.14(c)(3)(G) and (H).
- (f) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements, of this permit.

D.1.16 Reporting Requirements

The Permittee shall submit on a quarterly basis records of excess opacity, SO₂, CO and NO_x emissions (defined in 326 3-5-7 and 40 CFR Part 60.7) from the continuous emissions monitoring system and the opacity readings taken (if applicable). These reports shall be submitted no later than thirty (30) days after the end of each calendar quarter and in accordance with Section C.20- General Reporting Requirements of this permit. The report submitted by the Permittee does require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Rotary Hearth Furnace Additional Emission Points

(a) RHF Fugitives

One (1) 40,000 dscfm air flow baghouse to control fugitive emissions from the Rotary Hearth Furnace (RHF), exhausting through Stack 77.

(b) RHF Briquetters

Two (2) enclosed RHF green briquetter, constructed in 2003, replacing the existing pelletizing equipment, with a nominal throughput of 160 tons per hour, exhausting through the one (1) 40,000 dscfm air flow baghouse, added in 2003, exhausting through Stack 77.

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

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

D.2.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology (BACT)[326 IAC 2-2-3]

Pursuant to A-033-17732-00076, issued September 17, 2003 and 326 IAC 2-2-3 (BACT), the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from the rotary hearth furnace fugitives' baghouse and briquetter baghouse shall not exceed a total air flow rate design of 100,000 dscfm and 0.0052 grains per dscf through Stack 77. The total emissions shall not exceed 4.46 pounds per hour.

D.2.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to A033-17732-00076, issued September 17, 2003 and 326 IAC 2-2-3 (BACT), the visible emissions discharged into the atmosphere from rotary hearth furnace fugitives baghouse and briquetter baghouse Stack 77 shall not exceed three percent (3%) opacity, as determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).

D.2.3 Lead Emissions - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to A-033-17732-00076, issued September 17, 2003 and 326 IAC 2-2-3 (BACT), the lead emissions from the rotary hearth furnace fugitive emissions and briquetter baghouses Stack 77 shall not exceed 0.019 pounds per hour.

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the RHF control devices: RHF fugitives baghouse and RHF briquetters baghouse.

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

D.2.5 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

Within thirty (30) months from the date of the latest compliance demonstration stack test and in order to demonstrate compliance with Condition D.2.1, the Permittee shall perform PM/PM₁₀ testing on the RHF fugitives baghouse and briquetter baghouse Stack 77, utilizing methods as approved by the Commissioner. This test shall be repeated at least once five (5) years from the date of the most recent valid compliance demonstration stack test. PM₁₀ includes filterable and condensable components. Testing shall be conducted in accordance with Section C.9 - Performance Testing.

D.2.6 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM 033-15955-00076, issued on December 18, 2002, A-033-17732-00076, issued September 17, 2003 and 326 IAC 2-2-3 (Best Available Control Technology Review:

Requirements) and in order to comply with condition D.2.1 and D.2.3, the baghouses for PM/PM₁₀ control shall be in operation and control emissions from the rotary hearth furnace fugitives and briquetters at all times the rotary hearth furnace and briquetters are in operation.

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

D.2.7 Opacity Monitoring on the Rotary Hearth Furnace

The Permittee shall demonstrate compliance with Condition D.2.2 by using any of the following methods:

- (a) Opacity Readings by certified opacity observer:
 - (1) Opacity from the RHF fugitives and briquetter baghouse Stack 77 shall be performed at least once per day during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.
 - (2) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.
 - (3) 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.
 - (4) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.
 - (5) Conditions (1) through (3) above are not applicable should a continuous opacity monitor be installed which meets 40 CFR 60, Appendix B, Performance Specification or a bag leak detector is installed as provided in this condition.
- (b) Continuous Opacity Monitoring System (COMs)
 - (1) Calibrate, certify, operate and maintain a continuous opacity monitoring system in accordance with 40 CFR 60 Appendix B, Performance Specification for measuring opacity from the RHF fugitives and briquetters baghouse Stack 77, in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.
 - (2) In the event that a breakdown of a COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
 - (3) Whenever a COM is malfunctioning or is down for maintenance, or repairs for a period of twenty-four (24) hours or more, and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide a certified opacity reader, who may be an employee of the Permittee or an independent contractor, to self-monitor the emissions from the emission unit stack.
 - (A) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.
 - (B) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day

during daylight operations, with at least four (4) hours between each set of readings, until a COMS is online.

- (C) Method 9 readings may be discontinued once a COMS is online.
 - (D) Any opacity exceedances determined by Method 9 readings shall be reported with the Quarterly Opacity Exceedances Reports.
- (4) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 326 IAC 3-5 and 40 CFR 60.
- (c) Bag Leak Detection System
- (1) Operation of a bag leak detection system. If bag leak detection system is installed, then condition D.2.8 shall not be applicable.
 - (2) In the event the bag leak detection system is inoperable, the Permittee shall substitute Condition D.2.7(a) and D.2.8 to show compliance, until the bag leak detection system is operable.
 - (3) The baghouse leak detection system shall meet the following criteria:
 - (A) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0052 grains per dry standard cubic foot or less.
 - (B) The bag leak detection system sensor must provide output of relative particulate matter loading.
 - (C) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.
 - (D) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the US 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.
 - (E) 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 devices, and establishing the alarm set points and the alarm delay time.
 - (F) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 326 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.
 - (G) In the event a bag leak detection system alarm is triggered and if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

- (H) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.8 Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the rotary hearth furnace fugitives and briquetters, at least once per day when the RHF is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16- Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure shall comply with Section C.13 - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.9 Record Keeping Requirements

- (a) To document compliance with Condition D.2.7(b) (if applicable) the Permittee shall maintain records as required under 326 IAC 3-5-6 at the source in a manner such that they may be inspected by IDEM, OAQ or U.S. EPA as requested.
- (b) To document compliance with Condition D.2.7(a) (if applicable), the Permittee shall maintain records of once per day opacity readings of the RHF fugitives and RHF briquetter baghouses Stack 77 exhausts. The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).
- (c) To document compliance with Condition D.2.8 (if applicable), the Permittee shall maintain records of the once per day pressure drop during normal operation. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
- (d) To document compliance with condition D.2.7(c)(3) (if applicable), the Permittee shall maintain records of opacity readings of the dates and times of all bag leak detection system alarms and the cause of each alarm.
- (e) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements, of this permit.

D.2.10 Reporting Requirements

The Permittee shall submit on a quarterly basis records of excess opacity, emissions (defined in 326 IAC 3-5-7 and 40 CFR Part 60.7) from the continuous emissions monitoring system and the opacity readings taken (if applicable). These reports shall be submitted no later than thirty (30) days after the end of each calendar quarter and in accordance with Section C.20- General Reporting Requirements of this permit. The report submitted by the Permittee does require certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.3 FACILITY OPERATION CONDITIONS

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

Submerged Arc Furnace (SAF)

- (a) Submerged Arc Furnace (SAF)
 - (1) One (1) submerged arc furnace (SAF), constructed in 1998, that processes direct reduced iron (DRI), coke and lime to produce a nominal output of 55 tons of liquid hot metal (pig iron) per hour. Emissions are exhausted through a hole in the stationary lid, controlled by a wet venturi scrubber with a nominal air flow of 300,000 dscfm and an afterburner exhausting through Stack 58. The SAF is equipped with a pressure relief valve for safety purposes.
- (b) RHF Discharge Chute

One (1) 60,000 dscfm airflow RHF Discharge Chute baghouse, added in 2003, to control fugitive emissions from the pan conveyor used to transport material from the Rotary Hearth Furnace to the Submerged Arc Furnace exhausting to Stack 58.
- (c) Ladle Preheaters

Two (2) ladle preheaters each with a nominal heat input of 9 MMBtu per hour;
- (d) Briquetters

Two (2) enclosed SAF hot briquetters, constructed in 2002, with a nominal throughput of 55 tons per hour, exhausting through Stack 58.
- (e) Conveyors
 - (1) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 1, constructed in 2000, with nominal throughput rate of 55 tons per hour, and
 - (2) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 2, constructed in 2003, with a nominal throughput rate of 55 tons per hour.

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

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

D.3.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3, the PM/PM₁₀ emissions from the submerged arc furnace (SAF) Stack 58 shall not exceed 0.0032 grains per dry standard cubic feet (dscf) and 8.23 pounds of PM/PM₁₀ per hour.
- (b) Pursuant to CP-033-9187-00043, issued March 24, 1998 and 326 IAC 2-2-3, the PM/PM₁₀ emissions from the DRI bins, slag pots and tapping associated with the SAF shall be captured by canopy hoods and exhausted to the SAF baghouse.

D.3.2 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

Pursuant to exemption 033-17200-00076, issued August 6, 2003 and 326 IAC 6-3-2 (Particulate Emissions Limitations for Manufacturing Processes), particulate emissions from each hot pan conveyor shall not exceed 45.5 pounds per hour when operating at a nominal process weight rate of 55 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.3.3 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the visible emissions from the submerged arc furnace (SAF) Stack 58 shall not exceed three percent (3%) opacity determined by a six (6) minute average.
- (b) Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the visible emissions from any building opening, shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).

D.3.4 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, PSD SSM No. 033-26976-00076, and 326 IAC 2-2-3, the sulfur dioxide emissions from the submerged arc furnace Stack 58 shall not exceed 0.068 pounds per ton and 3.43 pounds of SO₂ per hour.

D.3.5 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, PSD SSM No. 033-26976-00076, and 326 IAC 2-2-3, the volatile organic compound emissions from the submerged arc furnace Stack 58 shall not exceed 0.106 pounds per ton and 5.15 pounds of VOC per hour.

D.3.6 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, PSD SSM No. 033-26976-00076, and 326 IAC 2-2-3, the carbon monoxide emissions from the submerged arc furnace Stack 58 shall not exceed 2.85 pounds per ton and 129.30 pounds of CO per hour.

D.3.7 Carbon Monoxide (CO) [326 IAC 9-1]

Pursuant to CP033-9187-00043, issued March 24, 1998, PSD SSM No. 033-26976-00076, and 326 IAC 9-1, the Permittee shall not allow the discharge of CO from the Submerged Arc Furnace unless the waste gas stream is controlled by a direct-flame afterburner.

D.3.8 Nitrogen Oxides (NO_x) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the nitrogen oxide(s) emissions from the submerged arc furnace Stack 58 shall not exceed 0.117 pounds per ton and 6.46 pounds of NO_x per hour.

D.3.9 Applicability [326 IAC 2-1.1-3]

Pursuant to Exemption 033-17200-00076, issued August 6, 2003 and 326 IAC 2-1.1-3, the SAF briquetters and conveyors provided in the description information above are classified as exempt from air pollution permit requirements.

D.3.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the RHF discharge chute baghouse, Submerged Arc Furnace, ladle preheaters, SAF hot briquetters, wet venturi scrubber, afterburner, and the associated baghouses.

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

D.3.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.3.1, D.3.4, D.3.5, D.3.6, and D.3.8 the Permittee shall:

Within twelve (12) months after issuance of Significant Permit Modification No. 033-27112-00076, the Permittee shall perform PM/PM₁₀, SO₂, VOC, NO_x, and CO testing on the SAF Stack 58, utilizing testing methods approved by the Commissioner. The tests shall be repeated every two and one-half (2.5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C.9 - Performance Testing.

D.3.12 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3] [326 IAC 2-7-6(6)]

- (a) Pursuant to CP-033-9187-00043, issued on March 24, 1998, and in order to comply with D.3.1(a), the wet venturi scrubber for particulate control shall be in operation and control emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation.
- (b) Pursuant to 326 IAC 2-2-3, Best Available Control Technology, and in order to comply with D.3.1(a), the RHF discharge chute baghouse for particulate control shall be in operation and control emissions from the RHF discharge chute at all times the RHF is in operation.
- (c) Pursuant to SSM 033-15955-00043, issued on December 18, 2002, and in order to comply with D.3.1(b), the desulfurization baghouse for particulate control shall be in operation and control emissions from the DRI bins, slag pots and tapping associated with the SAF at all times the DRI bins, slag pots and tapping are in operation.
- (d) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.3.13 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to PSD SSM No. 033-26976-00076 and in order to comply with D.3.4, the wet venturi scrubber for sulfur dioxide (SO₂) control shall be in operation and control SO₂ emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation.

D.3.14 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to PSD SSM No. 033-26976-00076 and in order to comply with D.3.5, the Permittee shall either:

- (a) have an afterburner in operation and control for volatile organic compound (VOC) emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation, or
- (b) redirect the off gas from the Submerged Arc Furnace, after it goes through the wet scrubber, to the Rotary Hearth Furnace with an afterburner for control of volatile organic compound (VOC) emissions.

D.3.15 Carbon Monoxide (CO) Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, PSD SSM No. 033-26976-00076, and in order to comply with D.3.6 and D.3.7, the Permittee shall either:

- (a) have an afterburner in operation at all times the Submerged Arc Furnace is in operation, or
- (b) redirect the off gas from the Submerged Arc Furnace, after it goes through the wet scrubber, to the Rotary Hearth Furnace with an afterburner for control of carbon monoxide.

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

D.3.16 Continuous Emissions Rate Monitoring [326 IAC 3-5]

Pursuant to 326 IAC 3-5-1(d) and CP-033-9187-00043, issued March 24, 1998, the Permittee shall:

- (a) Have a certified visible emission observer observe opacity of the visible emissions from the SAF Stack 58 at least once per day when the SAF is operating. These observations shall be taken accordance with 40 CFR 60, Appendix A, Method 9 for at least three six minute averages. Records will be maintained of the visible emission observations;

and
- (b) Install, calibrate, operate and maintain continuous monitoring systems for measuring and recording:
 - (A) The pressure loss through the venturi constriction of the SAF scrubber.
 - (B) The water supply pressure to the SAF scrubber. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The OAQ, Compliance Data Section must be consulted for approval in advance of selecting alternative locations for the pressure sensor or tap.

All scrubber monitoring devices shall use the continuous electronic recording to monitor the scrubber performance.

D.3.17 Afterburner Temperature

When the off gas from the Submerged Arc Furnace is being routed to the afterburner, a continuous monitoring system shall be calibrated, maintained and operated on the afterburner for measuring operating temperature. The output of this system shall be recorded as a one (1) hour average. The Permittee shall take appropriate response steps in accordance with Section C.16 - Response to Excursions or Exceedances whenever the one (1) hour average temperature of the afterburner is below 1128 °F. A one (1) hour average temperature that is below 1128 °F is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.3.18 Parametric Monitoring

- (a) The Permittee shall record the pressure drop and flow rate of the scrubber used in conjunction with the submerged arc furnace at least once per day when the SAF is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 30 to 60 inches of water or a range established during the latest stack test and the flow rate of the scrubber is below the minimum of 40 gallons per minute or a minimum rate established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. A pressure drop or flow rate reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

- (b) The Permittee shall demonstrate compliance with Condition D.3.3 by either:
- (1) The operation of a bag leak detection system ("BLDS") on the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF when the DRI bins, slag pots and tapping associated with the SAF are in operation and the baghouse used in conjunction with the RHF discharge chute when the RHF is in operation. The BLDS shall meet the following criteria
 - (A) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0032 grains per dry standard cubic foot or less.
 - (B) The bag leak detections system sensor must provide output of relative particulate matter loading.
 - (C) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.
 - (D) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the US 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.
 - (E) 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 devices, and establishing the alarm set pints and the alarm delay time.
 - (F) 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 condition.
 - (G) The bag leak detection system sensors shall be inspected in accordance with the device manufacturer recommendations.
 - (H) The Permittee shall perform QA checks as recommended by the device manufacturer.
 - (I) The bag detector must be installed on each compartment or downstream of the baghouse.
 - (J) In the event a bag leak detection system alarm is triggered and if operation will continue for ten (10) days or more after the failure is observed before the unit will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable monitoring parameters with respect to normal and the results of any response actions taken up to the time of notification.
 - (K) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

or

- (2) Opacity Readings by certified opacity observer:
 - (A) Opacity from the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF and the baghouse used in conjunction with the RHF discharge chute shall be performed at least once per day during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.
 - (B) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.
 - (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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (c) The instruments used for determining the pressure and flow rate shall comply with Section C.13- Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated or replaced at least once every twelve (12) months.

D.3.19 Scrubber Failure Detection

In the event, a scrubber failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.20 Record Keeping Requirements

- (a) To document compliance with Condition D.3.16(a), the Permittee shall maintain the records of the observed opacity readings of the SAF Stack 58 at least once per day. The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).
- (b) To document compliance with D.3.16(b), the Permittee shall maintain records of the SAF continuous electronic recording of the pressure differential through the venturi constriction and water supply rate of the SAF scrubber. The Permittee shall include in its continuous record when a pressure differential is not taken and the reason for the lack of a recording (e.g. the process was not in operation).
- (c) To document compliance with Condition D.3.17, the Permittee shall maintain records of the afterburner temperature on a continuous basis. The Permittee shall include in its continuous record when a temperature is not taken and the reason for the lack of a temperature recording (e.g. the process was not in operation).
- (d) To document compliance with Condition D.3.18(a), the Permittee shall maintain records of the pressure drop and flow rate of the SAF scrubber, at least once per day. The Permittee shall include in its daily record when a pressure drop reading and flow rate is

not taken and the reason for the lack of a pressure drop reading and flow rate (e.g. the process did not operate that day).

- (e) To document compliance with Condition D.3.18(b)(1), (if applicable) the Permittee shall maintain records of the dates and times of all bag leak detection system alarms and the cause of each alarm.
- (f) To document compliance with Condition D.3.18(b)(2), (if applicable), the Permittee shall maintain records of the once per day opacity readings of the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF and the baghouse used in conjunction with the RHF discharge chute. The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).
- (g) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements, of this permit.

D.3.21 Reporting Requirements

The Permittee shall submit on a quarterly basis records of excess opacity readings (defined in 326 IAC 3-5-7 and 40 CFR Part 60.7). These reports shall be submitted no later than thirty (30) calendar days after the end of each calendar quarter and in accordance with Section C.20- General Reporting Requirements. The report submitted by the Permittee does require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Coal and Iron Ore Processing

Coal and Iron Ore Unloading

- (a) One (1) receiving shed, constructed in 1998, with a particulate matter emissions exhaust system controlled by a baghouse exhausting through Stacks 67 and 68.
- (b) One (1) rotary railcar dumper, constructed in 1998, with a nominal throughput of 2,500 tons per hour, with the particulate matter emissions captured by a side hood controlled by the shed baghouse exhausting through Stacks 67 and 68.

