Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Signficant Modification to a
Part 70 Operating Permit

for Nucor Steel in Montgomery County

PSD/Significant Source Modification No.: 107-36834-00038
Significant Permit Modification No.: 107-37019-00038

The Indiana Department of Environmental Management (IDEM) has received an application from Nucor Steel, located at 4537 S. Nucor Road, Crawfordsville, IN 47933, for a significant modification of its Part 70 Operating Permit issued on June 1, 2012. If approved by IDEM's Office of Air Quality (OAQ), this proposed modification would allow Nucor Steel to make certain changes at its existing source. Nucor Steel has applied to increase the water capacity to the Hot Mill Contact Cooling Tower.

The applicant intends to modify existing equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g. changes that add or modify synthetic minor emission limits). IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

A copy of the permit application and IDEM's preliminary findings are available at:

Crawfordsville Public Library
205 S. Washington St.
Crawfordsville, IN 47933

A copy of the preliminary findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

How can you participate in this process?

The date that this notice is published in a newspaper marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you

do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number PSD/SSM 107-36834-00038 and SPM 107-37019-00038 in all correspondence.

Comments should be sent to:

Heath Hartley
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 2-8217
Or dial directly: (317) 232-8217
Fax: (317) 232-6749 attn: Heath Hartley
E-mail: hhartley@idem.IN.gov

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions, please contact Heath Hartley of my staff at the above address.

Jenny Acker, Section Chief
Permits Branch
Office of Air Quality

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DRAFT

Mr. David Sulc
Nucor Steel
4537 S. Nucor Road
Crawfordsville, IN 47933

Re: 107-37019-00038
Significant Permit Modification to
Part 70 Renewal No.: T107-30293-00038

Dear Mr. Sulc:

Nucor Steel was issued Part 70 Operating Permit Renewal No.: T107-30293-00038 on June 1, 2012 for a steel minimill located at 4537 S. Nucor Road, Crawfordsville, IN 47933. An application to modify the source was received on February 15, 2016. Pursuant to the provisions of 326 IAC 2-7-12, a Significant Permit Modification to this permit is hereby approved as described in the attached Technical Support Document.

Please find attached the entire Part 70 Operating Permit as modified. The permit references the below listed attachment(s). Since these attachments have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this modification:

Attachment A: Fugtitive Dust Control Plan
Attachment B: 40 CFR 60, Subpart Dc - Small Industrial-Commercial-Institutional Steam Generating Units
Attachment C: 40 CFR 60, Subpart AAa - Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels
Attachment D: 40 CFR 63, Subpart CCC - Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants
Attachment E: 40 CFR 63, Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines

Previously issued approvals for this source containing these attachments are available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

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If you have any questions on this matter, please contact Heath Hartley, of my staff, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251 at 317-232-8217 or 1-800-451-6027, and ask for extension 2-8217.

Sincerely,

Jenny Acker, Section Chief
Permits Branch
Office of Air Quality

Attachments: Modified Permit and Technical Support Document

cc: File - Montgomery County
Montgomery County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch
Billing, Licensing and Training Section

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Part 70 Operating Permit Renewal

OFFICE OF AIR QUALITY

Nucor Steel
4537 S. Nucor Road
Crawfordsville, Indiana 47933

(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.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

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

Operation Permit No.: T107-30293-00038	
Issued by: Original Signed Chrystal A. Wagner, Section Chief Permits Branch Office of Air Quality	Issuance Date: June 1, 2012 Expiration Date: June 1, 2017

Significant Permit Modification No. 107-31578-00038, issued on August 30, 2012
Administrative Amendment No.: 107-32565-00038, issued on December 11, 2012
Significant Permit Modification No.: 107-32627-00038, issued on October 4, 2013
Administrative Amendment No.: 107-35305-00038, issued on March 5, 2015
Significant Permit Modification No.: 107-35939-00038, issued on September 10, 2015
Significant Permit Modification No.: 107-36536-00038, issued on February 19, 2016

Significant Permit Modification No.: 107-37019-00038	
Issued by: Jenny Acker Section Chief, Permits Branch Office of Air Quality	Issuance Date: Expiration Date: June 1, 2017

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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(14)][326 IAC 2-7-1(22)]

