



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
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TO: Interested Parties / Applicant

DATE: August 10, 2007

RE: Steel Dynamics, Inc. - Engineered Bar Products Division / 063-25117-00037

FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from 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-AM.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

August 10, 2007

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
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Mr. Mike Brooks
Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division
8000 North County Road 225 East
Pittsboro, IN 46167

Re: 063-25117-00037
Third Administrative Amendment to
Significant Source Modification No.
063-16628-00037

Dear Mr. Brooks:

Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division was issued a Significant Source Modification No. 063-16628-00037 on August 29, 2007 for the operation of a steel bar mini mill plant. A letter requesting an amendment to this permit was received on June 22, 2003. Pursuant to the provisions of 2-7-11 the permit is hereby administratively amended as shown in the attached Technical Support Document.

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this amendment and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Kristen Layton, at (800) 451-6027, and ask for Kristen Layton or extension 3-3031, or dial (317) 233-3031.

Sincerely,

Original document signed by

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

Attachments

KRL

cc: File - Hendricks County
U.S. EPA, Region V
Hendricks County Health Department
Air Compliance Section Inspector
Compliance Data Section
Administrative and Development



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Prevention of Significant Deterioration Part 70 Significant Source Modification

OFFICE OF AIR QUALITY

Steel Dynamics, Inc. (SDI) - Bar Products Division
8000 North County Road 225 East
Pittsboro, IN 46167

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval 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 is also issued under the provisions of 326 IAC 2-2 (Prevention of Significant Deterioration).

PSD Source Modification No.: 063-16628-00037	
Issued by: Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: August 29, 2003 Expiration Date: August 29, 2008

Minor Source Modification No.: 063-22033-00037, issued December 13, 2005
Administrative Amendment No.: 063-22499-00037, issued February 9, 2006
Significant Source Modification No.: 063-22329-00037, issued March 21, 2007
Administrative Amendment No.: 063-24955-00037, issued June 29, 2007

3 rd Administrative Amendment No.: 063-25117-00037	
Issued by: <i>Original document signed by</i> Matthew W. Stuckey, Deputy Branch Chief Office of Air Quality	Issuance Date: August 10, 2007 Expiration Date: August 29, 2008

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SECTION A

SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary steel mini-mill that manufactures different types of bars.

Source Name:	Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division
Source Location:	8000 North County Road 225 East, Pittsboro, Indiana 46167
Mailing Address:	8000 North County Road 225 East, Pittsboro, Indiana 46167
General Telephone Number:	317-892-7000
County:	Hendricks
County Status:	Nonattainment for the 8-hour ozone standard Nonattainment for PM2.5 Attainment for the other regulated pollutants
SIC Code:	3312 (Steel Mill)
Source Categories:	1 of 28 Listed Source Categories Major Source, under PSD and Emission Offset Rules Minor Source, under Section 112 of the Clean Air Act

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

This stationary source is approved to construct and operate the following emission units and pollution control devices:

- (1) One (1) batch mode EAF, with a nominal capacity of 125 tons of steel per hour, utilizing capture system on a fourth hole duct or direct shell evacuation (DSE) system venting to a baghouse (EAF Baghouse) and a canopy hood for overhead roof exhaust. The EAF is equipped with natural gas fired oxy-fuel burners and uses low sulfur charge carbon. The EAF Baghouse has a flow rate of 675,000 acf/min.

The EAF is separated by a wall from the LMS and Caster and does not have a roof monitor (vent).

- (2) One (1) Ladle Metallurgy station (LMS), rated at 125 tons/hour, and exhausting to its own baghouse (LMS Baghouse). The LMS Baghouse has a flow rate of 85,000 acf/min.

Both the EAF Baghouse and LMS Baghouse exhaust to the same common stack. The meltshop does not have roof monitor.

- (3) The EAF dust is conveyed to a dust storage silo, identified as EAF Dust Handling System.
- (4) One (1) continuous Caster with a nominal casting rate of 125 tons/hour. This Caster is located in a separate room from the EAF and LMS and the tundish is covered with a lid. The fugitive emissions exhaust to a roof monitor. The continuous Caster vents to a roof monitor (vent).