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

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

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

Pursuant to CP-033-9187-00043, issued March 24, 1998, 326 IAC 2-2-3, the coal and iron ore receiving shall be conducted in a shed. Pressure in the shed shall be maintained at a level to ensure the particulate material does not escape through the doors. The drop point and shed shall each have capture systems for particulate matter which are exhausted to one (1) baghouse for control. Particulate emissions shall not exceed 0.5 pounds per hour from Stacks 67 and 68.

D.4.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued March 24, 1998 and 326 IAC 2-2-3, the visible emissions from the receiving shed building opening or rotary car dumper Stacks 67 and 68 shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9 Appendix A).

D.4.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the receiving shed and associated baghouse.

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

D.4.4 Particulate (PM/PM₁₀) Control

Pursuant to CP-033-9187-00043, issued March 24, 1998, the baghouse for particulate control shall be in operation and control emissions from the receiving shed and railcar dumper at all times the railcar dumper is in operation.

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

D.4.5 Visible Emission Notations

- (a) Visible emission notations of the receiving shed and railcar dumper Stacks 67 and 68, exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.4.6 Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the Railcar Unloading Shed Baghouse used in conjunction with the Railcar Unloading Shed and Rail Car Dumper, at least once per day when the Railcar Unloading Shed and Rail Car Dumper are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 5.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure shall comply with Section C.13 - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.4.7 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the receiving shed. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.8 Record Keeping Requirements

- (a) To document compliance with Condition D.4.5, the Permittee shall maintain records of the once per day visible emission notations of the shed and railcar dumper Stacks 67 and 68 exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

- (b) To document compliance with Condition D.4.6, the Permittee shall maintain records of the once per day pressure drop during normal operation. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
- (c) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements of this permit.

SECTION D.5 FACILITY OPERATION CONDITIONS

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

Coal Processing

(a) One (1) totally enclosed coal crusher identified as a double cone classifier (grinder), constructed in 1998, with the air from the coal collectors that is not recirculated is exhausted through the coal dryer Stack 75.

(b) One (1) coal dryer, constructed in 1998, with a nominal heat capacity of 25 MMBtu per hour and processes a nominal 60 tons of coal per hour, with emissions exhausting through Baghouse (B-75) then Stack 75.

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

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

D.5.1 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]
 Pursuant to SSM033-12992-00076, issued May 15, 2002, the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart Y.

D.5.2 NSPS Coal Preparation Plant [40 CFR 60, Subpart Y] [326 IAC 12-1]

(a) Pursuant to SSM033-12992-00076, 326 IAC 12-1 and 40 CFR 60, Subpart Y (Coal Preparation Plant), the particulate matter emissions from the thermal coal dryer 75 shall not exceed 0.031 grains per dscf through Stack 75.

(b) Pursuant to SSM033-12992-00076, 326 IAC 12-1 and 40 CFR 60, Subpart Y (Coal Preparation Plant), the visible emissions from the thermal coal dryer Stack 75 shall not exceed 20%.

D.5.3 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]
 Pursuant to SSM033-19160-00076, issued April 13, 2005 and 326 IAC 2-2-3, the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from the Coal Dryer baghouse B-75 shall not exceed a PM/PM₁₀ emission rate of 0.01 grains per dscf through Stacks 75. The PM/PM₁₀ shall not exceed 0.5 lb per hour from Coal Dryer Stack 75.

D.5.4 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]
 Pursuant to SSM033-12992 -00076, issued May 15, 2002 and 326 IAC 6-3-2, the particulate matter (PM) from the Coal Dryer shall be limited as follows:

Process	Process Weight (Lbs/hr)	PM Emission Limit (Lbs/hr)
Coal Dryer	120,000	46.3

This limit was calculated as follows:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

D.5.5 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM033-12992 -00076, issued on May 15, 2002 and 326 IAC 2-2-3, the visible emissions discharged into the atmosphere from the coal dryer Stack 75 shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A), pursuant to 326 IAC 5-1-4.
- (b) Pursuant to SSM033-12992 -00076, issued on May 15, 2002 and 326 IAC 2-2-3, the visible emissions discharged into the atmosphere from the vents and openings in the buildings housing the coal dryer shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A) pursuant to 326 IAC 5-1-4.

D.5.6 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992 -00076, issued May 15, 2002 and 326 IAC 2-2-3, the sulfur dioxide emissions from the Coal Dryer shall not exceed 0.00059 pounds per MMBtu of heat input. The SO₂ emissions shall not exceed 0.015 pounds per hour from the Coal Dryer Stack 75.

D.5.7 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM 033-12992-00076, issued May 15, 2002 and 326 IAC 2-2-3, the volatile organic compound emissions from the Coal Dryer shall not exceed 0.0053 pounds per MMBtu of heat input. The VOC emissions shall not exceed 0.14 pounds per hour from the Coal Dryer Stack 75.

D.5.8 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992 -00076, issued May 15, 2002 and 326 IAC 2-2-3, the carbon monoxide emissions from the Coal Dryer shall not exceed 0.082 pounds per MMBtu of heat input. The CO emissions shall not exceed 2.1 pounds per hour from Coal Dryer Stack 75.

D.5.9 Nitrogen Oxides (NO_x) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM 033-12992-00076, issued May 15, 2002 and 326 IAC 2-2-3, the nitrogen oxide(s) emissions from the Coal Dryer shall be controlled by the use of low-NO_x natural gas-fired burners and shall not exceed 0.049 pounds per MMBtu of heat input. The NO_x emissions shall not exceed 1.25 pounds per hour from the Coal Dryer Stack 75.

D.5.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 Preventive Maintenance Plan, of this permit, is required for the coal crusher, coal dryer and the associated baghouse.

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

D.5.11 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11] [40 CFR 60 Subpart Y]

Within five (5) years from February 19, 2004 and in order to demonstrate compliance with Condition D.5.1, D.5.2 and D.5.3, the Permittee shall perform PM/PM₁₀ testing on the coal dryer baghouse Stack 75, utilizing testing methods as approved by the Commissioner in accordance with Section C.9- Performance Testing. These tests shall be repeated at least once every five (5) years. PM₁₀ includes filterable and condensable components.

D.5.12 Particulate (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to CP033-8091-00043, issued on June 25, 1997, the baghouse for particulate control shall be in operation and control emissions from the coal crusher at all times the coal crusher is in operation.
- (b) Pursuant to SSM 033-12992 -00076, issued May 15, 2002, the baghouse for particulate control shall be in operation and control emissions from the coal dryer at all times the coal dryer is in operation.

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

D.5.13 Visible Emission Notations

- (a) Visible emission notations of the Coal Dryer Stack 75, exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.5.14 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the coal dryer and crusher. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.5.15 Monitoring of Operations [40 CFR 60.253 Subpart Y]

- (a) The Permittee shall install, calibrate, maintain and continuously operate a monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within $\pm 3^\circ$ Fahrenheit.
- (b) The monitoring device under paragraph (a) shall be recalibrated annually in accordance with the procedure under 40 CFR 60.13(b).

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.16 Record Keeping Requirements

- (a) To document compliance with Condition D.5.13, the Permittee shall maintain records of the once per day visible emission notations of the Coal Dryer Stack 75 exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).
- (b) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements of this permit.

SECTION D.6 FACILITY OPERATION CONDITIONS

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

Ore Dryer

One (1) Ore Dryer, constructed in 1998, with a nominal heat capacity of 27MMBtu per hour and processes a nominal 115 tons of ore per hour, with emissions exhausting through Baghouse B-76, then Stack 76.

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

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

D.6.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-19160-00076, issued April 13, 2005 and 326 IAC 2-2-3, the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from the Ore Dryer baghouse B-76 shall not exceed a PM/PM₁₀ emission rate of 0.01 grains per dscf through Stack 76. The PM/PM₁₀ shall not exceed 1.1 lb per hour from Ore Dryer Stack 76.

D.6.2 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

Pursuant to SSM033-12992 -00076, issued May 15, 2002 and 326 IAC 6-3-2, the particulate matter (PM) from the Ore Dryer shall be limited as follows:

Process	Process Weight (Lbs/hr)	PM Emission Limit (Lbs/hr)
Ore Dryer	230,000	52.7

This limit was calculated as follows:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

D.6.3 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM033-12992-00076, issued on May 15, 2002 and 326 IAC 2-2-3, the visible emissions discharged into the atmosphere from the ore dryer Stack 76 shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A) pursuant to 326 IAC 5-1-4.
- (b) Pursuant to SSM033-12992 -00076, issued on May 15, 2002 and 326 IAC 2-2-3, the visible emissions discharged into the atmosphere from the vents and openings in the buildings housing the ore dryer shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings) taken in accordance with EPA Method 9, Appendix A) pursuant to 326 IAC 5-1-4.

D.6.4 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992-00076, issued May 15, 2002 and 326 IAC 2-2-3, the sulfur dioxide emissions from the Ore Dryer shall not exceed 0.00059 pounds per MMBtu of heat input. The SO₂ emissions shall not exceed 0.016 pounds per hour from the Ore Dryer Stack 76.

D.6.5 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992-00076, issued May 15, 2002 and 326 IAC 2-2-3, the volatile organic compound emissions from the Ore Dryer shall not exceed 0.0053 pounds per MMBtu of heat input. The VOC emissions shall not exceed 0.15 pounds per hour from Ore Dryer Stack 76.

D.6.6 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992-00076, issued May 15, 2002 and 326 IAC 2-2-3, the carbon monoxide emissions from the Ore Dryer shall not exceed 0.082 pounds per MMBtu of heat input. The CO emissions shall not exceed 2.3 pounds per hour from Ore Dryer Stacks 76.

D.6.7 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992-00076, issued May 15, 2002 and 326 IAC 2-2-3, the nitrogen oxide(s) emissions from the Ore Dryer shall be controlled by the use of low-NOx natural gas-fired burners and shall not exceed 0.049 pounds per MMBtu of heat input. The NOx emissions shall not exceed 1.35 pounds per hour from Ore Dryer Stacks 76.

D.6.8 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the ore dryer and associated baghouse.

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

D.6.9 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

Within five (5) years from February 19, 2004 and in order to demonstrate compliance with Condition D.6.1, D.6.2 and D.6.3, the Permittee shall perform PM/PM₁₀ testing on the coal dryer baghouse Stack 75, utilizing testing methods as approved by the Commissioner in accordance with Section C. 10- Performance Testing. These tests shall be repeated at least once every five (5) years. PM₁₀ includes filterable and condensable components.

D.6.10 Particulate (PM/PM₁₀) Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM033-12992-00076, issued May 15, 2002, the baghouse for particulate control shall be in operation and control emissions from the ore dryer at all times the ore dryer is in operation.

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

D.6.11 Visible Emission Notations

- (a) Visible emission notations of the Ore Dryer Stack 76, exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.6.12 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the coal dryer and crusher. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.6.13 Record Keeping Requirements

- (a) To document compliance with Condition D.6.11, the Permittee shall maintain records of the once per day visible emission notations of the ore dryer Stack 76 exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).
- (b) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements of this permit.

SECTION D.7 FACILITY OPERATION CONDITIONS

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

Ore Processing

One (1) One (1) Ore Preparation Process, constructed in 1998, consisting of a roll screener, ore press (grinder) and magnetic separators with particulate matter emissions controlled by a baghouse, exhausting to Stack 74.

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

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

D.7.1 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the PM from the Ore Preparation Process 74, shall not exceed the pound per hour emission rate established as E in the following formula:

Process	Process Weight (Lbs/hr)	PM Emission Limit (Lbs/hr)
Ore Prep Process	230,000	52.7

This limit was calculated as follows:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

D.7.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-8091-00043, issued on June 25, 1997 and 326 IAC 2-2-3, the visible emissions from vents, stacks and building roof monitors, unless otherwise specified, shall not exceed three (3%) percent opacity. Visible emissions shall be determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A) pursuant to 326 IAC 5-1-4.

D.7.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10- Preventive Maintenance Plan, of this permit, is required for the ore preparation process baghouse.

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

D.7.4 Particulate (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

The ore preparation baghouse for particulate control shall be in operation and control emissions from the ore preparation process at all times the ore preparation process is in operation.

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

D.7.5 Visible Emission Notations

- (a) Visible emission notations of the ore preparation Stack 74, exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

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

D.7.6 Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the ore preparation process at least once per day when the ore preparation process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C-16 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure shall comply with Section C.13 - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.7.7 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the coal dryer and crusher. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.7.8 Record Keeping Requirements

- (a) To document compliance with Condition D.7.5 the Permittee shall maintain records of the once per day visible emission notations of the ore preparation Stack 74 exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).
- (b) To document compliance with Condition D.7.6 the Permittee shall maintain records of the once per day pressure drop during normal operation. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
- (c) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements, of this permit.

SECTION D.8 FACILITY OPERATION CONDITIONS

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

Material Storage and Handling

(a) Silos and Bins

Fourteen (14) material storage silos and bins equipped with air bin vent filters to vent the displaced air for particulate matter emissions control, consisting of the following:

- (1) One (1) storage bin, constructed in 1998, with a nominal capacity of 8,000 cubic feet, exhausting through Stack 44.
- (2) One (1) EAF dust silo, constructed in 1998, with a nominal capacity of 7,970 cubic feet, exhausting through Stack 45.
- (3) One (1) carbon injection silo, constructed in 1998, with a nominal capacity of 2,300 cubic feet, exhausting through Stack 46.
- (4) Four (4) coal silos, constructed in 1998, with a nominal capacities of 8,909, 23,420, 19,712 and 24,289 cubic feet respectively, exhausting through Stacks 47 through 50.
- (5) One (1) SAF bin, constructed in 1998, with a nominal capacity of 7,970 cubic feet, exhausting through Stack 86.
- (6) One (1) zinc silo, constructed in 2003, with a maximum throughput rate of 3.0 tons of recycled zinc per hour, controlled by one (1) filter, exhausting through Stack 80.
- (7) One (1) ash silo, constructed in 2003, with a maximum throughput rate of 3.0 tons of ash per hour, controlled by one (1) filter, exhausting into the building.
- (8) Four (4) storage bins, constructed in 1998.

(b) Material Recycling and Unloading Systems

- (1) One (1) SAF dust recycling system, 79, constructed in 2003 with a nominal throughput rate of 3.0 tons of dust per hour, controlled by one (1) filter, exhausting into the building.
- (2) One (1) zinc silo 80, constructed in 2003 with a nominal throughput rate of 3.0 tons of recycled zinc per hour, controlled by one (1) filter, exhausting through Stack 80.
- (3) One (1) ash silo 81 and constructed in 2003 with a nominal throughput rate of 3.0 tons of ash per hour, controlled by one (1) filter, and exhausting into the building.
- (4) One (1) EAF dust unloading process 82 and constructed in 2003 with a nominal throughput rate of 3.0 tons of dust per hour, controlled by one (1) filter, and exhausting into the building.
- (5) One (1) vacuum system, constructed in 2003 with a nominal throughput rate of 3.0 tons of dust per hour, controlled by one (1) filter, exhausting into the building.

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

Facility Description [326 IAC 2-7-5(15)]: Material Storage and Handling (continued)

- (6) One (1) zinc silo unloading process, constructed in 2003 with a nominal throughput rate of 3.0 tons of zinc per hour, controlled by one (1) filter, exhausting into the building.
- (7) One (1) ash silo unloading process, constructed in 2003 with a nominal throughput rate of 3.0 tons of ash per hour, controlled by one (1) filter, exhausting into the building.

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

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

D.8.1 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to CP-033-8091-00043, issued on June 25, 1997, and 326 IAC 2-2-3, the visible emissions discharged into the atmosphere from the silos storing coal, iron ore, lime, and rotary hearth furnace dust shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A) pursuant to 326 IAC 5-1-4.
- (b) Pursuant to CP-033-8091-00043, issued on June 25, 1997, and 326 IAC 2-2-3, the fugitive particulate emissions into the atmosphere from the coal, iron ore and rotary hearth furnace dust handling system shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken accordance with EPA method 9, Appendix A) pursuant to 326 IAC 5-1-4.

D.8.2 Particulate (PM/PM₁₀) (PSD) [326 IAC 2-2]

Pursuant to MSM033-17936-00076, issued October 9, 2003 and 326 IAC 2-2, the PM/PM₁₀ emissions from units 79 through 85 shall not exceed the emissions limits listed in the table below:

Unit ID	Unit Description	PM Emission Limit (lb/hr)	PM ₁₀ Emission Limit (lb/hr)
79	SAF dust recycling system	0.015	0.15
80	zinc silo	0.08	0.08
81	ash silo	0.08	0.08
82	EAF dust unloading process	0.21	0.21
83	vacuum system	0.02	0.02
84	zinc silo unloading system	0.02	0.02
85	ash silo unloading system	0.02	0.02

This is equivalent to 2.54 tons per year of PM/PM₁₀ emissions from these units. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

D.8.3 Part 70 Minor Source Modification [326 IAC 2-7-10.5(d)(5)]

Pursuant to MSM033-17936-00076, issued October 9, 2003 and 326 IAC 2-7-10.5(d)(5) (Part 70 Minor Source Modification), filters equipped with units 79 through 85 shall comply with the following limits when in operation:

- (a) At least 99% control efficiency, and

- (b) No visible emissions.

D.8.4 Particulate (PM/PM₁₀) (Particulate Matter Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

Pursuant to MSM 033-17936-00076, issued October 9, 2003 and 326 IAC 6-3-2 Particulate Matter Emissions Limitations for Manufacturing Processes, particulate matter from each of the units 79 through 85 shall not exceed 8.56 pounds per hour when operating at a process weight rate of 3.0 tons per hour.

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

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where} \quad \begin{array}{l} E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour} \end{array}$$

D.8.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10- Preventive Maintenance Plan, of this permit, is required for the silo bin vents, units 79, 82 through 85 and their filters used as control devices.

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

D.8.6 Particulate (PM/PM₁₀) Control

- (a) In order to comply with Condition D.8.1, the bin vent filters for particulate control shall be in operation and control emissions from the silos at all times the silos are being loaded or unloaded.
- (b) In order to comply with Conditions D.8.2, D.8.3 and D.8.4, the filters for PM/PM₁₀ control shall be in operation and control emissions from units 79 through 85 at all times that these units are in operation.