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

Source Address:	4537 S. Nucor Road, Crawfordsville, Indiana 47933
General Source Phone Number:	(765) 364-1323
SIC Code:	3312
County Location:	Montgomery
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major 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)]

This steel mini-mill consists of a source with on-site contractors:

(a) Nucor Steel, the primary operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933;

(b) Steel Technologies- Plant ID 107-00046, is located at 3560 South Nucor Road, Crawfordsville, Indiana 47933;

(c) Whitesville Mill Processing, the supporting operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933; and

(d) Linde Gases, the supporting operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933;

One combined Part 70 permit will be issued to Nucor Steel, Whitesville Mill Processing, Steel Technologies, and LINDE Gases. The plant ID for the combined source is 107-00038.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

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

D.1 – CASTRIP – VACUUM DEGASSER AND FLARE

(a) One (1) vacuum degasser with process gas lances, identified as V #1, constructed in 2004, approved in 2006 for modification, approved in 2013 for modification to incorporate fluoride additions, with a maximum capacity of 270 tons of steel/hour, approved in 2012 to replace the closed flare with an open flare, and exhausting to Stack 500. This vacuum degasser removes entrained gases from the steel, decarburizes and desulfurizes the steel. The flare has two (2) pilot lights each with a maximum heat input capacity of 0.2 MMBtu/hour, uses natural gas as its primary fuel with propane as back up fuel. The flare only operates when the vacuum degasser is under negative pressure (i.e., when CO must be controlled).

This Castrip VTD can receive liquid steel from the Meltshop LMFs or EAFs or AOD or the Castrip LMS-2.

D.2 – CASTRIP – LOW NOx BOILER

(b) One (1) natural gas fueled low-NO_x boiler, identified as Boiler ID No. 501, constructed in 2004, a heat input capacity of 71.04 MMBtu/hour, utilizing low-NOx burners, and exhausting to Stack 501. This boiler provides steam to the vacuum degasser. Propane will be used as back up fuel.

Under 40 CFR Part 60, Subpart Dc, this unit is considered a steam generating unit.

D.3 – CASTRIP – PREHEATERS, DRYERS, AND ALLOY UNLOADING

(c) One (1) natural gas fueled ladle preheater, identified as LP-3, constructed in 2004, to be modified in 2006, with a heat input capacity of 12 MMBtu/hour utilizing low NOx burners, emissions uncontrolled, and exhausting to a roof monitor (S-21, also identified as 105,106). Propane will be used as back up fuel.

(d) Two (2) natural gas-fired ladle preheaters, identified as LP-1 and LP-2, each constructed in 2002, to be modified in 2007, with a heat input capacity of 12 MMBtu/hour each, utilizing low-NOx burners, and the capability to utilize propane as a backup fuel. The preheaters exhaust to roof monitor S-21.

(e) Two (2) natural gas-fired tundish preheaters, identified as TP-1 and TP-2, constructed in 2002, to be modified in 2006, with a heat input capacity of 10 MMBtu per hour each, utilizing oxy-fuel burners, and have the capability to utilize propane as a backup fuel. Emissions exhaust to LMS baghouse stack S-20.

(f) Two (2) natural gas-fired tundish nozzle preheaters identified as TNP-1 and TNP-2, to be modified in 2006. Each tundish nozzle preheater shall be equipped with low-NOx burners, shall not exceed a maximum heat input rate of 2 MMBtu per hour, and has the capability to utilize propane as a backup fuel. Combustion emissions exhaust to the LMS baghouse stack identified as S-20.

(g) Three (3) natural gas-fired tundish dryers, identified as TD-1, TD-2, and TD-3, constructed in 2002, to be modified in 2006, with a maximum heat input capacity of 4 MMBtu per hour, 3 MMBtu per hour, and 1 MMBtu per hour, respectively, utilizing low-NOx burners, and having the capability to utilize propane as a backup fuel. Emissions exhaust to roof monitor S-21.

(h) Two (2) natural gas-fired transition piece preheaters, identified as TPP-3 and TPP-4, and two (2) natural gas-fired transition piece dryers, identified as TPD-1 and TPD-2, constructed in 2002, to be modified in 2006. The two (2) transition piece preheaters have a heat input capacity of 2 MMBtu per hour each for a combined total capacity of 4.0 MMBtu per hour, the two (2) transition piece dryers have heat input capacity of 0.15 MMBtu per hour each, utilizing low-NOx burners. The preheaters exhaust to baghouse stack S-20. The dryers exhaust to roof monitor S-21. The preheaters are used in the tundish operation located on the caster deck. The transition piece preheaters and transition piece dryers utilize propane as a backup fuel.