- (5) One (1) Reheat Furnace, with nominal capacity of 185 MMBTU/hour and equipped with natural gas fueled low NO_x burners.
- (6) Two (2) natural gas fueled low NO_x Tundish Preheaters, each with nominal capacity of 9 MMBTU/hour.
- (7) Five (5) natural gas fueled low NO_x LMS Ladle Preheaters/Dryers, each with nominal capacity of 7.5 MMBTU/hour.
- (8) Two (2) natural gas fueled low NO_x Tundish Dryers, each with nominal capacity of 9 MMBTU/hour.
- (9) Three (3) natural gas fueled low NO_x Tundish Nozzle Preheaters, with nominal total capacity of 6 MMBTU/hour.
- (10) One (1) vacuum tank degasser (VTD), rated at 125 tons/hour, equipped with a 38.4 MMBTU/hour flare; and one (1) VTD Boiler (approved for construction in 2007), rated at a maximum capacity of 69.0 MMBTU/hr, equipped with natural gas fueled low NO_x burners, and exhausting to stack 8.
- (11) Supporting operations consisting of:
 - Caster cutting torches with nominal total capacity of 6.3 MMBTU/hour and use natural gas as fuel,
 - Bar cutting operation venting to a particulate control at a flow rate of 0.0052 gr/dscf and 30,000 dscf/min,
 - Scarfer venting to a baghouse at a flow rate of 48,200 dscf/min,
 - Bloom billet caster,
 - Water descaler,
 - Roughing mill,
 - Finishing mill,
 - Cooling bed,
 - Shipping and
 - Storage.
- (12) Nine (9) silos to store lime, carbon, flux additives and EAF dust. Each silo is equipped with a bin vent filter, with a grain loading of 0.01 gr/dscf at a flow rate of 1,200 dscf/min.
- (13) Scrap material handling, lime handling, carbon handling
- (14) Slag handling, slag dumping, slag pots, slag crushing, slag screening, drop ball breaking, conveyors, and storage piles. The slag processing and handling has a nominal rate of 300 tons/hour.
- (15) Transportation on paved roadways, paved parking lots, unpaved roadways, and other unpaved areas around slag piles and steel scrap piles.
- (16) Contact and Non-Contact Cooling towers, with nominal capacity of 44,000 gal/min and with drift eliminators as control:
 - Tower 1 -- Meltshop Non-Contact Cooling Tower - - 26,700 gal/min,
 - Tower 2 -- VTD Contact Cooling Tower - - 2,000 gal/min,
 - Tower 3 -- Bar Mill Contact Cooling Tower - - 9,700 gal/min, and
 - Tower 4 -- Bar Mill Non-Contact Cooling Tower - - 5,600 gal/min.
- (17) Diesel fueled Emergency Generator(s), with total nominal capacity of 485 HP.

- (18) Five (5) natural gas fired heat treat furnaces, each furnace has a nominal heat input capacity of 11.6 million (MM) Btu per hour and a maximum capacity of 20 tons of steel input per charge. These furnaces will be located in a new finishing building of the existing mini-mill.

Stack Summary	
Heat Teat Furnace ID	Stack ID
HTF1	HT1
	HT2
HTF2	HT3
	HT4
HTF3	HT5
	HT6
HTF4	HT7
	HT8
HTF5	HT9
	HT10

- (19) One (1) quench tank.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This steel mini-mill 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 D.5

FACILITY OPERATION CONDITIONS

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

One (1) vacuum tank degasser (VTD), rated at 125 tons/hour, equipped with a 38.4 MMBTU/hour flare; and one (1) VTD Boiler (approved for construction in 2007), rated at a maximum capacity of 69.0 MMBTU/hr, equipped with natural gas fueled low NO_x burners, and exhausting to stack 8.

(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)] [326 IAC 2-2-3(a)(3)]

D.5.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]

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

D.5.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the VTD Flare.

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

D.5.3 VTD Flare [326 IAC 2-2]

The Permittee shall operate the VTD flare, with the temperature not less than 1,100°F, except during start up and shutdown, to control CO emissions at all times that the VTD is in operation.

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

D.5.4 Record Keeping Requirements

- (a) To document compliance with Condition D.5.3, the Permittee shall maintain records of the temperature of the VTD flare and make available upon request to IDEM, OAQ and the US EPA. The Permittee shall include in its records when a temperature reading was not taken and the reason for the lack of a temperature reading (e.g. the process did not operate that day).
- (b) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan and make available upon request to IDEM, OAQ, and the US EPA.
- (c) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Administrative Amendment

Source Description and Location

Source Name:	Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division
Source Location:	8000 North County Road 225 East, Pittsboro, IN 46167
County:	Hendricks
SIC Code:	3312
PSD/SSM Permit No.:	PSD/SSM 063-16628-00037
PSD/SSM Permit Issuance Date:	August 29, 2003
Administrative Amendment No.:	063-25117-00037
Permit Reviewer:	Kristen Layton

Existing Approvals

The Office of Air Quality (OAQ) received an application from Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division for a Part 70 Operating Permit on March 15, 2005. At this time, this application is still under review. The source is operating under the PSD/SSM permit No. 063-16628-00037, issued on August 29, 2003. The source has since received the following approvals:

- (a) Minor Source Modification No. 063-22033-00037, issued on December 13, 2005;
- (b) Administrative Amendment No. 063-22499-00037, issued on February 9, 2006;
- (c) PSD Significant Source Modification No. 063-22329-00037, issued on March 21, 2007; and
- (d) Administrative Amendment No. 063-24955-00037, issued on June 29, 2007.