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

D.8.7 Visible Emission Notations

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

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.8.8 Record Keeping Requirements

- (a) To document compliance with Condition D.8.7, the Permittee shall maintain records of the once per day visible emission notations of the ore preparation Stack 80 exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).
- (b) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements, of this permit.

SECTION D.9

FACILITY OPERATION CONDITIONS

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

Outdoor Storage and Handling

- (a) One (1) coal and ore Stacker conveyer with a nominal capacity of 2,500 tons per hour. Fugitive emissions controlled as needed by water sprays, to control fugitive dust at transfer and discharge points.
- (b) One (1) storage pile of coal with a nominal storage capacity of 20, 000 tons and a nominal pile acreage of 1.0 acre and a nominal throughput of 300,000 tons per year,
- (c) One (1) storage pile of iron ore with a nominal storage capacity of 120,000 tons and a nominal pile acreage of 5.7 acres and a nominal throughput of 900,000 tons per year and,
- (d) One (1) storage pile of fluxstone (lime dolomite) with a storage capacity of 30,000 tons and a pile acreage of 0.5 acres and a nominal throughput of 80,000 tons per year,
- (e) Above ground coal and iron ore reclaim hoppers used by the front end loaders to transport material from the storage piles to the conveying system.
- (f) Closed conveyers with a nominal capacity of 1,100 tons per hour to move coal and ore to storage silos or coal crusher.

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

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

D.9.1 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to CP-033-8091-00043, issued June 25, 1997 and 326 IAC 2-2-3, water shall be applied at each transfer and discharge point of the coal and iron ore stacker. The material dropping distance shall be maintained at less than three (3) feet.
- (b) Pursuant to CP-033-8091-00043, issued on June 25, 1997 and 326 IAC 2-2-3, the coal and iron conveyers shall be covered and the transfer points enclosed. The visible emissions at the discharged and transfer point shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 reading taken in accordance with EPA Method 9, Appendix A) pursuant to 326 IAC 5-1-4.
- (c) Pursuant to CP-033-9187-00043, issued March 24, 1998 and 326 IAC 2-2-3, the material reclaim hoppers used by the front end loaders to transport material from the storage piles to the conveying system shall be located above ground. The discharge dropping point distance shall be less than three (3) feet.
- (d) Pursuant to CP-033-9187-00043, issued on March 24, 1998, water shall be applied to the storage piles to minimize fugitive dust. Water shall be applied continuously during stacking. The material drop shall be maintained at less than three (3) feet.
- (e) Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the visible emissions from all transfer and discharge points shall be limited to three percent (3%) opacity determined by six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).

- (f) Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the opacity of fugitive particulate emissions from the storage piles shall be limited to ten (10%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A). These limitations may not apply during periods, when application of fugitive particulate matter control measures is either ineffective or unreasonable due to sustained very high wind speeds. During such periods, the Permittee must continue to implement all reasonable fugitive particulate matter control measures.

D.9.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the conveyors.

SECTION D.10

FACILITY OPERATION CONDITIONS

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

SAF Building Dust Control System

One (1) SAF Building Dust Control System; identified as DC-90; constructed in 2006; with emissions controlled by a 300,000 scfm baghouse; exhausting to Stack 90.

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

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

D.10.1 Particulate Matter Limitations (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to PSD SSM 033-22673-00076, issued October 13, 2006, and 326 IAC 2-2-3 (BACT), the filterable PM emissions from the SAF Building Dust Control System shall not exceed 0.0018 grains per dry standard cubic foot (gr/dscf) and 4.63 pounds per hour (lb/hr).
- (b) Pursuant to PSD SSM 033-22673-00076, issued October 13, 2006, and 326 IAC 2-2-3 (BACT), the filterable and condensible PM/PM₁₀ emissions from the SAF Building Dust Control System shall not exceed 0.004 grains per dry standard cubic foot (gr/dscf) and 10.29 pounds per hour (lb/hr).

D.10.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to PSD SSM 033-22673-00076, issued October 13, 2006, and 326 IAC 2-2-3 (BACT), visible emissions of the exhaust from the SAF Building Dust Control System shall not exceed three percent (3%) opacity, as determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).

D.10.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Condition B.10 (Preventive Maintenance Plan), of this permit, is required for the SAF Building Dust Control System and its associated baghouse.

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

D.10.4 Particulate Matter (PM/PM₁₀) Control [326 IAC 2-2-3]

- (a) Except as otherwise provided by statute, rule, or in this permit, and in order to comply with Condition D.10.1, the baghouse for PM/PM₁₀ control shall be in operation and control emissions from the SAF Building Dust Control System at all times any PM-emitting facility in the SAF Building or SAF Building Dust Control System is in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.10.5 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

Within 60 days after achieving full operation, but no later than 180 days after initial start up, the Permittee shall perform PM/PM₁₀ and opacity testing on the stack emissions from the SAF Building Dust Control System in order to demonstrate compliance with the PM/PM₁₀ and opacity limits established by 326 IAC 2-2-3. These tests shall be repeated at least once every five (5)

years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be completed using methods approved by the Commissioner and conducted in accordance with Section C - Performance Testing.

D.10.6 Visible Emission Notations

- (a) Visible emission notations of the SAF Building Dust Control System baghouse exhaust (Stack 90) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Condition C.16 (Response to Excursions or Exceedances). Failure to take response steps in accordance with Condition C.16 (Response to Excursions or Exceedances) shall be considered a deviation from this permit.

D.10.7 Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the SAF Building Dust Control System at least once per day when the SAF building Dust Control System is in operation. When for any one reading, the pressure drop across the baghouse is outside a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 (Response to Excursions or Exceedances). A pressure reading that is outside the appropriate range is not a deviation from this permit. Failure to take response steps in accordance with Condition C.16 (Response to Excursions or Exceedances), shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure shall comply with Condition C.13 (Instrument Specifications), of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated at least once every six (6) months.

D.10.8 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Condition B.11 - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Condition B.11 - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.10.9 Record Keeping Requirements

- (a) To document compliance with Condition D.10.6, the Permittee shall maintain records of the visible emission notations required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).
- (b) To document compliance with Condition D.10.7, the Permittee shall maintain records of the pressure drop readings required by that condition. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
- (c) All records shall be maintained in accordance with Condition C.19 (General Record Keeping Requirements) of this permit.

SECTION D.11

FACILITY OPERATION CONDITIONS

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

Insignificant Activities

1. Specifically regulated insignificant activities, as defined in 326 IAC 2-7-1(21):
 - (a) The following equipment related to manufacturing activities not resulting in the emission of HAPS: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6-3-2]
 - (b) Bentonite railcar unloading [326 IAC 6-3-2]
2. Other insignificant activities
 - (a) Space heaters, process heaters, or boilers using the following fuels:
 - (i) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (ii) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.
 - (b) Combustion source flame safety purging on startup.
 - (c) The following VOC and HAP storage containers:
 - (i) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs equal to or less than twelve thousand (12,000) gallons.
 - (ii) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
 - (d) Refractory storage not requiring air pollution control equipment.
 - (e) Equipment used exclusively for filling drums, pails, or other packaging containers with the following: Lubricating oils, Waxes and Greases.
 - (f) Application of: oils; greases; lubricants; and nonvolatile material; as temporary protective coatings.
 - (g) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume.
 - (h) Noncontact cooling tower systems with the following: Forced and induced draft cooling tower system not regulated under a NESHAP.
 - (i) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
 - (j) Stockpiled soils from soil remediation activities that are covered and waiting transport for disposal.
 - (k) Paved and unpaved roads and parking lots with public access.
 - (l) Covered conveyors for limestone conveying of less than or equal to seven thousand two hundred (7,200) tons per day for sources other than mineral processing plants constructed after August 31, 1983.

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

Facility Description [326 IAC 2-7-5(15): Insignificant Activities (continued):

- (m) Underground conveyors.
 - (n) Coal bunker and coal scale exhausts and associated dust collector vents.
 - (o) Purging of gas lines and vessels that is related to routing maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.
 - (p) Flue gas conditioning systems and associated chemicals such as the following: sodium sulfate; ammonia and sulfur trioxide.
 - (q) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.
 - (r) On-site fire and emergency response training approved by the department.
 - (s) Purge double block and bleed valves.
 - (t) Filter or coalescer media changeout.
 - (u) A laboratory as defined in 326 IAC 2-7-1(21)(D).
 - (v) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.
 - (w) Cleaners and solvents characterized as follows: Having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38°C (100°F).
3. Other Activities less than significant level
- (a) Diesel generators

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

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

D.11.1 Particulate (PM/PM₁₀) (Particulate Matter Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations), the particulate emissions from the brazing equipment, cutting torches, soldering equipment and welding equipment shall not exceed the particulate limitation in Section C.1 - Particulate Emission Limitations for Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour.
- (b) Pursuant to 326 IAC 6-3-2 Particulate Emission Limitations for Manufacturing Processes, the allowable particulate emission pound per hour limitation from the bentonite railcar unloading shall be calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40$$

where E = rate of emission in pounds per hour;
and P = process weight rate in tons per hour

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865**

**PART 70 OPERATING PERMIT
CERTIFICATION**

Source Name: Steel Dynamics, Inc. – Iron Dynamics Division
Source Address: 4500 County Road 59, Butler, IN 46721
Mailing Address: 4500 County Road 59, Butler, IN 46721
Part 70 Permit No.: T033-12614-00076

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify) _____
- Report (specify) _____
- Notification (specify) _____
- Affidavit (specify) _____
- Other (specify) _____

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

Signature:

Printed Name:

Title/Position:

Phone:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865**

**PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT**

Source Name: Steel Dynamics, Inc. – Iron Dynamics Division
Source Address: 4500 County Road 59, Butler, IN 46721
Mailing Address: 4500 County Road 59, Butler, IN 46721
Part 70 Permit No.: T033-12614-00076

This form consists of 2 pages

Page 1 of 2

<input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none">▪ The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and▪ The Permittee must submit notice in writing or by facsimile within two (2) days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.
--

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NOX, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865**

**PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Steel Dynamics, Inc. – Iron Dynamics Division
Source Address: 4500 County Road 59, Butler, IN 46721
Mailing Address: 4500 County Road 59, Butler, IN 46721
Part 70 Permit No.: T033-12614-00076

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation::
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

Addendum to the
Technical Support Document for a PSD/SSM and Significant Permit
Modification

Source Description and Location

Source Name:	Steel Dynamics, Inc. - Iron Dynamics Division
Source Location:	4500 County Road 59, Butler, IN 46721
County:	Dekalb
SIC Code:	3312
Operation Permit No.:	T 033-12614-00076
Operation Permit Issuance Date:	October 5, 2006
PSD/SSM No.:	033-26976-00076
Significant Permit Modification No.:	033-27112-00076
Permit Reviewer:	Kristen Layton

On November 25, 2009, the Office of Air Quality (OAQ) had a notice published in the Auburn Evening Star, Auburn, Indiana, stating that Steel Dynamics, Inc. - Iron Dynamics Division had applied to revise the submerged arc furnace's (SAF) SO₂ and CO PSD BACT, modify the SAF's 326 IAC 8-1-6 BACT limit, modify the SAF's throughput, and request acknowledgment of the pressure relief valves for the SAF and rotary hearth furnace. The notice also stated that OAQ proposed to issue a permit for this PSD/SSM and Significant Permit Modification and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On December 14, 2009, Barry Smith, representing Steel Dynamics, Inc. - Iron Dynamics Division, submitted a comment on the proposed PSD/SSM and Significant Permit Modification. The summary of the comment is as follows:

Comment:

The Condition D.3.20(b) requires monitoring of the "water supply pressure." Water pressure cannot be monitored since it is on a plant wide loop system. We have always monitored water supply rate in gal/min. It should read "water supply ~~pressure~~ rate."

Response:

Condition D.3.20(b) has been modified as follows:

D.3.20 Record Keeping Requirements

...

- (b) To document compliance with D.3.16(b), the Permittee shall maintain records of the SAF continuous electronic recording of the pressure differential through the venturi constriction and water supply ~~pressure rate~~ of the SAF scrubber. The Permittee shall include in its continuous record when a pressure differential is not taken and the reason for the lack of a recording (e.g. the process was not in operation).

...

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

**Technical Support Document (TSD) for a Part 70 PSD/Significant Source
Modification and Significant Permit Modification**

Source Description and Location

Source Name:	Steel Dynamics, Inc. - Iron Dynamics Division
Source Location:	4500 County Road 59, Butler, IN 46721
County:	Dekalb
SIC Code:	3312
Operation Permit No.:	T 033-12614-00076
Operation Permit Issuance Date:	October 5, 2006
PSD/SSM No.:	033-26976-00076
Significant Permit Modification No.:	033-27112-00076
Permit Reviewer:	Kristen Layton

Source Definition

The source consists of:

- (a) Steel Dynamics, Inc., - Flat Roll Division, the primary operation, located at 4500 County Road 59, Butler, Indiana 46721; and
- (b) Steel Dynamics, Inc. – Iron Dynamics Division, the supporting operation, located at 4500 County Road 59, Butler, Indiana 46721.

Separate Part 70 permits will be issued to Steel Dynamics, Inc. - Flat Roll Division (033-8068-00043) and Steel Dynamics, Inc. – Iron Dynamics Division (033-12614-00076), solely for administrative purposes. For this permit, the Permittee is Steel Dynamics, Inc. – Iron Dynamics Division, the supporting operation.

Existing Approvals

The source was issued Part 70 Operating Permit No. T033-12614-00076 on October 5, 2006. The source has since received the following approvals:

Permit Type	Permit Number	Issuance Date
Significant Source Modification	033-22673-00076	October 13, 2006
Administrative Amendment	033-24152-00076	January 11, 2007
Revocation	033-24227-00076	February 6, 2007
Significant Permit Modification	033-23084-00076	February 9, 2007
Administrative Amendment	033-24207-00076	February 15, 2007
Revocation	033-24375-00076	March 7, 2007

County Attainment Status

The source is located in Dekalb County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, and St. Joseph as attainment for the 8-hour ozone standard.
- (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (4) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Dekalb County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Dekalb County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15th, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants

Dekalb County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(d) Since this source is classified as an iron and steel mill plant, it is considered one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

(e) Fugitive Emissions

Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are counted toward the determination of PSD and Emission Offset applicability.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	Emissions (ton/yr)
PM	Greater than 100
PM ₁₀	Greater than 100
PM _{2.5}	Greater than 100
SO ₂	Greater than 100
VOC	Greater than 100
CO	Greater than 100
NO _x	Greater than 100

- (a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).
- (c) These emissions are based upon the Technical Support Document for Significant Permit Modification No. 033-23084-00076.

The table below summarizes the potential to emit HAPs for the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

HAPs	Potential To Emit (ton/yr)
Single HAP	Less than 10
Total	Less than 25

This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2006 OAQ emission data.

Pollutant	Actual Emissions (ton/yr)
PM	Not Reported
PM ₁₀	166
SO ₂	225
VOC	106
CO	743
NO _x	1,190
Lead	0.22

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Steel Dynamics, Inc. - Iron Dynamics Division on September 10, 2008, relating to the following:

- (a) The revision of the Submerged Arc Furnace's (SAF) SO₂ and CO Prevention of Significant Deterioration (PSD) BACT based on recent test data.
- (b) An increase in the Submerged Arc Furnace's VOC limit. The Submerged Arc Furnace (SAF) is now subject to 326 IAC 8-1-6 VOC BACT as part of this modification. The Submerged Arc Furnace and the Ladle Metallurgical Stations (LMS) at Steel Dynamics, Inc. - Flat Roll Division (033-00043) were part of the same Construction Permit No. 033-9187-00043. The SAF and LMS were each given VOC limits in Construction Permit No. 033-9187-00043 in order to render the requirements of 326 IAC 2-2 not applicable for VOC. Steel Dynamics, Inc. - Flat Roll Division (033-00043) permit is being modified under Significant Permit Modification No. 033-28134-00043 to change the LMS limit to accommodate the increase in the SAF VOC limit so that 326 IAC 2-2 will remain not applicable for VOC for Construction Permit No. 033-9187-00043.
- (c) The throughput for the SAF has been changed from 106 tph input to 55 tph output. The unit was originally permitted based on engineering specifications for two Rotary Hearth Furnaces feeding it. A second furnace was never permitted and at this time, the Permittee does not plan to build one. The Permittee requests the SAF throughput reflect what the unit is capable of without the second unit.
- (d) Acknowledgment of the existing pressure relief valves (i.e. E-caps) for the SAF and Rotary Hearth Furnace (RHF). These valves are part of the design of the SAF and RHF and exist only for emergency purposes to avoid overpressure conditions which can be potentially catastrophic.
- (e) The addition of the alternative operating scenario of routing the SAF exhaust after it has passed through the wet scrubber to the Rotary Hearth Furnace (RHF) for a supplemental fuel source.

Enforcement Issues

IDEM is aware that the SAF has been unable to meet its current SO₂, VOC and CO limits in compliance testing. IDEM is reviewing this matter and will take the appropriate action. This proposed approval will change the SAF's SO₂, VOC and CO limits after the issuance of this permit. Additionally, IDEM is aware that the SAF was not tested for NO_x by the January 2009 due date. IDEM is reviewing this matter and will take the appropriate action.

Permit Level Determination – Part 70

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

This source modification is subject to 326 IAC 2-7-10.5(f)(1) because it requires a revision to a requirement under 326 IAC 2-2 and a new requirement under 326 IAC 8-1-6. Additionally, the modification will be incorporated into the Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12(d), because it changes case-by-case determinations of the existing emission limitations, requires a new case-by-case determination of an emission limitation, and significant changes to monitoring requirements.

Permit Level Determination – PSD

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 source and permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

- (a) The change in the limits established as PSD BACT for the SAF will require a re-evaluation of the BACT under 326 IAC 2-2, PSD Rules.

Federal Rule Applicability Determination

There is no change in the federal rule applicability due to this modification.

NESHAP:

- (a) The SAF is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Area Sources: Electric Arc Furnace Steelmaking Facilities, Subpart YYYYYY because the SAF does not produce molten steel.

State Rule Applicability Determination

The following state rules are applicable to the source due to the modification:

326 IAC 2-2 (PSD)

The SAF is subject to this rule. A re-evaluation of the PSD BACT for CO and SO₂ emissions from the SAF has been made. See Appendix A for the detailed BACT analysis.