(i) Associated VTD alloy unloading, storage and feed systems, identified as AU-2, controlled by baghouses AU-2b and AU-2c, constructed in 2005, approved for modification in 2008, and consisting of:

(1) One (1) alloy truck dump station.

(2) Truck unloading/conveyors.

(3) Storage hoppers, all exhausting to a common bin vent, rated at 0.01 grains per dry standard cubic foot, into the building.

Alloy unloading is performed in a 3-sided building along the side of the existing Castrip building. Emissions exhaust to the atmosphere.

(4) One (1) bulk lime storage silo, with a capacity of 70 tons and a loading rate of 25 tons per hour, with a baghouse venting to stack AU-2a.

(5) One (1) totally enclosed screw auger system for the bulk lime storage silo with a loading rate of 30 tons per hour.

(j) Dumping, storage, and transfer operations of alloy raw materials for the strip caster plant, identified as AU-1 and constructed in 2002.

(k) Relocation of the existing lime silo (SAS #1) used for the Castrip to keep the lime dry:

(1) One (1) pneumatic conveying of lime into the silo, SAS #1, approved in 2012 for construction, with maximum loading rate of 25 tons per hour, controlled by a bin vent filter with air flow rate of 1,200 dry standard cubic foot per minute (dscfm) and outlet grain loading of 0.01 grain/dscf and vented back to the Castrip baghouse.

(2) One (1) lime silo screw auger, approved in 2012 for construction, which conveys lime into an existing hopper at a maximum loading rate of 40 tons per hour, located inside a totally enclosed building. Particulate emissions collected from this totally enclosed building is vented back into the Castrip Baghouse.

D.4 - CASTRIP – LMS, TUNDISH, AND CONTINUOUS STRIP CASTER

(k) A strip caster line rated at a maximum steel production rate of 270 tons per hour consisting of:

(1) One (1) ladle metallurgy station, identified as LMS-2, constructed in 2002, approved in 2006 for modification, approved in 2013 for modification by adding a second ladle access to the LMS (only one ladle can operate at a time), with a maximum production capacity of 270 tons of steel per hour, and emissions captured by a side draft hood that has a PM capture efficiency of 99 percent and controlled by the LMS-2 baghouse, and exhausting to the LMS-2 baghouse stack identified as S-20. The remaining uncontrolled emissions shall be exhausted through the LMS-2 roof monitor identified as S-21. The LMS-2 baghouse has an enclosed dust handling system or equivalent for material recovery and particulate matter control

This LMS-2 receives liquid steel from the Castrip VTD or Meltshop LMFs, or EAFs or AOD. It can process heats and return them to the CASTRIP or the Meltshop for casting.

(2) Tundishes, identified as T-1, constructed in 2002, to be modified in 2006, with a maximum production capacity of 270 tons of steel per hour. The two (2) natural gas-fired tundish preheaters, identified as TP-1 and TP-2 and the three (3) natural gas-fired tundish dryers, identified as TD-1, TD-2 and TD-3, supply heat

to the tundish. Only one (1) tundish may be operated at a given time. The tundish in operation feeds the molten metal from the LMS-2 ladle to one (1) continuous strip caster identified as CS-1.

(3) One (1) continuous strip caster, identified as CS-1, constructed in 2002, approved in 2006 for modification, approved in 2013 for modification to allow casting a wider strip of steel, with a maximum capacity of 270 tons of steel per hour, and emissions captured by a canopy hood that has a PM capture efficiency of 98 percent. The captured PM in the gas stream shall be controlled by the LMS-2 baghouse and the gas stream shall be exhausted though the LMS-2 baghouse stack identified as S-20. The remaining uncontrolled emissions shall be exhausted through the LMS-2 roof monitor identified as S-21.

This Castrip Caster CS-1 receives liquid steel from the Castrip VTD or Castrip LMS-2 or Meltshop LMFs or EAFs or AOD.