County Attainment Status

The source is located in Hendricks County.

Pollutant	Status
PM ₁₀	Attainment
PM _{2.5}	Basic nonattainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Basic nonattainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Hendricks County has been designated as nonattainment for the 8-hour ozone standard.

Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

- (b) U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Hendricks County as nonattainment for PM_{2.5}. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's guidance to regulate PM₁₀ emissions as a surrogate for PM_{2.5} emissions pursuant to the requirements of Non-attainment New Source Review.
- (c) Hendricks County has been classified as attainment or unclassifiable 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 a steel mini-mill, 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
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).
- (b) This existing source is a major stationary source, under Emission Offset (326 IAC 2-3), because NO_x and VOC, nonattainment regulated pollutants, are emitted at a rate of 100 tons per year or more.
- (c) This existing source is a major stationary source, under nonattainment new source review rules (326 IAC 2-1.1-5) since PM₁₀ (a surrogate for PM_{2.5}) is emitted at a rate of 100 tons per year or more.
- (d) These emissions are based upon the TSD for PSD/Significant Source Modification No. 063-22329-00037.

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 HAPs	Less than 25

This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, 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 2004 OAQ emission data.

Pollutant	Actual Emissions (ton/yr)
PM	not reported
PM ₁₀	46
SO ₂	87
VOC	14
CO	599
NO _x	98
Total HAPs	not reported

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division on June 22, 2007, relating to the removal of the existing VTD Boiler (48.4 MMBtu/hr) and the addition of the following new emission unit approved for construction under Minor Source Modification No. 063-24956-00037:

- (a) One (1) VTD Boiler, approved for construction in 2007, identified as VTD Boiler, rated at a maximum capacity of 69.0 MMBtu/hr, equipped with natural gas fueled low NO_x burners, and exhausting to stack 8.

Enforcement Issues

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. The boiler proposed for approval in this document is not the same unit as the unit referred to the Office of Enforcement. The unit referred to the Office of Enforcement is a temporary boiler installed in February 2007 due to a malfunction in the previously permitted VTD boiler.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
8	VTD Boiler	40	4.5	7,500	475

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

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.”

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (ton/yr)
PM	0.6
PM ₁₀	2.3
SO ₂	0.2
VOC	1.7
CO	25.4
NO _x	15.1

HAPs	Potential To Emit (ton/yr)
Benzene	6.35E-04
Dichlorobenzene	3.63E-04
Formaldehyde	2.27E-02
Hexane	5.44E-01
Toluene	1.03E-03
Lead	1.51E-04
Cadmium	3.32E-04
Chromium	4.23E-04
Manganese	1.15E-04
Nickel	6.35E-04
TOTAL	5.70E-01

The modification will be incorporated into the Part 70 Operating Permit through an Administrative Amendment issued pursuant to 326 IAC 2-7-11(a)(5), because it is incorporating into a Part 70 permit the requirements from Minor Source Modification No. 063-24956-00037, a preconstruction permit issued under 326 IAC 2-7-10.5.

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 Administrative Amendment, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Potential to Emit (ton/yr)						
Process / Emission Unit	PM	PM ₁₀	SO ₂	VOC	CO	NO _x
VTD Boiler	0.6	2.3	0.2	1.7	25.4	15.1
PSD Significant Level	25	15	40	40	100	40

- (a) This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) This modification to an existing major stationary source is not major because the emissions increase is less than the Emission Offset and Nonattainment NSR significant levels. Therefore, pursuant to 326 IAC 2-3 and 326 IAC 2-1.1-5, the Emission Offset and Nonattainment NSR requirements do not apply.
- (c) Hendricks County has been designated as nonattainment for PM_{2.5} in 70 FR 943 dated January 5, 2005. According to the April 5, 2005 EPA memo titled "Implementation of New Source Review Requirements in PM_{2.5} Nonattainment Areas" authored by Steve Page, Director of OAQPS, until EPA promulgates the PM_{2.5} major NSR regulations, states should assume that a major stationary source's PM₁₀ emissions represent PM_{2.5} emissions. IDEM will use the PM₁₀ nonattainment major NSR program as a surrogate to address the requirements of nonattainment major NSR for the PM_{2.5} NAAQS. A significant emissions increase would be a net emissions increase or the potential of fifteen (15) tons per year or greater of PM₁₀. Steel Dynamics, Inc. (SDI) - Engineered Dar Products Division has limited the potential to emit of PM₁₀ from the modification to less than fifteen (15) tons per year. Therefore, assuming that PM₁₀ emissions represent PM_{2.5} emissions, 326 IAC 2-1.1-5 does not apply for PM_{2.5}.