The equivalent lb/hr limit for NO_x has been modified accordingly as follows:

Pursuant to CP 033-9187-00043, issued on March 24, 1998, PSD/SSM 033-26976-00076, and 326 IAC 2-2-3, the nitrogen oxide(s) emissions from the submerged arc furnace Stack 58 shall not exceed 0.117 pounds per ton. ~~At a maximum process throughput of 106 tons per hour, this limit is equivalent to 12.4~~ **and 6.45** pounds of NO_x per hour.

This does not constitute a BACT reopening because there has not been a physical modification to the SAF, a change in its method of operation, nor has the source requested a change in the NO_x limit for the SAF. However, the nominal capacity of the SAF has been changed to accurately reflect the unit's current capacity. The current lb/hr limit was set based on a higher capacity which the unit can not currently achieve (as described in "Description of Proposed Modification"). Therefore, the lb/hr limit has been modified to reflect the unit's actual nominal capacity.

326 IAC 2-2-4 (Air Quality Analysis Requirements)

Section (4)(a) of this rule, requires that the PSD application shall contain an analysis of ambient air quality in the area that the major stationary source would affect for pollutants that are emitted at major levels or significant amount. Steel Dynamics, Inc. - Iron Dynamics Division has submitted an air quality analysis, which has been evaluated by IDEM's Technical Support and Modeling Section. See details in Appendix B.

326 IAC 2-2-5 (Air Quality Impact Requirements)

326 IAC 2-2-5(e)(1) of this rule, requires that the air quality impact analysis required by this section shall be conducted in accordance with the following provisions:

- (1) Any estimates of ambient air concentrations used in the demonstration processes required by this section shall be based upon the applicable air quality models, data bases, and other requirements specified in 40 CFR Part 51, Appendix W (Requirements for

Preparation, Adoption, and Submittal of Implementation Plans, Guideline on Air Quality Models).

- (2) Where an air quality impact model specified in the guidelines cited in subdivision (1) is inappropriate, a model may be modified or another model substituted provided that all applicable guidelines are satisfied.
- (3) Modifications or substitution of any model may only be done in accordance with guideline documents and with written approval from U.S. EPA and shall be subject to public comment procedures set forth in 326 IAC 2-1.1-6.

326 IAC 2-2-6 (Increment Consumption Requirements)

326 IAC 2-2-6(a) requires that any demonstration under section 5 of this rule shall demonstrate that increased emissions caused by the proposed major modification will not exceed eighty percent (80%) of the available maximum allowable increases (MAI) over the baseline concentration of sulfur dioxide, particulate matter, and nitrogen dioxide indicated in subsection (b)(1) of this rule.

326 IAC 2-2-7 (Additional Analysis, Requirements)

326 IAC 2-2-7(a) requires an analysis of the impairment to visibility, soils and vegetation. An analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial, and other growth associated with the source. See detailed air quality analysis in Appendix B.

326 IAC 2-2-10 (Source Information)

The Permittee has submitted all information necessary to perform an analysis or make the determination required under this rule.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the Submbered Arc Furnace will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 8-1-6 (BACT)

The SAF is subject to this rule. An evaluation of BACT for VOC emissions from the SAF has been made. See Appendix A for the detailed BACT analysis.

326 IAC 9-1 (Carbon Monoxide Emission Limits)

The SAF was determined to be subject to this rule in CP 033-9187-00043 because it is used to smelt a ferrous metal and has a capacity greater than 10 tons per hour. This rule requires that the carbon monoxide emissions be controlled by an afterburner, boiler, or other approved method. The CO emissions from the SAF are controlled by an afterburner. Therefore, the SAF complies with the requirements of 326 IAC 9-1.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section

D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The Compliance Determination and Monitoring Requirements applicable to this modification are as follows:

- (1) **Testing Requirements**
In order to demonstrate compliance with Conditions D.3.1, D.3.4, D.3.5, D.3.6, and D.3.8 the Permittee shall:

Within twelve (12) months after issuance of Significant Permit Modification No. 033-27112-00076, the Permittee shall perform PM/PM₁₀, SO₂, VOC, NO_x, and CO testing on the SAF Stack 58, utilizing testing methods approved by the Commissioner. The tests shall be repeated every two and one-half (2.5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C.9 - Performance Testing.
- (2) **Sulfur Dioxide (SO₂) - Best Available Control Technology**
Pursuant to PSD SSM No. 033-26976-00076 and in order to comply with D.3.4, the wet venturi scrubber for sulfur dioxide (SO₂) control shall be in operation and control SO₂ emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation.
- (3) **Volatile Organic Compounds (VOC) - Best Available Control Technology**
Pursuant to PSD SSM No. 033-26976-00076 and in order to comply with D.3.5, the Permittee shall either:
 - (a) have an afterburner in operation and control for volatile organic compound (VOC) emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation, or
 - (b) redirect the off gas from the Submerged Arc Furnace, after it goes through the wet scrubber, to the Rotary Hearth Furnace with an afterburner for control of volatile organic compound (VOC) emissions.
- (4) **Carbon Monoxide (CO) Best Available Control Technology**
Pursuant to CP-033-9187-00043, issued on March 24, 1998, PSD SSM No. 033-26976-00076, and in order to comply with D.3.6 and D.3.7, the Permittee shall either:
 - (a) have an afterburner in operation at all times the Submerged Arc Furnace is in operation, or
 - (b) redirect the off gas from the Submerged Arc Furnace, after it goes through the wet scrubber, to the Rotary Hearth Furnace with an afterburner for control of carbon monoxide.
- (5) **Afterburner Temperature**
A continuous monitoring system shall be calibrated, maintained and operated on the afterburner for measuring operating temperature. The output of this system shall be recorded as a one (1) hour average. The Permittee shall take appropriate response steps in accordance with Section C.16 – Response to Excursions or Exceedances whenever the one (1) hour average temperature of the afterburner is below 1128 °F. A one (1) hour average temperature that is below 1128 °F is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit. The Permittee shall

comply with Condition D.1.13 instead of this condition when the off gas from the Submerged Arc Furnace is being routed to the Rotary Hearth Furnace.

(6) Parametric Monitoring

(a) The Permittee shall record the pressure drop and flow rate of the scrubber used in conjunction with the submerged arc furnace at least once per day when the SAF is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 30 to 60 inches of water or a range established during the latest stack test and the flow rate of the scrubber is below the minimum of 40 gallons per minute or a minimum rate established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. A pressure drop or flow rate reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(b) The Permittee shall demonstrate compliance with Condition D.3.3 by either:

- (1) The operation of a bag leak detection system ("BLDS") on the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF when the DRI bins, slag pots and tapping associated with the SAF are in operation and the baghouse used in conjunction with the RHF discharge chute when the RHF is in operation. The BLDS shall meet the following criteria
 - (A) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0032 grains per dry standard cubic foot or less.
 - (B) The bag leak detections system sensor must provide output of relative particulate matter loading.
 - (C) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.
 - (D) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the US 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.
 - (E) 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 devices, and establishing the alarm set pints and the alarm delay time.
 - (F) 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 condition.

- (G) The bag leak detection system sensors must be inspected monthly and build-up must be removed from probe and insulator.
- (H) The Permittee shall perform monthly QA checks including response tests and electronics drift checks and opacity readings to confirm operation of the baghouse is in order.
- (I) The bag detector must be installed on each compartment or downstream of the baghouse.
- (J) In the event a bag leak detection system alarm is triggered and if operation will continue for ten (10) days or more after the failure is observed before the unit will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable monitoring parameters with respect to normal and the results of any response actions taken up to the time of notification.
- (K) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

or

(2) Opacity Readings by certified opacity observer:

- (A) Opacity from the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF and the baghouse used in conjunction with the RHF discharge chute shall be performed at least once per day during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.
- (B) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.
- (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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.

- (c) The instruments used for determining the pressure, flow rate, fan amperage and duct velocity shall comply with Section C.13- Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated or replaced at least once every twelve (12) months.

- (7) Scrubber Failure Detection
In the event, a scrubber failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

These determination and monitoring conditions are necessary because the scrubber and afterburner for the SAF must operate properly to ensure compliance with 326 IAC 2-2 (PSD BACT), 326 IAC 8-1-6 (BACT), and 326 IAC 2-7 (Part 70).

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. T033-12614-00076. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Model Changes Made by IDEM

- (1) *To minimize future amendments to the issued Part 70 Permits, the OAQ decided to delete the name and/or title of the Responsible Official (RO) in Section A.1, General Information, of the permit. However, OAQ will still be evaluating if a change in RO meets the criteria specified in 326 IAC 2-7-1(34). The revised permit condition is as follows:*

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

The Permittee owns and operates a stationary Direct Reduced Iron (DRI) manufacturing operation at a steel minimill.

Responsible Official: ~~Plant Manager or designee as defined in 326 IAC 2-7-1(34) (A)~~
Source Address: 4500 County Road 59, Butler, Indiana 46721
Mailing Address: 4500 County Road 59, Butler, Indiana 46721
Phone Number: 260-868-8000
SIC Code: 3312
County Location: DeKalb
Source Location Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source under PSD Rules
Minor Source, Section 112 of the Clean Air Act
1 of 28 Source Categories

- (2) *Several of IDEM's Branches and sections have been renamed and IDEM, OAQ's mailing address have been revised. Therefore, IDEM has updated the addresses listed in the permit. References to Permit Administration and Development Section and the Permits Branch have been changed to Permit Administration and Support Section. References to Asbestos Section, Compliance Data Section, Air Compliance Section, and Compliance Branch have been changed to Compliance and Enforcement Branch.*

**Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251**

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

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

- (3) *The clean unit and pollution control project provisions of the U.S. EPA's New Source Review Reform Rules were vacated on June 24, 2005 by a United States Court of Appeals for the District of Columbia Circuit decision. The OAQ plans to remove the vacated provisions from 326 IAC 2 at the next state rulemaking opportunity. Paragraph (c) of Condition C.19, Record Keeping Requirements, has been revised to remove references to the clean unit and pollution control project provisions. This decision also remanded the "reasonable possibility" standard back to U.S. EPA. On January 22, 2008 U.S. EPA promulgated a rule to address the remand, by the U.S. Court of Appeals for the District of Columbia on June 25, 2005, of the reasonable possibility provisions of the December 31, 2002 major NSR reform rule. IDEM has agreed, with U.S. EPA, to interpret "reasonable possibility" in 326 IAC 2-2 and 326 IAC 2-3 consistent with the January 22, 2008 U.S. EPA rule. To implement this interpretation, IDEM is revising Section C - General Record Keeping Requirements and Section C - General Reporting Requirements(original Conditions C.19 and C.20). Revisions to have been made to the Section C – General Recordkeeping and Section C – General Reporting Requirements (original Conditions C.19 and C.20) to reflect NSR (New Source Review) reform provisions at the major sources.*

C.19 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2]

- (a) Records of all required monitoring data and support information required by this permit 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 physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented no later than ninety (90) days after permit issuance.
- (c) If there is a reasonable possibility (**as defined in 40 CFR 51.165(a)(6)(vi)(A), 40 CFR 51.165(a)(6)(vi)(B), 40 CFR 51.166(r)(6)(vi)(a), and/or 40 CFR 51.166(r)(6)(vi)(b)**) that a "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, other than projects at a **source with a Plantwide Applicability Limitation (PAL) Clean Unit**, which is not part of a "major modification" (as defined in 326 IAC 2-2-1 (ee) and/or 326 IAC 2-3-1 (z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1 (rr) and/or 326 IAC 2-3-1 (mm)), the Permittee shall comply with following:
- (1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, document and maintain the following records:
- (A) A description of the project.
- (B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
- (C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:
- (i) Baseline actual emissions;
- (ii) Projected actual emissions;
- (iii) Amount of emissions excluded under section; 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1(mm)(2)(A)(iii); and
- (iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A) and/or 40 CFR 51.166(r)(6)(vi)(a)) that a “project” (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(II)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

- (21) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and
- (32) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.20 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted no later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance ~~Data Section~~ **and Enforcement Branch**, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) 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.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted no later than thirty (30) days after the end of the reporting period. All reports that require certification shall be signed by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar months, quarters or years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.
- (f) If the Permittee is required to comply with the recordkeeping provisions of ~~(e)~~ **(d)** in Section C.19- General Record Keeping Requirements for any “project” (as defined in 326

IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ.

- (1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C.19 - General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C.19 - General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq)), for that regulated NSR pollutant, and
 - (2) The emissions differ from the preconstruction projection as documented and maintained under Section C.19 - General Record Keeping Requirements (c)(1)(C)(ii).
- (g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:
- (1) The name, address, and telephone number of the major stationary source.
 - (2) The annual emissions calculated in accordance with ~~(c)(2) and (3)~~ **(d)(1) and (2)** in Section C.19 - General Record Keeping Requirements.
 - (3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).
 - (4) Any other information that the Permittee deems fit to include in this report.

Reports required in this part shall be submitted to:

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

- (h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C.19 - General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.
- (4) *IDEM, OAQ is revising Section B - Emergency Provisions to allow the Permittee to reference a previously reported emergency under paragraph (b)(5) in the Quarterly Deviation and Compliance Monitoring Report.*

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

- ...
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report. **Any emergencies that have been previously reported pursuant to paragraph (b)(5) of this condition and certified by an "responsible official" need only referenced by the date of the original report.**
- (5) *With regards to record keeping requirements for visible emission notations (and other parametric monitoring), the intent is that the Permittee needs to make a record of some sort every day. So if they do the VE observation, then they write down normal or abnormal. Additionally, if they don't do the VE observation, they still need to make some sort of record that day as to why they didn't, such as the unit was not operating, or the unit was venting indoors that day, etc. In order to attempt to clarify the requirements, the recordkeeping requirements relating the VEs and other*

daily parametric monitoring have been revised. Conditions D.1.16(c), D.2.9(b),(c), D.3.20(b),(e),(f),(g), D.4.8(a),(b), D.5.16(a), D.6.13(a), D.7.8(a),(b), D.8.8(a), and D.10.9(a),(b) have been modified as follows:

D.1.16 Record Keeping Requirements

...

- (c) To document compliance with Condition D.1.14(a) (if applicable), the Permittee shall maintain records of the once per day opacity readings of the rotary hearth furnace process baghouse Stack 40. **The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).**
- (d) To document compliance with Condition D.1.15 (if applicable), the Permittee shall maintain records of the once per day pressure drop during normal operation. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**

...

D.2.9 Record Keeping Requirements

...

- (b) To document compliance with Condition D.2.7(a) (if applicable), the Permittee shall maintain records of once per day opacity readings of the RHF fugitives and RHF briquetter baghouses Stack 77 exhausts. **The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).**
- (c) To document compliance with Condition D.2.8 (if applicable), the Permittee shall maintain records of the once per day pressure drop during normal operation. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**

...

D.3.20 Record Keeping Requirements

...

- (b) To document compliance with Condition D.3.16(b)(1), (if selected), the Permittee shall maintain the records of the observed opacity readings of the SAF Stack 58 at least once per day. **The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).**
- (c) To document compliance with D.3.44**16**(b)(2)(A) and (B), (if selected), the Permittee shall maintain records of the SAF continuous electronic recording (**on a 3-hour average basis**) of the pressure differential through the venturi constriction and water supply pressure of the SAF scrubber. **The Permittee shall include in its continuous record when a pressure differential is not taken and the reason for the lack of a recording (e.g. the process was not in operation).**
- (d) To document compliance with Condition D.3.45**17**, the Permittee shall maintain records of the thermal oxidizer-~~afterburner~~ temperature on a continuous basis. **The Permittee shall include in its continuous record when a temperature is not taken and the reason for the lack of a temperature recording (e.g. the process was not in operation).**

- (e) To document compliance with Condition D.3.18(a) and (b), the Permittee shall maintain records of the pressure drop and flow rate of the SAF scrubber, at least once per day. **The Permittee shall include in its daily record when a pressure drop reading and flow rate is not taken and the reason for the lack of a pressure drop reading and flow rate (e.g. the process did not operate that day).**
- (f) To document compliance with Condition D.3.18(c), the Permittee shall maintain records of the pressure drop of the SAF desulfurization station baghouse at least once per day. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**
- (g) To document compliance with Condition D.3.18(d), the Permittee shall maintain records of the pressure drop of the RHF discharge chute baghouse at least once per day. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**

...

D.4.8 Record Keeping Requirements

- (a) To document compliance with Condition D.4.5, the Permittee shall maintain records of the once per day visible emission notations of the shed and railcar dumper Stacks 67 and 68 exhaust. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).**
- (b) To document compliance with Condition D.4.6, the Permittee shall maintain records of the once per day pressure drop during normal operation. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**

...

D.5.16 Record Keeping Requirements

- (a) To document compliance with Condition D.5.13, the Permittee shall maintain records of the once per day visible emission notations of the Coal Dryer Stack 75 exhaust. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).**

...

D.6.13 Record Keeping Requirements

- (a) To document compliance with Condition D.6.11, the Permittee shall maintain records of the once per day visible emission notations of the ore dryer Stack 76 exhaust. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).**

...

D.7.8 Record Keeping Requirements

- (a) To document compliance with Condition D.7.5 the Permittee shall maintain records of the once per day visible emission notations of the ore preparation Stack 74 exhaust. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).**
- (b) To document compliance with Condition D.7.6 the Permittee shall maintain records of the once per day pressure drop during normal operation. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**

...

D.8.8 Record Keeping Requirements

- (a) To document compliance with Condition D.8.7, the Permittee shall maintain records of the once per day visible emission notations of the ore preparation Stack 80 exhaust. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).**

...

D.10.9 Record Keeping Requirements

- (a) To document compliance with Condition D.10.6, the Permittee shall maintain records of the visible emission notations required by that condition. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).**
- (b) To document compliance with Condition D.10.7, the Permittee shall maintain records of the pressure drop readings required by that condition. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**

...

- (6) *Condition D.9.2 - Preventative Maintenance Plan was added as follows since the stacker conveyor and closed conveyors must be properly maintained to in order to comply with their opacity limitations.*

D.9.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the conveyors.