D.5 – **INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS** (See Condition A.4)

D.6 – INSIGNIFICANT ACTIVITIES – CASTRIP – COILERS, COIL CUTTING, AND HOT ROLLING STAND (See Condition A.4)

WASTEWATER TREATMENT PLANT

(l) One wastewater treatment plant, identified as WWTP, constructed in September 2002, consisting of two water recovery systems i.e. oil/alkali wastes and acid rinse water, and surge vessels for the regenerated acid, acid rinse water and spent pickle liquor. The WWTP consists of following:

(1) Oily waste tanks:

(A) Two (2) batch treatment tanks, identified as T-853 and T-854, with a maximum capacity of 12,000 gallons each, with emissions uncontrolled, and exhausting inside the building.

(B) One (1) decant oil tank, identified as T-856, with maximum capacity of 9,000 gallons with emissions uncontrolled, and exhausting inside the building.

(C) One (1) oily waste evaporator feed tank, identified as T-858, with maximum capacity of 20,000 gallons with emissions uncontrolled.

(D) One (1) oily waste evaporator concentrate tank, identified as T-857, with maximum capacity of 20,000 gallons with emissions uncontrolled, and exhausting inside the building.

(2) Acid tanks:

(A) Three (3) acid rinse water surge tanks, identified as T-850, T-851 and T-852, with a maximum capacity of 33,000 gallons each, with emissions controlled by the pickle line scrubber #1, and exhausting to stack S-17.

(B) One (1) lime neutralization tank, identified as T-875, with maximum capacity of 10,000 gallons, with emissions controlled by a wet particulate scrubber, and exhausting to stack S-60.

(C) One (1) acidic rinse evaporator feed tank, identified as T-877, with maximum capacity of 20,000 gallons with emissions uncontrolled and exhausting to stack S-17.

(D) One (1) acidic rinse evaporator concentrator tank, identified as T-878, with maximum capacity of 20,000 gallons with emissions uncontrolled and exhausting to stack S-17.

(3) Two (2) closed chamber type evaporators, identified as EV-1 and EV-2, each with a maximum capacity of 1,800 gallons per hour. This is a closed loop system with no emissions.

(4) One (1) vertical fixed roof galvanizing line wastewater storage tank, identified as T-855, with a capacity of 9,000 gallons, with emissions uncontrolled and exhausting inside the building.

(m) Three (3) raw acid/regenerated acid tanks, identified as T-867, T-868 and T-869, constructed in September 2002, with a maximum capacity of 33,000 gallons each, with emissions controlled by the pickle line scrubber, and exhausting to S-17.

Under 40 CFR Part 63, Subpart CCC, these units are considered new hydrochloric acid storage vessels.

(n) Four (4) spent pickle liquor tanks, identified as T-863, T-864, T-865 and T-866, constructed in September 2002, each with a maximum capacity of 33,000 gallons each, with emissions controlled by the pickle line scrubber, and exhausting to S-17.

(o) Lime silo system, constructed in 1989 and relocated in September 2002, including the following equipment:

(1) One (1) lime silo, identified as TFS-1, with a maximum capacity of 60,000 pounds.

(2) One (1) live bin bottom.

(3) One (1) screw conveyor.

(4) One (1) wet particulate scrubber.

D.7 – SLAG PROCESSING

(p) Slag processing, identified as EU-10, constructed in 1989, is performed by Whitesville Mill Service Company, an on-site contractor. Slag and other steel mill related materials are transported by slag pots or other mobile equipment, processed, and stockpiled with a maximum throughput of 305 tons/hr. This emission unit consists of storage piles (unprocessed and processed materials), grizzly feeding, slag processing (screening, conveying, and crushing), slag pot dumping, product loading for transport, and unpaved roads. The fugitive emissions from slag processing are controlled by applying an initial application of water or a mixture of water and wetting agent or the use of water sprays weather permitting and exhaust to the atmosphere.

Two (2) conveyors, modified in 2015, identified as TSP-1 and TSP-5, replacement Screen identified as TSP-2 rated at 341 tons/hour, addition of a magnetic separator to a new conveyor belt exiting the Grizzly. Increase the capacity of screening process, TSP-8, consisting of three (3) screeners from a total of 305 tons/hr to a total of 447 tons/hr, approved in 2013 to increase to 600 tons/hr. Finally, the screened material will be

conveyed into the remaining permitted EU10 operation which will increase utilization due to the increase in capacity of TSP-8.