Federal Rule Applicability Determination

The following federal rules are applicable to the source due to this modification:

NSPS:

- (a) The VTD boiler (69.0 MMBtu/hr) has a maximum heat input capacity greater than 10 MMBtu/hr and less than 100 MMBtu/hr and will be constructed after June 9, 1989 applicability date. Therefore, this boiler is subject to the New Source Performance Standards for Small Industrial - Commercial - Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40c, Subpart Dc).

Nonapplicable portions of the NSPS will not be included in the permit. Since the VTD Boiler only burns natural gas, it is subject to the following portions of 40 CFR 60, Subpart Dc.

- (1) 40 CFR 60.40c
- (2) 40 CFR 60.41c
- (3) 40 CFR 60.43c(d)
- (4) 40 CFR 60.43c(e)(1)
- (5) 40 CFR 60.45c(a)
- (6) 40 CFR 60.45c(d)
- (7) 40 CFR 60.47c(d)

- (8) 40 CFR 60.48c(a)
- (9) 40 CFR 60.48c(b)
- (10) 40 CFR 60.48c(g)
- (11) 40 CFR 60.48c(i)
- (12) 40 CFR 60.48c(j)

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12, apply to the VTD boiler except when otherwise specified in 40 CFR 60, Subpart Dc.

NESHAP:

(b) On June 8, 2007, the United States Court of Appeals for the District of Columbia Circuit (in *National Resource Defense Council, Sierra Club, Environmental Integrity Project vs EPA*, No. 04-1385), vacated 40 CFR 63, Subpart DDDDD in its entirety. NESHAP 40 CFR Part 63, Subpart DDDDD has been vacated and pursuant to Section 112(j) of the Clean Air Act, major sources of Hazardous Air Pollutants (HAPs), in specified source categories, require a case-by-case MACT determination when EPA fails to promulgate a scheduled MACT Standard by the regulatory deadline. Since Steel Dynamics, Inc. (SDI) - Engineered Bar Products Division is considered an area source under Section 112 of the Clean Air Act, the source would not have been subject to the MACT Standard. Therefore, the source is not subject to a case-by-case MACT determination.

CAM:

(c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:

- (1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;
- (2) is subject to an emission limitation or standard for that pollutant; and
- (3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each new or modified emission unit involved:

CAM Applicability Analysis							
Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Part 70 Major Source Threshold (ton/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
VTD Boiler	none*	Y	30.2	15.1	100	N	N

* Low NO_x burners do not meet the definition of a "control device" per 40 CFR 64.1.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to the new unit as part of this modification.

State Rule Applicability Determination

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

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

The operation of this facility 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 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The VTD Boiler (69.0 MMBTU/hr) is subject to this rule. However, since this boiler is also subject to a NSPS, the unit is exempt from the requirements of 326 IAC 6-2.

326 IAC 20-95 (Hazardous Air Pollutants: Institutional, Commercial and Industrial Boilers and Process Heaters)

The operation of this facility 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, this source is an area source under Section 112 of the Clean Air Act and 326 IAC 20-95 does not apply.

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.

There are no Compliance Determination Requirements applicable to this modification.

Proposed Changes

The changes listed below have been made to PSD Permit No. 063-16628-00037. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

- (1) Section A.2 - Emission units and Pollution Control Equipment Summary and Section D.5 - Facility Description Box have been modified to show the removal of the existing VTD Boiler (48.4 MMBtu/hr) and the addition of the new VTD Boiler (69.0 MMBtu/hr) as follows:

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

This stationary source is approved to construct and operate the following emission units and pollution control devices:

...

- (10) One (1) vacuum tank degasser (VTD), rated at 125 tons/hour, equipped with a 38.4 MMBTU/hour flare; and one (1) VTD Boiler (**approved for construction in 2007**), rated at a ~~nominal maximum~~ capacity of ~~48.4~~ **69.0** MMBTU/hr, ~~and~~ equipped with natural gas fueled low NO_x burners, **and exhausting to stack 8**.

...