Proposed Changes Due to the Modification

- (1) *Condition A.3 - Emission Units and Pollution Control Equipment Summary has been modified to reflect the change in the capacity of the SAF and associated units (briquetters and pan conveyors), the removal of the SAF desulfurization station, and to acknowledge the existence of pressure relief valves on the SAF and Rotary Hearth Furnace as follows:*

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

Steel Dynamics, Inc. – Iron Dynamics Division consists of the following emission units and pollution control devices:

Rotary Hearth Furnace (RHF)

- (a) One (1) rotary hearth furnace (RHF) constructed in 1998 and modified in 2001 with an addition of ten (10) natural gas-fired low-NOx burners, having a total furnace nominal heat input of 376 MMBtu per hour. The RHF processes coal and iron ore to produce a nominal throughput of ninety-six (96) tons of direct reduced iron per hour. Emissions are controlled by an afterburner for CO and VOC, lime injection in the gas stream for SO₂, selective non-catalytic reduction for NOx, and a baghouse for PM/PM₁₀ and **lead calcium sulfate (formed during reaction of lime and SO₂)**. Emissions exhaust through Stack 40. **The RHF is equipped with a pressure relief valve for safety purposes.**
- ~~(b) Use of Electric Arc Furnace (EAF) baghouse dust and other iron bearing feedstock as a supplemental feed material for the RHF.~~

Submerged Arc Furnace (SAF)

- (a) Submerged Arc Furnace (SAF)
- (1) One (1) submerged arc furnace (SAF), constructed in 1998, that processes direct reduced iron (DRI), coke and lime to produce a nominal ~~throughput~~ **output** of ~~406~~ **55** tons of liquid hot metal (pig iron) per hour. Emissions are exhausted through a hole in the stationary lid, ~~with particulate controlled by a wet venturi scrubber~~ **with a nominal air flow of 300,00 dscfm** and ~~carbon monoxide (CO) controlled by a thermal oxidizer~~ **an afterburner** exhausting through Stack 58. **The SAF is equipped with a pressure relief valve for safety purposes.**
- ~~(2) One (1) desulfurization station, constructed in 1998, with a nominal capacity of 106 tons per hour, uses lime to remove sulfur in the pig iron produced at the SAF. Emissions from the desulfurization station, DRI bins, slag pots and tapping associated with the SAF are captured by canopy hoods and particulate matter is controlled by the desulfurization baghouse exhausting through Stack 58.~~
- (b) ...
- ...
- (d) Briquetters
- Two (2) enclosed SAF hot briquetters, constructed in 2002, with a nominal throughput of ~~406~~ **55** tons per hour, exhausting through Stack 58.
- (e) Conveyors
- (1) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 1, constructed in 2000, with a nominal throughput rate of ~~406~~ **55** tons per hour, and
- (2) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 2, constructed in 2003, with a nominal throughput rate of ~~406~~ **55** tons per hour.
- (2) *The following changes have been made to Section D.3:*
- (a) *Change the capacity for the SAF and associated units (briquetters and pan conveyors);*
- (b) *Descriptive changes to the SAF;*
- (c) *The removal of the SAF desulfurization station;*
- (d) *Modification and clarification of PSD BACT limits for the SAF, and associated compliance determination, monitoring, and record keeping;*
- (e) *Inclusion of the new 326 IAC 8-1-6 BACT limit for the SAF, and associated compliance determination, monitoring, and record keeping;*

- (f) *Modified the pressure drop due to results from the latest stack test;*
- (g) *Clarified which units and control devices the preventative maintenance plan condition applies;*
- (h) *Per the Permittee's request, the option to use a continuous monitoring system for measuring opacity has been removed;*
- (i) *Per the Permittee's request, the option to route the off gas from the Submerged Arc Furnace to the Rotary Hearth Furnace so the off gas can be used as a supplemental fuel was added; and*
- (j) *The Permittee appealed Condition D.3.18 as overly burdensome. Condition D.3.18 is modified as agreed upon by IDEM and Steel Dynamics, Inc. - Iron Dynamics Division in the April 26, 2007 Joint Stipulation for Stay and in further discussion for clarification.*

SECTION D.3 FACILITY OPERATION CONDITIONS

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

Submerged Arc Furnace (SAF)

(a) Submerged Arc Furnace (SAF)

(1) One (1) submerged arc furnace (SAF), constructed in 1998, that processes direct reduced iron (DRI), coke and lime to produce a nominal ~~throughput~~ **output** of ~~one hundred six (106)~~ **55** tons of liquid hot metal (pig iron) per hour. Emissions are exhausted through a hole in the stationary lid, ~~with particulate~~ controlled by a wet venturi scrubber **with a nominal air flow of 300,000 dscfm** and ~~carbon monoxide (CO) controlled by a thermal oxidizer~~ **an afterburner** exhausting through Stack 58. **The SAF is equipped with a pressure relief valve for safety purposes.**

~~(2) One (1) desulfurization station, constructed in 1998 with a nominal capacity of 106 tons per hour, uses lime to remove sulfur in the pig iron produced at the SAF. Emissions from the desulfurization station, DRI bins, slag pots and tapping associated with the SAF are captured by canopy hoods and particulate matter is controlled by the desulfurization baghouse exhausting through Stack 58.~~

(b) RHF Discharge Chute

One (1) 60,000 dscfm airflow RHF Discharge Chute baghouse, added in 2003, to control fugitive emissions from the pan conveyor used to transport material from the Rotary Hearth Furnace to the Submerged Arc Furnace exhausting to Stack 58.

(c) Ladle Preheaters

Two (2) ladle preheaters each with a nominal heat input of 9 MMBtu per hour;

(d) Briquetters

Two (2) enclosed SAF hot briquetters, constructed in 2002, with a nominal throughput of ~~406~~ **55** tons per hour, exhausting through Stack 58.

(e) Conveyors

(1) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 1, constructed in 2000, with nominal throughput rate of ~~406~~ **55** tons per hour, and

(2) One (1) Hot Pan Conveyor, identified as Hot Pan Conveyor 2, constructed in 2003, with a nominal throughput rate of ~~406~~ **55** tons per hour.

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

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

D.3.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3, the PM/PM₁₀ emissions from the submerged arc furnace (SAF) Stack 58 shall not exceed 0.0032 grains per dry standard cubic feet (dscf). ~~At a maximum air flow rate of 300,000 dry standard cubic feet per minute (dscfm), this limit is equivalent to~~ **and 8.23 pounds of PM/PM₁₀ per hour.**

- (b) Pursuant to CP-033-9187-00043, issued March 24, 1998 and 326 IAC 2-2-3, the PM/PM₁₀ emissions from the ~~desulfurization station~~, DRI bins, slag pots and tapping associated with the SAF shall be captured by canopy hoods and exhausted to the SAF baghouse.

D.3.2 Particulate (PM/PM₁₀) (Particulate Emissions Limitations for Manufacturing Processes) [326 IAC 6-3-2]

Pursuant to exemption 033-17200-00076, issued August 6, 2003 and 326 IAC 6-3-2 (Particulate Emissions Limitations for Manufacturing Processes), particulate emissions from each hot pan conveyor ~~transfer point~~ shall not exceed ~~51.9~~ **45.5** pounds per hour when operating at a nominal process weight rate of ~~406~~ **55** tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate ~~in excess of up to~~ **in excess of up to** sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

D.3.3 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the visible emissions from the submerged arc furnace (SAF) Stack 58 shall not exceed three percent (3%) opacity determined by a six (6) minute average.
- (b) Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the visible emissions from any building opening, shall not exceed three (3%) percent opacity determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).

D.3.4 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, **PSD SSM No. 033-26976-00076**, and 326 IAC 2-2-3, the sulfur dioxide emissions from the submerged arc furnace Stack 58 shall not exceed ~~0.084~~ **0.068** pounds per ton. ~~At a maximum process throughput of 106 tons per hour, this limit is equivalent to 4.6 and 3.76~~ **and 3.76** pounds of SO₂ per hour.

D.3.5 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3] **[326 IAC 8-1-6]**

Pursuant to CP-033-9187-00043, issued on March 24, 1998, **PSD SSM No. 033-26976-00076**, and 326 IAC 2-2-3, the volatile organic compound emissions from the submerged arc furnace Stack 58 shall not exceed ~~0.035~~ **0.106** pounds per ton. ~~At a maximum process throughput of 106 tons per hour, this limit is equivalent to 3.7 and 5.83~~ **and 5.83** pounds of VOC per hour.

D.3.6 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, **PSD SSM No. 033-26976-00076**, and 326 IAC 2-2-3, the carbon monoxide emissions from the submerged arc furnace Stack 58 shall not exceed ~~4.26~~ **2.85** pounds per ton. ~~At a maximum process throughput of 106 tons per hour, this limit is equivalent to 133.5 and 156.75~~ **and 156.75** pounds of CO per hour.

D.3.7 Carbon Monoxide (CO) [326 IAC 9-1]

Pursuant to CP033-9187-00043, issued March 24, 1998, **PSD SSM No. 033-26976-00076**, and 326 IAC 9-1, the Permittee shall not allow the discharge of CO from the Submerged Arc Furnace unless the waste gas stream is controlled by a ~~thermal oxidizer~~ **direct-flame afterburner**.

D.3.8 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998 and 326 IAC 2-2-3, the nitrogen oxide(s) emissions from the submerged arc furnace Stack 58 shall not exceed 0.117 pounds per

~~ton. At a maximum process throughput of 106 tons per hour, this limit is equivalent to 12.4 and 6.46 pounds of NOx per hour.~~

D.3.9 Applicability [326 IAC 2-1.1-3]

Pursuant to Exemption 033-17200-00076, issued August 6, 2003 and 326 IAC 2-1.1-3, the SAF briquetters and conveyors provided in the description information above are classified as exempt from air pollution permit requirements.

D.3.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B.10 - Preventive Maintenance Plan, of this permit, is required for the RHF discharge chute baghouse, Submerged Arc Furnace, **ladle preheaters, SAF hot briquetters, wet venturi scrubber, afterburner, desulfurization station** and the associated baghouses.

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

D.3.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

~~Within 60 days from start up of the Submerged Arc Furnace and in order to comply with conditions D.3.1, D.3.4, D.3.5, D.3.6 and D.3.8 the Permittee shall perform PM/PM₁₀, SO₂, VOC, CO and NOx testing on the SAF Stack 58, utilizing testing methods approved by the Commissioner. The tests shall be repeated every two and one-half (2.5) years from the date of the most recent valid compliance demonstration. PM10 includes both filterable and condensable components. Testing shall be conducted in accordance with Section C.9 - Performance Testing.~~

In order to demonstrate compliance with Conditions D.3.1, D.3.4, D.3.5, D.3.6, and D.3.8 the Permittee shall:

Within twelve (12) months after issuance of Significant Permit Modification No. 033-27112-00076, the Permittee shall perform PM/PM₁₀, SO₂, VOC, NO_x, and CO testing on the SAF Stack 58, utilizing testing methods approved by the Commissioner. The tests shall be repeated every two and one-half (2.5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C.9 - Performance Testing.

D.3.12 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3] [326 IAC 2-7-6(6)]

- (a) Pursuant to CP-033-9187-00043, issued on March 24, 1998, and in order to comply with D.3.1(a), the wet venturi scrubber for particulate control shall be in operation and control emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation.
- (b) Pursuant to 326 IAC 2-2-3, Best Available Control Technology, and in order to comply with D.3.1(a), the RHF discharge chute baghouse for particulate control shall be in operation and control emissions from the RHF discharge chute at all times the RHF is in operation.
- (c) Pursuant to SSM 033-15955-00043, issued on December 18, 2002, and in order to comply with D.3.1(b), the desulfurization baghouse for particulate control shall be in operation and control emissions from the ~~desulfurization station~~, DRI bins, slag pots and tapping associated with the SAF at all times the ~~desulfurization station~~, DRI bins, slag pots and tapping are in operation.
- (d) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the

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

D.3.13 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to PSD SSM No. 033-26976-00076 and in order to comply with D.3.4, the wet venturi scrubber for sulfur dioxide (SO₂) control shall be in operation and control SO₂ emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation.

D.3.14 Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to PSD SSM No. 033-26976-00076 and in order to comply with D.3.5, the Permittee shall either:

- (a) have an afterburner in operation and control for volatile organic compound (VOC) emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation, or
- (b) redirect the off gas from the Submerged Arc Furnace, after it goes through the wet scrubber, to the Rotary Hearth Furnace with an afterburner for control of volatile organic compound (VOC) emissions.

D.3.135 Carbon Monoxide (CO) Best Available Control Technology [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, PSD SSM No. 033-26976-00076, and in order to comply with D.3.6 and D.3.7, the Permittee shall either:

- (a) ~~have an the thermal oxidizer afterburner for carbon monoxide control shall be in operation and control CO emissions from the Submerged Arc Furnace at all times the Submerged Arc Furnace is in operation-, or~~
- (b) redirect the off gas from the Submerged Arc Furnace, after it goes through the wet scrubber, to the Rotary Hearth Furnace with an afterburner for control of carbon monoxide.

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

D.3.146 Continuous Emissions Rate Monitoring [326 IAC 3-5]

Pursuant to 326 IAC 3-5-1(d) and CP-033-9187-00043, issued March 24, 1998, the Permittee shall either:

- ~~(a) Calibrate, operate and maintain a continuous monitoring system for measuring opacity at the exhaust from the SAF Stack 58 in accordance with 326 IAC 3-5 and 40 CFR 60, Appendix B. The Permittee shall record the output of the system and provide record keeping and reporting pursuant to 326 IAC 3-5;~~

~~or~~

- (b) The Permittee shall do the following:
 - (1a) Have a certified visible emission observer observe opacity of the visible emissions from the SAF Stack 58 at least once per day when the SAF is operating. These observations shall be taken accordance with 40 CFR 60, Appendix A, Method 9 for at least three six minute averages. Records will be maintained of the visible emission observations;

and

- (2b) Install, calibrate, operate and maintain continuous monitoring systems for measuring and recording:
- (A1) The pressure loss through the venturi constriction of the SAF scrubber.
- (B2) The water supply pressure to the SAF scrubber. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The OAQ, Compliance Data Section must be consulted for approval in advance of selecting alternative locations for the pressure sensor or tap.

All scrubber monitoring devices shall use the continuous electronic recording to monitor the scrubber performance.

D.3.157 Thermal Oxidizer Afterburner Temperature

- (a) **When the off gas from the Submerged Arc Furnace is being routed to the afterburner,** A continuous monitoring system shall be calibrated, maintained and operated on the afterburner for measuring operating temperature. The output of this system shall be recorded as a ~~three (3)~~ **one (1)** hour average. ~~From the date of issuance of the Part 70 Operating Permit No. T033-12614-00076 until the stack test results are available,~~ The Permittee shall take appropriate response steps in accordance with Section C.16 – Response to Excursions or Exceedances whenever the ~~(3) one (1)~~ hour average temperature of the afterburner is below ~~4650°F~~ **1128 °F**. A ~~three (3) one (1)~~ hour average temperature that is below ~~4650°F~~ **1128 °F** is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (b) ~~The Permittee shall determine the hourly average temperature from the most recent valid stack test that demonstrates compliance in condition D.3.6.~~
- (c) ~~On and after the date the approved stack test results are available, the Permittee shall take appropriate response steps in accordance with Section C.16 – Response to Excursions or Exceedances whenever the three (3) hour average temperature of the thermal oxidizer is below the three (3) hour average temperature as observed during the compliant stack test. A three (3) hour average temperature that is below the three (3) hour average temperature as observed during the compliant stack test is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation of this permit.~~

D.3.168 Parametric Monitoring

- (a) ~~If the Permittee elects to do continuous emission monitoring under D.3.14(b), then,~~ The Permittee shall record the pressure drop and flow rate of the scrubber used in conjunction with the submerged arc furnace at least once per day when the SAF is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of ~~40~~ **30** to 60 inches of water or a range established during the latest stack test and the flow rate of the scrubber is below the minimum of 40 gallons per minute or a minimum rate established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. A pressure drop or flow rate reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (b) ~~The Permittee shall record the pressure drop across~~ **The Permittee shall demonstrate compliance with Condition D.3.3 by either:**

- (1) The operation of a bag leak detection system (“BLDS”) on the baghouse used in conjunction with the desulfurization station, DRI bins, slag pots and tapping associated with the SAF at least once per day when the desulfurization station, DRI bins, slag pots and tapping associated with the SAF are in operation, and the baghouse used in conjunction with the RHF discharge chute when the RHF is in operation. The BLDS shall meet the following criteria: ~~When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances, shall be considered a deviation from this permit.~~**
- (A) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0032 grains per dry standard cubic foot or less.**
 - (B) The bag leak detections system sensor must provide output of relative particulate matter loading.**
 - (C) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.**
 - (D) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the US 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.**
 - (E) 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 devices, and establishing the alarm set points and the alarm delay time.**
 - (F) 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 condition.**
 - (G) The bag leak detection system sensors shall be inspected in accordance with the device manufacturer recommendations.**
 - (H) The Permittee shall perform QA checks as recommended by the device manufacturer.**
 - (I) The bag detector must be installed on each compartment or downstream of the baghouse.**
 - (J) In the event a bag leak detection system alarm is triggered and if operation will continue for ten (10) days or more after the failure is observed before the unit will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed**

units will be repaired or replaced. The notification shall also include the status of the applicable monitoring parameters with respect to normal and the results of any response actions taken up to the time of notification.

- (K) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 - Response to Excursions or Exceedances shall be considered a deviation from this permit.**

or

(2) Opacity Readings by certified opacity observer:

- (A) Opacity from the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF and the baghouse used in conjunction with the RHF discharge chute shall be performed at least once per day during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.**
- (B) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.**
- (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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances shall be considered a deviation from this permit.**

~~(c) The Permittee shall record the pressure drop across the baghouse used in conjunction with the RHF discharge chute at least once per day, when for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C.16 – Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C.16 – Response to Excursions or Exceedances, shall be considered a deviation from this permit.~~

- ~~(dc) The instruments used for determining the pressure, and flow rate, fan amperage and duct velocity shall comply with Section C.13- Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) twelve (12) months.~~

D.3.179 Scrubber Failure Detection

In the event, a scrubber failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B.11 - Emergency Provisions).