One (1) crusher, TSP-6 with a maximum throughput rate of 100 tons per hour, approved in 2010 for construction and approved in 2011 to increase its capacity to 305 tons per hour.

One (1) Grizzly hopper with vibrating feeder, identified as Grizzly, with a maximum throughput of 305 tons per hour, replaced in 2015.

One (1) conveyor, identified as conveyor B, with a maximum throughput of 610 tons per hour, modified in 2015.

(q) Blend Plant, approved in 2011 for construction, with a maximum rated capacity of 305 tons per hour, which includes front end loaders identified as BP-1 and conveying system identified as BP-2, with fifty (50) slag storage piles. The Blend Plant will further process the various materials streams from the existing Slag Operation EU-10 to produce various blends of slag products.

(q1) Permanent Screening Plant, approved in 2011 for construction, with a maximum rated capacity of 60 tons per hour, and approved in 2012 for modification, and permitted in 2013 with a maximum rated capacity of 300 tons per hour. This screening plant will further screen the slag product from EU-10 and the Blend Plant to a smaller size for special applications.

One (1) double decker screen, identified as PS1 and PS2, approved in 2015 for construction, with a maximum capacity of 200 tons per hour.

One (1) conveyor, identified as Conveyor #7, approved in 2015 for construction, with a maximum capacity of 200 tons per hour.

One (1) front end loader, approved in 2015 for construction, with a maximum capacity of 200 tons per hour.

(q2) One (1) Coil and Scrap Cutting Operation, identified as CC-1, with particulate emissions controlled by a baghouse, utilizing one (1) 11 million British thermal units per hour (MMBtu/hr) torch unit to cut the coils and scrap, approved in 2011 for construction.

(q3) Fifteen (15) storage piles, approved in 2015 for construction, storing slag from the Blend Plant and other steel mill related materials.

D.8 – LINDE GASES PLANT

(r) The LINDE Gases Plant is operated by LINDE Gases, an on-site contractor. It provides gases (oxygen, nitrogen, hydrogen, argon, and liquid air), approved in 2012 to increase oxygen production to displace oxygen currently supplied by outside sources, consisting of:

(1) One (1) natural gas-fired boiler identified as ID No. 1, constructed in 1989, with a heat input capacity of 7 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-36. This boiler uses propane as a backup fuel.

(2) One (1) natural gas-fired boiler, identified as ID No. 2, constructed in 1994, with a heat input capacity of 15.0 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-37. This boiler uses propane as a backup fuel.

Under 40 CFR Part 60, Subpart Dc, this unit is considered a steam generating unit.

(3) One (1) natural gas-fired boiler, identified as the hydrogen plant boiler, constructed in 1996, with a heat input capacity of 9.98 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-30. This boiler uses propane as a backup fuel.

D.9 – INSIGNIFICANT ACTIVITIES – PAVED AND UNPAVED ROADS (See Condition A.4)

D.10 – PETROLEUM PRODUCT STORAGE

(s) One (1) 500 gallon aboveground gasoline storage tank, identified as GST #1, installed in 1988, using submerged filling technology to control VOC emissions, which exhausts to the atmosphere.

(t) Three (3) 500 gallon aboveground diesel storage tanks, identified as DST #1, DST #2, and DST #3, all installed in 1988, using submerged filling technology to control VOC emissions, which exhausts to the atmosphere.

(u) One (1) 5,000 gallon aboveground diesel storage tank, identified as DST #4, installed in 1988, using submerged filling technology to control VOC emissions, which exhausts to the atmosphere.

One (1) 1,000 gallon diesel fuel tank, identified as DST#5, installed in 2010.

D.11 – COOLING TOWERS

(v) The contact and noncontact cooling towers are equipped with drift eliminators. Each cooling tower exhausts to the atmosphere.

(1) The cooling towers listed in the table below are subject to BACT:

Cooling Towers	No. of Cells	Average Capacity (gal/min)
Castrip Contact*	4	12,000
Castrip Non Contact*	7	14,400
Vacuum Degasser Contact*	1	8,000
Vacuum Degasser Non Contact*	1	8,000
Hot Mill Contact**	5	25,000

*Note: The cooling towers that are subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.
**The Hot Mill Contact cooling tower is subject to BACT per SSM 107-36834-00038.