SECTION D.5

FACILITY OPERATION CONDITIONS

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

One (1) vacuum tank degasser (VTD), rated at 125 tons/hour, equipped with a 38.4 MMBTU/hour flare; and one (1) VTD Boiler (**approved for construction in 2007**), rated at a ~~nominal~~ **maximum** capacity of ~~48.4~~ **69.0** MMBTU/hr, and equipped with natural gas fueled ~~ultra~~ low NO_x burners, **and exhausting to stack 8.**

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

- (2) Condition D.5.1 - PSD BACT has been removed due to the removal of the existing VTD Boiler. Since the new VTD Boiler is not subject to the requirements of 326 IAC 2-2 (PSD), no new PSD BACT requirements have been added for the new unit. Section D.5 and the Table of Contents have been updated to account for this change.

~~D.5.1 PSD BACT [326 IAC 2-2]~~

~~Pursuant to 326 IAC 2-2, the Permittee shall comply with the following:~~

- ~~(a) The NO_x emissions from the VTD Boiler shall not exceed 0.035 lb/MMBTU.~~
- ~~(b) The CO emissions from the VTD Boiler shall not exceed 0.061 lb/MMBTU.~~
- ~~(c) The VOC emissions from the VTD Boiler shall not exceed 0.0026 lb/MMBTU.~~
- ~~(d) The SO₂ emissions from the VTD Boiler shall not exceed 0.0006 lb/MMBTU.~~
- ~~(e) The PM_(filterable) emissions from the VTD Boiler shall not exceed 0.0019 lb/MMBTU.~~
- ~~(f) The PM_{10 (filterable and condensable)} emissions from the VTD Boiler shall not exceed 0.0076 lb/MMBTU.~~

- (3) The requirements of 326 IAC 2-2 have been rendered not applicable for the new VTD boiler (69.0 MMBtu/hr). Therefore, the requirements of Condition D.5.4 - Low NO_x Burners, D.5.5 - Natural Gas Fuel, and associated Record Keeping Requirements have been deleted. Section D.5 and the Table of Contents have been updated to account for these change.

~~D.5.4 Low NO_x Burners [326 IAC 2-2]~~

~~Pursuant to 326 IAC 2-2, the Permittee shall comply with the following:~~

- ~~(a) The Permittee shall equip and operate the VTD boiler with natural gas fueled ultra low NO_x burners.~~
- ~~(b) Good combustion shall be practiced.~~

~~D.5.5 Natural Gas Fuel [326 IAC 2-2]~~

~~The Permittee shall use pipeline natural gas that is naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by supplier through a pipeline. Pipeline natural gas contains 0.5 grains or less of total sulfur per 100 standard cubic feet.~~

~~Additionally, pipeline natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 BTU per standard cubic foot.~~

~~Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.~~

~~D.5.7~~**D.5.4** Record Keeping Requirements

- (a) **To document compliance with Condition D.5.3,** The Permittee shall maintain records of the temperature of the VTD flare and make available upon request to IDEM, OAQ and the US EPA. **The Permittee shall include in its records when a temperature reading was not taken and the reason for the lack of a temperature reading (e.g. the process did not operate that day).**
- ~~(b)~~ The Permittee shall maintain the natural gas fuel usage of the VTD boiler and make available upon request to IDEM, OAQ and the US EPA.
- ~~(e)~~**(b)** The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan and make available upon request to IDEM, OAQ, and the US EPA.
- ~~(d)~~**(c)** Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- ~~(e)~~**(d)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Conclusion and Recommendation

The construction and operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Administrative Amendment No. 063-25117-00037. The staff recommend to the Commissioner that this Part 70 Minor Source Modification be approved.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
VTD Boiler**

Company Name: Steel Dynamics, Inc. - Engineered Bar Products Division
Address City IN Zip: 8000 North County Road 225 East, Pittsboro, IN 46167
Permit Number: 063-25117-00037
Plt ID: 063-00037
Reviewer: Kristen Layton
Date: June 22, 2007

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

69.0

604.4

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	50.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.6	2.3	0.2	15.1	1.7	25.4

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
VTD Boiler**

HAPs Emissions

Company Name: Steel Dynamics, Inc. - Engineered Bar Products Division
Address City IN Zip: 8000 North County Road 225 East, Pittsboro, IN 46167
Permit Number: 063-25117-00037
Pit ID: 063-00037
Reviewer: Kristen Layton
Date: June 22, 2007

	HAPs - Organics				
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	6.347E-04	3.627E-04	2.267E-02	5.440E-01	1.028E-03

	HAPs - Metals				
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.511E-04	3.324E-04	4.231E-04	1.148E-04	6.347E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.