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.1820 Record Keeping Requirements

- ~~(a) To document compliance with Condition D.3.14(a), (if selected), the Permittee shall maintain records of the readings of the continuous opacity monitoring system of the Submerged Arc Furnace (SAF) Stack 58.~~
- (ab) To document compliance with Condition D.3.1416(a)(b)(1), (if selected), the Permittee shall maintain the records of the observed opacity readings of the SAF Stack 58 at least once per day. **The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).**
- (be) To document compliance with D.3.1416(b)(2)(A) and (B), (if selected), the Permittee shall maintain records of the SAF continuous electronic recording **(on a 3-hour average basis)** of the pressure differential through the venturi constriction and water supply pressure of the SAF scrubber. **The Permittee shall include in its continuous record when a pressure differential is not taken and the reason for the lack of a recording (e.g. the process was not in operation).**
- (cd) To document compliance with Condition D.3.1517, the Permittee shall maintain records of the thermal oxidizer ~~afterburner~~ temperature on a continuous basis. **The Permittee shall include in its continuous record when a temperature is not taken and the reason for the lack of a temperature recording (e.g. the process was not in operation).**
- (de) To document compliance with Condition D.3.1618(a), the Permittee shall maintain records of the pressure drop and flow rate of the SAF scrubber, at least once per day. **The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).**
- ~~(f) To document compliance with Condition D.3.16(b), the Permittee shall maintain records of the pressure drop of the SAF desulfurization station baghouse at least once per day.~~
- (e) **To document compliance with Condition D.3.18(b)(1), (if applicable) the Permittee shall maintain records of the dates and times of all bag leak detection system alarms and the cause of each alarm.**
- (f) **To document compliance with Condition D.3.18(b)(2), (if applicable), the Permittee shall maintain records of the once per day opacity readings of the baghouse used in conjunction with the DRI bins, slag pots and tapping associated with the SAF and the baghouse used in conjunction with the RHF discharge chute. The Permittee shall include in its daily record when an opacity reading is not taken and the reason for the lack of an opacity reading (e.g. the process did not operate that day).**
- ~~(g) To document compliance with Condition D.3.16(c), the Permittee shall maintain records of the pressure drop of the RHF discharge chute baghouse at least once per day.~~
- (gh) All records shall be maintained in accordance with Section C.19 - General Record Keeping Requirements, of this permit.

D.3.1921 Reporting Requirements

The Permittee shall submit on a quarterly basis records of excess opacity readings (defined in 326 IAC 3-5-7 and 40 CFR Part 60.7). These reports shall be submitted no later than thirty (30) calendar days after the end of each calendar quarter and in accordance with Section C.20-General Reporting Requirements. The report submitted by the Permittee does require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

D.1.13 Continuous Emission Rate Monitoring [326 IAC 3-5]

When the Submerged Arc Furnaces off gas is routed to the Rotary Hearth Furnace and at all times when the Rotary Hearth Furnace is in operation, the Permittee shall comply with the following:

- (a) Pursuant to 326 IAC 3-5-1(d), the Permittee shall calibrate, certify, operate, and maintain a continuous emissions monitoring systems (CEMS) for measuring SO₂, CO, and NO_x emissions rates in pounds per hour from the rotary hearth furnace process baghouse Stack 40, in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.
 - (b) 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.
 - (c) In the event that a breakdown of the SO₂, CO, and/or NO_x continuous emission monitoring system (CEMS) occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
 - (d) Whenever the SO₂ CEMS is malfunctioning or will be down for calibration, maintenance, or repairs for a period of six (6) hours, the Permittee shall monitor the lime injection rate into the gas stream.
 - (e) Whenever the NO_x CEMS is malfunctioning or will be down for calibration, maintenance, or repairs for a period of six (6) hours, the Permittee shall monitor the ammonia injection rate into the Selective Non-Catalyst Reduction Unit.
 - (f) When ever the CO continuous emissions monitoring system is malfunctioning or down for maintenance or repair for a period of six (6) hours, the Permittee shall monitor the thermal oxidizer temperature, so it is maintained at the temperature achieved during the last compliant stack test.
 - (g) A calibrated backup SO₂, NO_x and/or CEMS shall be brought online no later than seventy-two (72) hours of shutdown of the primary CEMS, and shall be operated until such time as the primary CEMS is back in operation.
 - (h) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 326 IAC 2-2.
3. *Per the request of the Permittee, IDEM, OAQ has reevaluated the frequency of testing for the RHF fugitives' baghouse and briquetter baghouse. Based on IDEM's Guidance on Stack Test Frequency for Title V Operating Permits, the frequency of testing for the RHF fugitives baghouse and briquetter baghouse has been changed as follows:*

D.2.5 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

Within thirty (30) months from the date of the latest compliance demonstration stack test and in order to demonstrate compliance with Condition D.2.1, the Permittee shall perform PM/PM₁₀ testing on the RHF fugitives baghouse and briquetter baghouse Stack 77, utilizing methods as approved by the Commissioner. This test shall be repeated at least once ~~every two and one half (2½)~~ **five (5)** years from the date of the most recent valid compliance demonstration stack test. PM₁₀ includes filterable and condensable components. Testing shall be conducted in accordance with Section C.9 - Performance Testing.

Appeal Resolution Changes

- (1) *The Permittee appealed the description of the Rotary Hearth Furnace found in Condition A.3 and the facility description box for Section D.1. The description referenced "calcium sulfate (formed during reaction of lime and SO₂)."* The Permittee requests this be replaced with "lead" since calcium sulfate is not regulated by this permit and lead is. Additionally, the Permittee appealed the inclusion of the description of the use of (EAF) baghouse dust and other iron bearing feedstock as a supplemental feed material for the RHF in Condition A.3 and the facility description box for Section D.1 since this is a method of SO₂ control not an emission unit. The description of the Rotary Hearth furnace has been changed throughout the permit as follows:

Rotary Hearth Furnace (RHF)

- (a) One (1) rotary hearth furnace (RHF) constructed in 1998 and modified in 2001 with an addition of ten (10) natural gas-fired low-NO_x burners, having a total furnace nominal heat input of 376 MMBtu per hour. The RHF processes coal and iron ore to produce a nominal throughput of ninety-six (96) tons of direct reduced iron per hour. Emissions are controlled by an afterburner for CO and VOC, lime injection in the gas stream for SO₂, selective non-catalytic reduction for NO_x, and a baghouse for PM/PM₁₀ and **lead calcium sulfate** ~~(formed during reaction of lime and SO₂)~~. Emissions exhaust through Stack 40.
- ~~(b) Use of Electric Arc Furnace (EAF) baghouse dust and other iron bearing feedstock as a supplemental feed material for the RHF.~~
- (2) *The Permittee appealed the inclusion of a specific air flow rate for the baghouse in Condition D.1.1 because it does not affect the limits. IDEM agrees that since the limits are given in both gr/dscf and lb/hr, the air flow rate is not necessary. Therefore, Condition D.1.1 has been modified as follows:*

D.1.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology (BACT)[326 IAC 2-2-3]

Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from the rotary hearth furnace process baghouse shall not exceed ~~an air flow rate design of 310,000 dscfm (353,000 acfm) and 0.0052 grains per dscf~~ **and 13.4 lb/hr** through Stack 40. ~~The total emissions shall not exceed 13.4 pounds per hour.~~

- (3) *The Permittee appealed the reference to Condition D.1.17 and 326 IAC 5-1-4 in Condition D.1.2 because the references were unnecessary and inappropriate for emission limit conditions. Condition D.1.2 has been modified as follows:*

D.1.2 Opacity Limits - Best Available Control Technology [326 IAC 2-2-3]

- (a) Pursuant to SSM 033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (BACT), the visible emissions discharged into the atmosphere from the rotary hearth furnace process baghouse Stack 40 shall not exceed three percent (3%) opacity ~~in accordance with condition D.1.17~~, as determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A).
- (b) Pursuant to CP-033-8091-00043, issued June 25, 1997 and 326 IAC 2-2-3, the visible emissions from vents, Stacks and building roof monitors, unless otherwise specified, shall not exceed three (3%) percent opacity. Visible emissions shall be determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A) ~~pursuant to 326 IAC 5-1-4.~~
- (4) *The Permittee appealed Condition D.1.11(a) and the final paragraph of Condition D.1.11 as overly burdensome and requested clarification of the condition. The Permittee appealed Condition D.1.11(b) for its addition after the close of public notice. Condition D.1.11 is modified as agreed*

upon by IDEM and Steel Dynamics, Inc. - Iron Dynamics Division in the April 26, 2007 Joint Stipulation for Stay and in further discussion for clarification as follows:

D.1.11 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

- (a) **Not later than twelve (12) months from issuance of this Part 70 permit (T033-12614-00076), issued October 4, 2006,** Within thirty (30) months from the date of the latest compliance demonstration stack test and in order to demonstrate compliance with Condition D.1.1 - **Particulate Matter (PM/PM₁₀) - Best Available Control Technology** and D.1.4 - **Volatile Organic Compounds (VOC) - Best Available Control Technology**, the Permittee shall perform PM/PM₁₀, **lead**, and VOC testing on the RHF, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years. PM₁₀ includes filterable and condensable components.
- (b) ~~Within thirty (30) months from the date of the latest compliance demonstration stack test and in order to demonstrate compliance with Condition D.1.8, the Permittee shall analyze the EAF baghouse dust for the hazardous components. The Permittee shall calculate the hourly HAP emissions assuming 100% vaporization of the hazardous components identified previously for the Rotary Hearth Furnace process baghouse Stack 40, using the highest throughput rate in tons per hour of EAF baghouse dust achieved during this period. This mass balance computation shall be converted to annual emissions assuming 8760 hours of operation in a year, and used to establish that the single HAP emissions are less than 10 tons per year and the combination of HAPs emissions are less than 25 tons per year pursuant to 326 IAC 2-4.1-1. In the event that the HAP emissions exceed the threshold stated earlier, the Permittee shall inform the IDEM, OAQ about the same, and curtail the operation of the RHF in a manner, not to exceed the thresholds specified in this condition.~~

All testing ~~(except testing of the EAF baghouse dust, which shall be tested in accordance with SW-846 or other approved methods)~~ shall be conducted in accordance with Section C.9 - Performance Testing.

- (5) *The Permittee appealed Condition D.1.12 due to the reference to AA 033-17732-00076 which did not address this condition and for further clarification of referenced conditions. Condition D.1.12 has been modified as follows:*

D.1.12 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to SSM 033-15955-00076, issued on December 18, 2002, ~~A-033-17732-00076, issued September 17, 2003~~ and 326 IAC 2-2-3 (Control Technology Review: Requirements) and in order to comply with conditions D.1.1- **Particulate Matter (PM/PM₁₀) - Best Available Control Technology** and D.1.8 - **Lead Emissions - Best Available Control Technology**, the baghouse for PM/PM₁₀ control shall be in operation and control emissions from the rotary hearth furnace process baghouse Stack 40 at all times the rotary hearth furnace is in operation.

- (6) *The Permittee appealed the inclusion of Condition D.1.13 because the requirement to operate controls is already specified in Condition D.1.3. Condition D.1.13 has been removed as follows and the Table of Contents updated:*

D.1.13 Sulfur Dioxide (SO₂) - Best Available Control Technology [326 IAC 2-2-3]

~~Pursuant to SSM 033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (Control Technology Review: Requirements) and in order to comply with condition D.1.3, the lime injection or wet scrubber unit for sulfur dioxide control shall be in operation and/or use of EAF dust as supplemental feedstock in the RHF to control emissions from the rotary hearth furnace process baghouse Stack 40 at all times the rotary hearth furnace is in operation, except as provided in D.1.9(c)(2).~~

- (7) *The Permittee appealed the inclusion of Condition D.1.14 because the requirement to operate controls is already specified in Conditions D.1.4 and D.1.6. Condition D.1.14 has been removed as follows and the Table of Contents updated:*

~~D.1.14 Carbon Monoxide (CO) and Volatile Organic Compounds (VOC) - Best Available Control Technology [326 IAC 2-2-3]~~

~~Pursuant to GP-033-8091-00043, issued on June 25, 1997 and 326 IAC 2-2-3 (Control Technology Review: Requirements) and in order to comply with conditions, D1.4, and D.1.5, the afterburner for control of carbon monoxide and volatile organic compounds shall be in operation and control emissions from the rotary hearth furnace at all times the rotary hearth furnace is in operation except as provided in D.1.9(c)(2).~~

- (8) *The Permittee appealed the inclusion of Condition D.1.15 because the requirement to operate controls is already specified in Condition D.1.7. Condition D.1.15 has been removed as follows and the Table of Contents updated:*

~~D.1.15 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]~~

~~Pursuant to SSM-033-15955-00076, issued December 18, 2002 and 326 IAC 2-2-3 (Control Technology Review: Requirements) and in order to comply with condition D.1.7, except during periods of startup or shutdown, the selective non-catalytic reduction unit for NOx control shall be in operation and control emissions from the rotary hearth furnace process baghouse Stack 40 at all times the rotary hearth furnace is in operation.~~

Conclusion and Recommendation

The proposed modification shall be subject to the conditions of the attached proposed Part 70 PSD/Significant Source Modification No. 033-26976-00076 and Significant Permit Modification No. 033-27112-00076. The staff recommend to the Commissioner that this Part 70 PSD/Significant Source Modification and Significant Permit Modification be approved.

Appendix A

CONTROL TECHNOLOGY / PSD and 326 IAC 8-1-6 BACT ANALYSIS

Steel Dynamics, Inc. - Iron Dynamics Division

Source Background and Description

Source Location: 4500 County Road 59, Butler, Indiana 46721
County: DeKalb
SIC Code: 3312
Part 70 Operating Permit No.: T033-12614-00076
SSM/PSD No.: 033-26976-00076
Significant Permit Modification No.: 033-27112-00076
Permit Reviewer: Kristen Layton

Steel Dynamics, Inc. - Iron Dynamics Division (SDI - IDD) submitted a permit application requesting the following modifications to 326 IAC 2-2 and 326 IAC 8-1-6 limits for the Submerged Arc Furnace (SAF):

- (1) Change the nominal throughput for the SAF from 106 tph input to 55 tph output. The original throughput was based on the future addition of a second rotary hearth furnace (the source does not now intend to construct) and engineering estimates. The source believes this value to be inaccurate based on measured output from the SAF. The charge entering the SAF comes from the rotary hearth furnace (RHF) and is very hot. Consequently, the input to the SAF is very difficult to measure and the source has requested using the nominal output instead.
- (2) Correct the 326 IAC 2-2 SO₂ limit to show that the emission factor of 0.084 lb/ton times a throughput of 106 lb/hr gives a limit of 8.9 lb/hr not 1.6 lb/hr. Additionally, the source would like to modify the limit based on information from a 2006 and a 2007 stack test.
- (3) Based on information gathered during stack tests in 2006 and 2007, a 326 IAC 8-1-6 BACT analysis has been performed for VOC. Additionally, the 326 IAC 2-2 VOC minor limit has been changed. As part of this modification, the 326 IAC 2-2 VOC minor limit for the Ladle Metallurgical Stations (LMS) must also be modified to ensure the project permitted under Construction Permit No. 033-9187-00043 stays minor under 326 IAC 2-2 for VOC.
- (4) Modify the 326 IAC 2-2 CO limit based on information gathered during a 2006 stack test.
- (5) The addition of the alternative operating scenario of routing the SAF exhaust after it has passed through the wet scrubber to the Rotary Hearth Furnace (RHF) for a supplemental fuel source.

The proposed modification is subject to PSD review for SO₂ and CO, because it requires a revision of BACT requirements. Therefore, PSD BACT analysis is required, under 326 IAC 2-2-3(2), (PSD Rule: Control Technology Review Requirements) for all these pollutants.

The proposed modification is subject to 326 IAC 8-1-6 review for VOC, because VOC is emitted at greater than twenty-five (25) tons per year. Therefore, BACT analysis is required, under 326 IAC 8-1-6, (New Facilities General Reduction Requirements) for VOC.

The BACT analysis submitted by Steel Dynamics, Inc., which has been reviewed and analyzed by IDEM, OAQ is based on the draft "Top-Down approach: BACT Guidance" published by USEPA, Office of Air Quality Planning Standards, March 15, 1990. The BACT analysis has been based on the following sources of information which have been reviewed or contacted:

- (a) Downloadable USEPA RACT/BACT/LAER Clearinghouse (RBLC) System;
- (b) USEPA/State/Local Air Quality Permits;
- (c) Federal/State/Local Permit Engineers;
- (d) Control Technology Vendors; and
- (e) Inspection/Performance Test Reports.
- (f) OAQPS Control Cost Manual.

BACT Definition and Applicability

Federal guidance on BACT requires an evaluation that follows a "top down" process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by the regulation or the permit, or the controls achieved in practice. The highest level of the control is then evaluated for technical feasibility.

The five basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially "available" control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies and controls applied to similar source categories.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering and source-specific factors related to safe and successful use of the controls.

Step 3: Rank The Remaining Control Technologies By Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate The Most Effective Controls And Document The Results

The fourth step entails an evaluation of energy, environmental and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and

National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

Justification for Not Comparing the SAF to Electric Arc Furnaces as Part of this BACT Evaluation

The Permittee has provided the following information as to why this unit should not be compared to Electric Arc Furnaces (EAF) as part of this evaluation:

"At first glance, a Submerged Arc Furnace ("SAF") may seem comparable to an Electric Arc Furnace ("EAF") that would be employed at a steel mini-mill. However, the two systems are fundamentally different in their inputs, modes of operation, outputs, and the nature of their emissions. In fact, the New Source Performance Standard ("NSPS") that applies to EAFs specifically makes the distinction between EAFs and other units such as SAFs:

Electric arc furnace (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. For the purposes of this subpart, an EAF shall consist of the furnace shell and roof and the transformer. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.

40 CFR 60.271a. IDEM correctly has never tried to apply the Subpart AAa NSPS to the SAF. This definition demonstrates that an EAF and a SAF are fundamentally different.

The charging of the direct-reduced iron pellets is the first primary difference between the two systems. Whereas the EAF is fed pre-processed steel scrap with relatively predictable compositions per batch, the direct-reduced iron pellets that are the primary feedstock to the SAF are derived from the combination of various naturally-occurring materials and the byproducts of processes beyond the control of SDI. As the nature of these materials is variable, the process chemistry needed to accommodate them is also variable. Thus, constant adjustment of the process chemistry is needed as each batch of liquid pig iron is produced.

In addition to the differences in process feed stocks, the SAF is significantly different from an EAF in terms of operating principles and methodologies. An EAF employs a high potential (voltage) between its removable, pre-cast electrodes in order to produce an exposed arc. The heat from this arc provides the energy required to melt the cold-charged scrap steel. For the SAF, the term "submerged arc" furnace is actually a misnomer, as during normal operation there is not an exposed electric arc present in the furnace. Instead, the resistance of the carbon component in the molten iron and the resistance of slag provide the heat necessary to melt the pre-heated feed stock materials. The electrodes in the SAF, which are actually produced *in situ* by using the furnace's own heat to "bake" a carbon-rich electrode paste, serve another significant role in the process. Apart from providing heat to melt the charge, as in an EAF, the electrodes in the SAF also provide the energy required to reduce the iron in the furnace to its metallic state. As the remaining iron oxide in the feedstock is reduced, the previously-bonded oxygen atoms are driven off in the form of carbon monoxide. This reduction reaction is integral to the iron production process and is responsible for the CO-rich nature of the SAF's emissions.

As the operations are different, so too are the final products: an EAF produces molten steel, while the SAF produces liquid pig iron, which is an input to an EAF.

Finally, in terms of emissions control, the two furnaces differ greatly as well. EAFs employ removable electrodes and a swinging roof, whereas SAFs utilize a largely sealed furnace, required for both efficient emissions/thermal control and employee safety."

Based on the above information, IDEM agrees the SAF is not comparable to EAFs. Therefore, EAFs will not be looked at as part of this evaluation.

BACT for Sulfur Dioxide (SO₂):

The proposed modification requires reopening the BACT determination for the Submerged Arc Furnace (SAF) for SO₂ which was made in Construction Permit No. 033-9187-00043, issued on March 24, 1998.

SAF

The SAF is used to smelt direct reduced iron (DRI) into liquid hot metal. There is a trace quantity of sulfur in direct reduced iron (DRI). Due to the high temperature of the molten liquid steel in the SAF, some sulfur will be oxidized and released as SO₂.

The Permittee is requesting a change in the SO₂ limit. The existing lb/hr limit in the permit was incorrect - 0.084 lb/ton X 106 ton/hr = 8.904 lb/hr not 1.6 lb/hr.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control SO₂ emissions from the SAF:

- (a) Flue Gas Desulfurization (FGD) options:
 - (1) Wet Scrubbing
 - (2) Spray Dryer Absorption (SDA)
 - (4) Dry Sorbent Injection (DSI)
 - (3) Wet Electrostatic Precipitator (WESP)

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing SO₂ emissions from the SAF. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

- (a) Flue Gas Desulfurization - FGD systems currently in use for SO₂ abatement can be classified as wet and dry systems. The RACT/BACT/LAER Clearinghouse contains no entries for a submerged arc furnace. However, FGD options which have been traditionally applied to utility boilers may be available to control SO₂ from the SAF. Therefore, the application of these technologies to the existing SAF will be examined further.
 - (1) Wet Scrubbing -- Wet scrubbers are regenerative processes which are designed to maximize contact between the exhaust gas and an absorbing liquid. The exhaust gas is scrubbed with a 5 - 15 percent slurry, comprised of lime (CaO) or limestone (CaCO₃) in suspension. The SO₂ in the exhaust gas reacts with the CaO or CaCO₃ to form calcium sulfite (CaSO₃·2H₂O) and calcium sulfate (CaSO₄). The scrubbing liquor is continuously recycled to the scrubbing tower after fresh lime or limestone has been added.

The types of scrubbers which can adequately disperse the scrubbing liquid include packed towers, plate or tray towers, spray chambers, and venturi scrubbers. In addition to calcium sulfite/sulfate, numerous other absorbents are available including sodium solutions and ammonia-based solutions.

The source currently has a venturi scrubber required under 326 IAC 2-2 for particulate control. The venturi scrubber also serves to cool the CO laden gas stream to below the auto ignite temperature for CO. The venturi scrubber water is

caustic due to the alkaline nature of the various feedstock materials and additives. Therefore, no additional caustic needs to be added to the scrubber.

- (2) Spray Dryer Absorption (SDA) -- An alternative to wet scrubbing is a process known as dry scrubbing, or spray-dryer absorption (SDA). As in wet scrubbing, the gas-phase SO₂ is removed by intimate contact with a suitable absorbing solution. Typically, this may be a solution of sodium carbonate (Na₂CO₃) or slaked lime [Ca(OH)₂]. In SDA systems the solution is pumped to rotary atomizers, which create a spray of very fine droplets. The droplets mix with the incoming SO₂-laden exhaust gas in a very large chamber and subsequent absorption leads to the formation of sulfites and sulfates within the droplets. Almost simultaneously, the sensible heat of the exhaust gas which enters the chamber evaporates the water in the droplets, forming a dry powder before the gas leaves the spray dryer. The temperature of the desulfurized gas stream leaving the spray dryer is now approximately 30 - 50 °F above its dew point.

The exhaust gas from the SDA system contains a particulate mixture which includes reacted products. Typically, baghouses employing teflon-coated fiberglass bags (to minimize bag corrosion) are utilized to collect the precipitated particulates.

The SDA process would have to be located downstream of the wet scrubber since the wet scrubber is used to cool the exhaust gas to below the auto ignite temperature for CO. Stack tests conducted in 2006 and 2007 show the concentration of SO₂ exhausting from the SAF stack number 58 to be 1 ppmv. Since the afterburner does not provide any control efficiency for SO₂, it can be assumed the SO₂ emissions from the venturi scrubber are 1 ppmv. Currently, the volumetric exhaust gas flow rate from the SAF is approximately 300,000 dscfm. When coupled with the relatively low SO₂ emissions from the wet scrubber, a relatively small SO₂ concentration of around 1 ppmv is in the exhaust. Based on discussions with a major SDA vendor (Wheelabrator Air Pollution Control Inc.), this control alternative has significant limitations for effective technical applicability for an SAF application:

- (i) The very low SO₂ concentration of around 1 ppmv in the influent coupled with a relatively large gas flow of 300,000 dscfm would retard the adequate contact interface with the reagent. The vendor noted that the inlet SO₂ concentrations would be lower than the outlet concentrations that most SDAs are designed for;
- (ii) The variations in the SO₂ concentration during and between heats would severely impair the control system's capability to respond adequately. SDA systems are not designed for adept load-follow flexibility;
- (iii) The low temperature of the exhaust gas from the venturi scrubber of between 80 - 110 °F would not allow sufficient thermal gradient for an appropriate approach to saturation which typically specifies that the temperature of the desulfurized gas stream leaving the spray dryer be around 30 - 50 °F above its dew point; and
- (v) Unable to provide credible and sustained SO₂ removal guarantees due to above reasons.

Thus, SDA dry scrubbing option is considered technically infeasible for this application and will be not be considered any further in this BACT analysis.

- (3) Dry Sorbent Injection (DSI) -- This control option typically involves the injection of dry powders into either the furnace or post-furnace region of utility-sized boilers. This process was developed as a lower cost option to conventional FGD technology. Since the sorbent is injected directly into the exhaust gas stream, the mixing offered by the dry scrubber tower is not realized. The maximum efficiency realized for this SO₂ control technology is estimated to be fairly nominal. It is felt that if sufficient amounts of reactants are introduced into the flue gas, there is a possibility of some degree of mixing and reaction. The science is inexact and the coupling of reactant dosage and in-flue mixing which impacts the SO₂ control efficiency is susceptible to variability in SO₂ concentrations.

The DSI process would have to be located downstream of the wet scrubber since the wet scrubber is used to cool the exhaust gas to below the auto ignite temperature for CO. Stack tests conducted in 2006 and 2007 show the concentration of SO₂ exhausting from the SAF stack number 58 to be 1 ppmv. Since the afterburner does not provide any control efficiency for SO₂, it can be assumed the SO₂ emissions from the venturi scrubber are 1 ppmv. Currently, the volumetric exhaust gas flow rate from the SAF is approximately 300,000 dscfm. When coupled with the relatively low SO₂ emissions from the venturi scrubber, a relatively small SO₂ concentration of 1 ppmv is in the exhaust. The SO₂ concentration will also vary widely over the SAF cycle. The injection dose of sorbent materials would be hard to control in order to match variability in SO₂ concentrations. Similar control systems are fraught with chronic operational problems with the sensors requiring frequent maintenance and calibration.

Based on discussions with a major scrubbing vendor (Wheelabrator Air Pollution Control Inc.), this control alternative has significant limitations for effective technical applicability for an SAF application which were discussed earlier in the context of a dry scrubbing (SDA) system:

- (i) The very low SO₂ concentration of around 1 ppmv in the influent coupled with a relatively large gas flow of 300,000 dscfm would retard the adequate contact interface with the reagent. The vendor noted that the inlet SO₂ concentrations would be lower than the outlet concentrations that most DSIs are designed for;
- (ii) The variations in the SO₂ concentration during and between heats would severely impair the control system's capability to respond adequately. DSI systems are not designed for adept load-follow flexibility and variable reactant dose control with fast response times comparable to anticipated process conditions;
- (iii) Due to the anomalies of mixing afforded by the process, the reaction kinetics are not very flexible and rather time-dependent. Unlike the SDA system, the mixing uncertainty can potentially reduce DSI technology to a sheer brute-force proposition resulting in unstable and unpredictable performance;
- (iv) In a DSI-fabric filter coupled system configuration, where most of the reaction takes place on the filter cake on the bags, the vendor felt that adequate residence time simply would not be available since the attendant higher particulate load would necessitate a higher cleaning frequency of the fabric filter; and
- (v) Unable to provide credible and sustained SO₂ removal guarantees due to above reasons.

Thus, DSI dry scrubbing option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

- (4) Wet Electrostatic Precipitator (WESP) -- An electrostatic precipitator (ESP) uses nonuniform, high-voltage fields to apply large electrical charges to particles moving through the field. The charged particles move toward an oppositely charged collection surface, where they accumulate. A wet ESP uses a water spray to remove particulate matter from the ESP collection plates. For SO₂ removal, caustic is added to the water spray system allowing the spray system to function as an SO₂ absorber.

The WESP would have to be located downstream of the wet scrubber since the wet scrubber is used to cool the exhaust gas to below the auto ignite temperature for CO. Stack tests conducted in 2006 and 2007 show the concentration of SO₂ exhausting from the SAF stack number 58 to be 1 ppmv. Since the afterburner does not provide any control efficiency for SO₂, it can be assumed the SO₂ emissions from the venturi scrubber are 1 ppmv. Currently, the volumetric exhaust gas flow rate from the SAF is approximately 300,000 dscfm. When coupled with the relatively low SO₂ emissions from the venturi scrubber, a relatively small SO₂ concentration of 1 ppmv is in the exhaust. The SO₂ concentration will also vary widely over the SAF cycle.

Wet electrostatic precipitators are subject to fouling due to the iron particles in the gas stream. These iron particles tend to stick to the collection plates. This greatly reduces the collector's effectiveness. It can also lead to safety issues due to electrical conductivity problems. Additionally, according to the EPA's CICA fact sheet on wet electrostatic precipitators, WESPs in general are not suited for use in processes which are highly variable because they are very sensitive to fluctuations in gas stream conditions (flow rates, temperatures, particulate and gas composition, and particulate loadings). Thus, the WESP option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

All control alternatives identified in Step 2 were eliminated as not technically feasible in controlling SO₂ emissions from the SAF, with the exception of the wet scrubber.

Step 4 – Evaluate the Most Effective Controls and Document Results

A wet scrubber was the only technically feasible control option for controlling SO₂ emissions from the SAF.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, did not identify any other SAFs. To the Permittee and IDEM's knowledge, there is only one other SAF in the country that operates in a manner similar to SDI - IDD. That unit is located at Inmetco in Ellwood City, Pennsylvania. Both facilities use a rotary hearth furnace to produce direct reduced iron which is then further smelted in the SAF. However, the unit at Inmetco has a smaller throughput of ten (10) tons per hour and does not have a SO₂ limit in its permit. Therefore, the Inmetco unit is not comparable to SDI - IDD's unit.

SDI-IDD proposed a BACT limit of 2.83 lb/hr for SO₂. This proposed limit is based on stack test data gathered in 2007 and a reasonable safety factor of 25%. IDEM believes this safety factor is

reasonable based on the variability of the operation and the test data provided. In addition, the EAB determined 25% was acceptable in the case of *Knauf Fiber Glass, GmbH* (PSD Appeal Nos. 99-8 to -72 (EAB, March 14, 2000) 9 E.A.D. 1, 15). However, given that another stack test was done on the SAF in 2006, IDEM believes it is more appropriate to use both sets of test data (shown in the table below) to develop the new SO₂ BACT limit for the SAF.

SO ₂ Test Data		
	lb/hr	lb/ton
2006		
Run 1	9.68	0.21
Run 2	0.00	0.00
Run 3	0.00	0.00
2007		
Run 1	0.00	0.00
Run 2	3.56	0.0617
Run 3	3.22	0.056

Since there are no other SAFs at steel mills, the BACT limit for this unit will be based on stack test data gathered in 2006 and 2007 and a 25% safety factor. The following is the SO₂ BACT for the SAF:

- (a) The emissions from the SAF shall be controlled by a wet venturi scrubber.
- (b) The SO₂ emissions from the submerged arc furnace Stack 58 shall not exceed 0.0683 pounds per ton and 3.76 pounds of SO₂ per hour.

The table below summarizes the SO₂ BACT limits proposed by SDI-IDD and IDEM.

Proposed SO ₂ BACT Limits		
	(lb/ton)	(lb/hr)
SDI-IDD	none proposed	2.83
IDEM OAQ	0.0683	3.76

BACT for Carbon Monoxide (CO):

The proposed modification requires reopening the BACT determination for the Submerged Arc Furnace (SAF) for CO which was made in Construction Permit No. 033-9187-00043, issued on March 24, 1998.

SAF

CO emissions from the SAF have been determined through stack tests to be higher than the current limits which were based on engineering estimates.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control CO emissions from the SAF:

- (a) Flaring of CO Emissions;
- (b) CO Oxidation Catalysts;
- (c) Post-Combustion Reaction Chamber;
- (d) Catalytic Incineration;
- (e) Afterburner

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing CO emissions from the existing SAFs. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative. For safety purposes, the exhaust from the SAF must be cooled below the auto ignite temperature for CO. A wet scrubber and water cooled ducts accomplish this.

- (a) Flaring of CO Emissions -- Based upon a review of the previously listed information resources, there is no known application of flaring SAF exhaust gases. Flaring of emissions for CO destruction would require raising the exhaust gas temperature to 1,128 °F at a residence time of 0.5 second. The exhaust gas stream, exiting the scrubber at approximately 300,000 dcfm will be between 80 - 110 °F. Thus, based on the relatively large gas volumetric flow at a substantial temperature differential, the auxiliary fuel requirements needed to operate the flare would be overwhelmingly large. Additionally, it is not clear whether the flare would actually result in a decrease of CO emissions or an increase from supplemental fuel combustion, which would result in an increase of NO_x emissions. Consequently, this control alternative is considered technically infeasible for SAF exhausts and thus, will not be considered any further in this BACT analysis.
- (b) CO Oxidation Catalysts -- Based upon a review of the previously listed information resources, there is no known application of CO oxidation catalysts to control CO emissions from the SAF. The optimal working temperature range for CO oxidation catalysts is approximately 850 °F - 1,100 °F with a minimum exhaust gas stream temperature of 500 °F for minimally acceptable CO control. Exhaust gases from the SAF will undergo rapid cooling as they are ducted from the furnace and pass through the scrubber. Thus, the temperature will be far below the minimum 500 °F threshold for effective operation of CO oxidation catalysts. Additionally, the moisture laden exhaust gas stream from the scrubber is anticipated to be too high for efficient operation of a CO oxidation catalyst. Masking effects such as plugging and coating of the catalyst surface would almost certainly result in impractical maintenance requirements, and would significantly degrade the performance of the catalyst. Consequently, this control alternative is considered technically infeasible for this application and will not be considered any further in this BACT analysis.
- (c) Post-Combustion Reaction Chambers -- Based upon a review of the previously listed information resources, there is no known successful application of duct burners or thermal incinerators to control CO emissions from an SAF.

The principle of destruction within post combustion chambers is to raise the SAF exhaust gases to a sufficiently high temperature and for a minimum amount of time to facilitate oxidation. The combustion chamber configuration must provide effective mixing within the chamber with an acceptable residence time. Recuperative heat exchangers can be used with these systems to recover a portion of the exiting exhaust gas heat and reduce the auxiliary fuel consumption.

The amount of CO which could be oxidized with post combustion systems is uncertain, and precise performance guarantees are expected to be difficult to obtain from equipment manufacturers because of the lack of operating experience. In addition, there is the potential for additional emissions of NO_x from auxiliary fuel combustion. Further, due to the heat and particulate loading, the burners would have a short life expectancy, and may sustain severe maintenance and reliability problems.

Potentially, there are two locations where post combustion chambers can be installed, i.e., upstream or downstream of an SAF wet scrubber. Locating upstream of the scrubber would take advantage of elevated temperatures in the exhaust gas stream. However, at this location, the post combustion chamber would be subject to high particulate loading and

this would pose a safety risk since the exhaust gases from the SAF have a high CO content and are at temperatures above the auto ignite temperature for CO. The wet scrubber is a necessary first step in order to cool the CO laden exhaust to a safe temperature. Thus, the installation of the post combustion chamber upstream of the wet scrubber is considered technically infeasible. Alternatively, the post combustion chamber could be installed downstream of the wet scrubber. However, even at this location, fouling due to the particulate in the moisture laden gas stream and more importantly, cooler exhaust temperatures would be encountered. These cooler temperatures would greatly increase the auxiliary fuel requirements. Further, the combustion of additional fuel will result in increases in emissions to the atmosphere.

Based upon the above discussions, the use of a post combustion chamber is considered technically infeasible for the existing SAF and will not be considered any further in this BACT analysis.

- (d) Catalytic Incineration -- Based upon a review of the previously listed information resources, there is no known application of catalytic incineration to control CO emissions from SAFs. Catalytic incinerators use a bed of catalyst that facilitates the overall combustion of combustible gases. The catalyst increases the reaction rate and allows the conversion of CO to CO₂ at lower temperatures than a thermal incinerator. The catalyst is typically a porous noble metal material which is supported in individual compartments within the unit. An auxiliary fuel-fired burner ahead of the bed heats the entering exhaust gases to 500 °F – 600 °F to maintain proper bed temperature. Recuperative heat exchangers are used to recover the exiting exhaust gas heat and reduce the auxiliary fuel consumption. Secondary energy recovery is typically 70 percent.

Catalytic incineration systems are limited in application due to potential poisoning, deactivation, and/or blinding of the catalyst. Lead, arsenic, vanadium, and phosphorus are generally considered poisons to catalysts and deactivate the available reaction sites on the catalyst surface. Particulate can also build up on the catalyst, effectively blocking the porous catalyst matrix and rendering the catalyst inactive. In cases of significant levels of poisoning compounds and particulate loading, catalyst replacement costs are significant.

As in the thermal incineration discussion, potentially, there are two locations where the incinerator can be installed, i.e., upstream or downstream of the SAF wet scrubber. For the same reasons discussed earlier (e.g., fouling due to particulate matter and safety), the upstream location is considered technically infeasible. Alternatively, the incinerator can be installed downstream of the wet scrubber. However, even at this location, fouling due to particulate in the moisture laden gas stream can occur, and further, the exhaust will be at a lower temperature. These cooler temperatures would greatly increase the auxiliary fuel requirements. Further, the combustion of additional fuel will result in increases in emissions to the atmosphere.

Due to the lack of application of catalytic incineration in the steel industry and potentially adverse technology applicability issues, this control alternative is considered technically infeasible and will not be considered any further in this BACT analysis.

- (e) Afterburner - Afterburners are air pollution abatement devices that remove undesirable organic gases through incineration. The Permittee currently uses an afterburner to control CO from the SAF. The afterburner has a pilot light that the gas stream passes over. A small amount of auxiliary fuel is needed to keep the pilot light lit. The high CO content of the gas stream causes the gas stream to ignite as it passes over the pilot light. The afterburner was tested on January 30, 2007. During that test, the temperature at the afterburner was in the range of 1,273.2 - 1,304 °F.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

All control alternatives identified in Step 2 were eliminated as not technically feasible in controlling CO emissions from the SAF, with the exception of the afterburner.

Step 4 – Evaluate the Most Effective Controls and Document Results

An afterburner was the only technically feasible control option for controlling CO emissions from the SAF.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states' agencies, did not identify any other SAFs. To the Permittee and IDEM's knowledge, there is only one other SAF in the country that operates in a manner similar to SDI - IDD. That unit is located at Inmetco in Ellwood City, Pennsylvania. Both facilities use a rotary hearth furnace to produce direct reduced iron which is then further smelted in the SAF. However, the unit at Inmetco has a smaller throughput of ten (10) tons per hour and does not have a CO limit in its permit. Therefore, the Inmetco unit is not comparable to SDI - IDD's unit.

SDI-IDD proposed a BACT limit of 167 lb/hr for CO. This proposed limit is based on the current limit and a reasonable safety factor of 25%. IDEM believes this safety factor is reasonable based on the variability of the operation and the test data provided. In addition, the EAB determined 25% was acceptable in the case of *Knauf Fiber Glass, GmbH* (PSD Appeal Nos. 99-8 to -72 (EAB, March 14, 2000) 9 E.A.D. 1, 15). However, given that two stack tests have been done on the SAF for CO, one in 2006 and one in 2007, IDEM believes it is more appropriate to develop the new CO BACT limit for the SAF using this test data (shown in the table below) than adding a safety factor to the existing limit.

CO Test Data		
	lb/hr	lb/ton
2006		
Run 1	44.158	0.956
Run 2	493.798	11.1
Run 3	30.502	0.669
2007		
Run 1	16.580	0.339
Run 2	19.265	0.334
Run 3	16.327	0.284

Since there are no other SAFs at steel mills, the BACT limit for this unit will be based on stack test data gathered in 2006 and 2007 and a 25% safety factor. The following is the CO BACT for the SAF:

- (a) The CO emissions from the SAF shall be controlled by an afterburner at the SAF or the RHF.
- (b) The carbon monoxide emissions from the submerged arc furnace Stack 58 shall not exceed 2.85 pounds per ton and 157.75 pounds of CO per hour.

The table below summarizes the CO BACT limits proposed by SDI-IDD and IDEM.

Proposed CO BACT Limits		
	(lb/ton)	(lb/hr)
SDI-IDD	none proposed	167
IDEM OAQ	2.85	157.75

BACT for Volatile Organic Compound (VOC)

Based on stack tests conducted in 2006 and 2007, the Submerged Arc Furnace (SAF) is unable to stay below 25 tons per year of VOC emissions. The proposed modification requires modifying the limits for the SAF for VOC which was made in Construction Permit No. 033-9187-00043, issued on March 24, 1998. The new proposed limit will make the VOC emissions from the SAF greater than 25 tons per year. Therefore, the SAF is now subject to 326 IAC 8-1-6 (BACT).

SAF

VOC emissions from the SAF have been determined through stack tests to be higher than the current limits which were based on engineering estimates.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control VOC emissions from the SAF:

- (a) Catalytic Oxidation;
- (b) Thermal Oxidation (Regenerative Thermal Oxidizers and Flares); and
- (c) Thermal Oxidation (Afterburner).

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing VOC emissions from the existing SAF. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

- (a) Catalytic Oxidation - In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

Based upon a review of the previously listed information resources, there is no known application of oxidation catalysts to control VOC emissions from an SAF. The optimal working temperature range for VOC oxidation catalysts is approximately 850 °F - 1,100 °F with a minimum exhaust gas stream temperature of 500 °F for minimally acceptable VOC control. Exhaust gases from the SAF will undergo rapid cooling as they must first go through the wet scrubber. For the safety of plant personnel and equipment, the wet scrubber is a necessary first step in order to cool the CO laden exhaust to a safe temperature. Thus, the temperature will be far below the minimum 500 °F threshold for effective operation of the oxidation catalyst system. Masking effects resulting from the

oxidation catalyst due to the moisture content in the gas stream (since the system would be located downstream from the scrubber) such as plugging and coating of the catalyst surface would result in impractical maintenance requirements, and would significantly degrade the performance of the catalyst. Consequently, this control alternative is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

- (b) Thermal Oxidation (Regenerative Thermal Oxidizers and Flares) - An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer. The post combustion chamber can be installed downstream of the SAF scrubber. However, even at this location, fouling due to particulate matter will occur. In addition there are no known applications of this control option in the steel mill industry. This control option is not technically feasible and will be eliminated from further consideration in this BACT analysis.
- (c) Thermal Oxidation (Afterburner) - Afterburners are air pollution abatement devices that remove undesirable organic gases through incineration. Afterburners are routinely employed to destroy VOC in industrial settings, and typically these systems run at a temperature between 1,200 and 2,000 °F. The Permittee currently uses an afterburner to control CO from the SAF. The afterburner has a pilot light that the gas stream passes over. A small amount of auxiliary fuel is needed to keep the pilot light lit. The high CO content of the gas stream causes the gas stream to ignite as it passes over the pilot light at a temperature sufficient for VOC destruction. The afterburner was tested on January 30, 2007. During that test, the temperature at the afterburner was in the range of 1,273.2 - 1,304 °F.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

All control alternatives identified in Step 2 were eliminated as not technically feasible in controlling VOC emissions from the SAF, with the exception of the afterburner.

Step 4 – Evaluate the Most Effective Controls and Document Results

An afterburner was the only technically feasible control option for controlling VOC emissions from the SAF.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, did not identify any other SAFs. To the Permittee and IDEM's knowledge, there is only one other SAF in the country that operates in a manner similar to SDI - IDD. That unit is located at Inmetco in Ellwood City, Pennsylvania. Both facilities use a rotary hearth furnace to produce direct reduced iron which is then further smelted in the SAF. However, the unit at Inmetco has a smaller throughput of ten (10) tons per hour and does not have a VOC limit in its permit. Therefore, the Inmetco unit is not comparable to SDI - IDD's unit.

SDI-IDD proposed a BACT limit of 6.44 lb/hr for VOC. This proposed limit is based on the highest hourly emission rate from stack test data gathered in 2006 and 2007 and a reasonable safety factor of 25%. IDEM believes this safety factor is reasonable based on the variability of the operation and the test data provided. In addition, the EAB determined 25% was acceptable in the case of *Knauf*

Fiber Glass, GmbH (PSD Appeal Nos. 99-8 to -72 (EAB, March 14, 2000) 9 E.A.D. 1, 15). However, IDEM believes it is more appropriate to develop the new VOC BACT limit using all of the test data (shown in the table below) from the 2006 and 2007 stack tests not just the highest hourly emission rate.

VOC Test Data		
	lb/hr	lb/ton
2006		
Run 1	10.757	0.233
Run 2	2.972	0.067
Run 3	3.881	0.085
2007		
Run 1	0.84	0.017
Run 2	3.26	0.057
Run 3	2.99	0.052

Since there are no other SAFs at steel mills, the BACT limit for this unit will be based on stack test data gathered in 2006 and 2007 and a 25% safety factor. The following is the VOC BACT for the SAF:

- (a) The VOC emissions from the SAF shall be controlled by an afterburner at the SAF or the RHF.
- (b) The volatile organic compound emissions from the submerged arc furnace Stack 58 shall not exceed 0.106 pounds per ton and 5.83 pounds of VOC per hour.

The table below summarizes the VOC BACT limits proposed by SDI-IDD and IDEM.

Proposed VOC BACT Limits		
	(lb/ton)	(lb/hr)
SDI-IDD	none proposed	6.44
IDEM OAQ	0.106	5.83

Air Quality Analysis - Appendix B

Steel Dynamics, Incorporated (SDI)

Butler, Indiana (DeKalb County)

Tracking and Plant ID: 033-26976-00076

Proposed Project

Steel Dynamics, Inc. (SDI) has submitted a request for a significant source modification of their facility with an increase in the Carbon Monoxide (CO) emissions. SDI is proposing new limits for the submerged arc furnace at their Butler location.

The Modeling Section in the Office of Air Quality (QAQ) received the final permit application in December 2008. This technical support document provides the air quality analysis review of the permit application.

Analysis Summary

Based on the potential emissions after controls, a PSD air quality analysis was triggered for CO. An additional impact analysis was conducted and showed no significant impact. Based on the modeling results, the proposed modification will not have a significant impact upon federal air quality standards.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

- A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.
- B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid utilized for the analyses.
- C. Determine the significant impact level, the area impacted by the source's emissions and background air quality levels
- D. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park.
- E. Summarize the Air Quality Analysis

Section A - Pollutants Analyzed for Air Quality Impact

Applicability

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Regulations (CFR) 52.21(b) (23) (i).

Proposed Project Emissions

CO is the pollutant that will be increased from the revision of SDI's emission limits. An air quality analysis is required for this pollutant because potential emissions after controls exceed the significant emission rate as shown in Table 1:

TABLE 1
Significant Emission Rates for PSD

POLLUTANT	POTENTIAL EMISSION RATE (Source Totals)	SIGNIFICANT EMISSION RATE	PRELIMINARY AQ ANALYSIS REQUIRED
	(tons/year)	(tons/year)	
CO	144.8	100	Yes
VOC	12.0	40	No
NOx	0	40	No
SO2	5.4	40	No
PM ₁₀	0	15	No

Note - This table reflects the limits as proposed by the source. The BACT limits proposed in the permit for CO and VOC and lower than those reflected in this table. The increase in the BACT limit proposed for SO₂ is 7.6, which is higher than in this table, but still lower than the 40 tpy significant emission rate increase that would require a modeling analysis.

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid

Stack Height Compliance with Good Engineering Practice (GEP)

Applicability

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur. Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which would affect the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$H_g = H + 1.5L$$

Where: H_g is the GEP stack height
 H is the structure height
 L is the structure's lesser dimension (height or width)

Existing Stack

Since the existing stack height of the unit for which the modification is proposed is below GEP stack height, the effect of aerodynamic downwash will be accounted for in the air quality analysis for the project.

Model Description

AERMOD (Version 07026) was used to determine maximum off-property concentrations or impacts for CO. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Regulations Part 51, Appendix W "Guideline on Air Quality Models".

The Auer Land Use Classification Scheme was used to determine the land use in the area. The area is considered primarily rural; therefore, a rural classification was used.

Meteorological Data

The meteorological data used in the AERMOD model consisted of 1988 through 1992 surface data from the Fort Wayne Airport Weather Service station merged with the mixing heights from Dayton, Ohio Airport National Weather Service station. The meteorological data was obtained through the National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC) and preprocessed into AERMOD ready format using U.S.EPA's AERMET.

Receptor Grid

The receptor grid extended approximately 7 kilometers from the plant. Fence line receptors were closely spaced (100 meters) near the plant boundary to identify the influence of aerodynamic building downwash.

Treatment of Terrain

Receptor terrain elevation inputs were interpolated from DEM (Digital Elevation Model) data obtained from the USGS. DEM terrain data was preprocessed using AERMAP.

Section C - Significant Impact Level/Area (SIA) and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source exceeded the PSD significant impact levels (concentrations). If the source's concentrations exceed these levels, further air quality analysis is required. Significant impact levels are defined by the following time periods in Table 2 below with all maximum-modeled concentrations from the worst case operating scenarios. Modeling

results for CO did not exceed significant impact levels, so no further modeling was required. An insignificant impact within an attainment area will not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for CO.

TABLE 2
Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (ug/m ³)	SIGNIFICANT IMPACT LEVEL (ug/m ³)	MONITORING THRESHOLD (ug/m ³)	MONITORING DE MINIMUS EXCEEDED	REFINED AQ ANALYSIS REQUIRED
CO	8-Hour	23.6	500	575	No	No
CO	1-Hour	41.6	2,000	-	-	No

Part D – Qualitative Analysis

Additional Impact Analysis

All PSD permit applicants must prepare additional impact analyses for each pollutant subject to regulation under the Act. This analysis for CO will assess the impacts on soils and vegetation, caused by any increase in emissions of any regulated pollutant from the source.

Economic Growth

Since there is no construction involved in revising the emission limit, there will be no growth associated with this change.

Soils and Vegetation Analysis

A list of soil types present in the general area was determined. Soil types include the following: Loamy Glacial Till, Moderate Thick Loess Over Loamy Glacial Till, and Thin Loess Over Loamy Glacial Till.

Due to the agricultural nature of the land, crops in the Dekalb County area consist mainly of corn, wheat, and soybeans (2002 Agricultural Census for Dekalb County). The maximum modeled concentrations for SDI are well below the threshold limits necessary to have adverse impacts on the surrounding vegetation such as autumn bent, nimblewill, barnyard grass, bishopscap and horsetail, and milkweed (Flora of Indiana – Charles Deam). Livestock in Dekalb County consist mainly of hogs, beef and milk cows (2002 Agricultural Census for Dekalb County) and will not be adversely impacted from the facility. Trees in the area are mainly hardwoods. These are hardy trees and no significant adverse impacts are expected due to modeled concentrations.

Federal Endangered Species Analysis

Federally endangered or threatened species are listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana, and include 12 species of mussels, 4 species of birds, 2 species of bat and butterflies and 1 specie of snake. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial and residential activities in the area.

Federally endangered or threatened plants as listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana list two threatened and one endangered species of plants. The endangered plant is found along the sand dunes in northern Indiana while the two threatened species do not thrive in industrialized and residential areas. The facility is not expected to impact that area.

Visibility Analysis

Carbon monoxide (CO) was the only pollutant which experienced a significant increase of emissions. CO does not negatively contribute to visibility, therefore no visibility analysis was performed.

Additional Analysis Conclusions

The results of the additional impact analysis conclude the operation of the facility will have no significant impact on economic growth, soils, vegetation or visibility in the immediate vicinity or on any Class I area.

Part E - Summary of Air Quality Analysis

SDI has applied for a modification of their facility with an increase of their CO emissions. Dekalb County is designated as attainment for all criteria. CO modeling results taken from the latest version of the AERMOD model showed impacts are predicted to be less than the significant impact levels and thus the project will not violate the CO standard.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Barry Smith
Steel Dynamics, Inc.
4500 CR 59
Butler, Indiana 46721

DATE: Dec. 30, 2009

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Significant Source Modification
033-26976-00076

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Mark Millet (VP: Steel Dynamics, Inc.)
Keith Baugues (Keramida Environmental, Inc.)
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07



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Dec. 30, 2009

TO: Butler Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Steel Dynamics, Inc.
Permit Number: 033-26976-00076

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	CDENNY 12/30/2009 Steel Dynamics - Iron Dynamics Division 26976 (draft/final)			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: CERTIFICATE OF MAILING ONLY	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handling Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee
											Remarks
1		Niann 660 LN 210 Hamilton LK Hamilton IN 46742 (Affected Party)									
2		Keith Baugues Consultant Keramida Environmental, Inc. 401 N. College Ave. Indianapolis IN 46202 (Consultant)									
3		Mr. Marty K. McCurdy 2550 County Road 27 Waterloo IN 46793 (Affected Party)									
4		Doug McGregor Steel Dynamics, Inc. 4500 CR 59 Butler IN 46721 (Affected Party)									
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1		Barry Smith Steel Dynamics - Iron Dynamics Division 4500 CR 59 Butler IN 46721 (Source CAATS)										
2		Mark Millet VP & General Manager Steel Dynamics - Iron Dynamics Division 4500 CR 59 Butler IN 46721 (RO CAATS)										
3		Mr. Steve Christman NISWMD 2320 W 800 S, P.O. Box 370 Ashley IN 46705 (Affected Party)										
4		DeKalb County Commissioners 100 South Main Street Auburn IN 46706 (Local Official)										
5		Ms. Diane Leroy 303 N. Jackson St. Auburn IN 46706 (Affected Party)										
6		Mr. Janel Rogers 311 S. Main Auburn IN 46706 (Affected Party)										
7		Mr. Barry Fordanish R#3 1480 CR 66 Auburn IN 46706 (Affected Party)										
8		Mr. Dave Weilbaker 1423 Urban Ave Auburn IN 46706 (Affected Party)										
9		Dekalb County Health Department 215 E. 9th, County Office Building, Suite 201 Auburn IN 46706-2336 (Health Department)										
10		Butler Public Library 340 South Broadway Street Butler IN 46721-1308 (Library)										
11		Daniel & Sandy Trimmer 15021 Yellow River Road Columbia City IN 46725 (Affected Party)										
12		Mr. Charles L. Berger Berger & Berger, Attorneys at Law 313 Main Street Evansville IN 47700 (Affected Party)										
13		21Alive P.O. Box 2121 Fort Wayne IN 46801 (Affected Party)										
14		NBC33 2633 West State Blvd Fort Wayne IN 46808 (Affected Party)										
15		Brown & Sons Fuel Co. P.O. Box 665 Kendallville IN 46755 (Affected Party)										

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