(2) The cooling towers listed in the table below are not subject to BACT[2]:

Cooling Towers	No. of Cells	Average Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Meltshop Non Contact	9	60,000	Galvanizing/Annealing Non Contact	2	6,500
[1]Meltshop Caster Contact	2	5,000	Annealing Non Contact	2	5,000
[1]Meltshop Caster Contact(expansion)	2	5,000			

Cooling Towers	No. of Cells	Average Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Hot Mill Non Contact	4	25,319			
Laminar Contact	3	11,600	LINDE Non Contact (CT-91B)	2	3,200
Cold Mill Non Contact	2	10,000			
Cold Mill Non Contact (expansion)	1	5,000			
(a) One (1) Cooling Tower, approved in 2012 for construction, with average capacity of 1,840 gallons per minute (gpm), located at LINDE GASES PLANT.					

[1] An increase in the actual water circulation rate of 1,400 gallon per minute (gpm) will result at the Meltshop Caster Cooling Tower but will not increase its permitted average capacity of 10,000 gpm.
[2] Note: The cooling towers that are not subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.

INSIGNIFICANT ACTIVITIES – SCRAP HANDLING AND PROCESSING

(See Condition A.4)

D.13 – EMERGENCY GENERATORS

(w1) Diesel fired generators and air compressors for power outages and emergencies.

(1) Cold Mill Cooling tower emergency generator, identified as GEN #3, constructed in 1997, with a capacity of 280 HP, with emissions uncontrolled.

(2) Hot Mill NC Cooling Tower emergency generator, identified as GEN #1, constructed in 1989, with a capacity of 2,100 HP, with emissions uncontrolled.

(3) Galv Line Pot emergency generator, identified as GEN #4, constructed in 1992, with a capacity of 890 HP, with emissions uncontrolled.

(4) MS Cooling Tower emergency generator, identified as GEN #2, constructed in 1996, with a capacity of 2,520 HP, with emissions uncontrolled.

(5) Lip Seal emergency generator, identified as GEN #5, constructed in 1988, permitted in 2013, with a capacity of 30 HP with emissions uncontrolled

(6) Guard House emergency generator, identified as GEN #6, constructed in 2005, permitted in 2013, with a capacity of 67 HP with emissions uncontrolled

(7) VTD emergency generator, identified as GEN #7 with a capacity of 134 HP, constructed in 2003, permitted in 2013, with emissions uncontrolled,

D.14 – INSIGNIFICANT ACTIVITIES – FUEL DISPENSING FACILITIES
(See Condition A.4)

D.15 – COLD MILL – PICKLE LINES 1 AND 2

(x) Both Pickle Lines use enhanced HCl pickling solution and rinse water and are equipped with process tanks.

(1) Pickle Line 1, identified as PL1, constructed in 1988, with a maximum capacity of 250 tons/hr, controlled by a counter flow-packed scrubber and mist eliminators,

and exhausting to stack S-17. The Pickle Line 1 scrubber has a design flow rate of 12,000 acf/min and a loading of 0.01 gr/dscf. Each pickle line has an electric static oiler.

Under 40 CFR Part 63, Subpart CCC, Pickle Line 1 is considered an existing continuous pickle line.

(2) Pickle Line 2, consisting of the following units:

(A) One (1) Pickle Line, identified as PL2, constructed in 1997, approved in 2013 for modification to allow processing of wider strip of steel with a maximum capacity of 250 tons/hr, controlled by a tray scrubber and mist eliminators, and exhausting to stack S-18. The Pickle Line 2 scrubber has a design flow rate of 9,000 acf/min and a loading of 0.01 gr/dscf. Each pickle line has an electric static oiler.

Under 40 CFR Part 63, Subpart CCC, Pickle Line 2 is considered an existing continuous pickle line.

(3) The tank farm treats the rinse water from Pickle Line 1 and Pickle Line 2. These tanks also store spent acid, raw acid, regenerated acid, oily wastewater treated waters for reuse, treatment process wastewater, and other process and treated waters.

Under 40 CFR Part 63, Subpart CCC, the tanks that store virgin or regenerated hydrochloric acid are considered new hydrochloric acid storage vessels.

(4) One (1) pinch roll/flattener for pickling heavy gauge steel and high carbon steel products, approved in 2012 for construction.

D.16 – COLD MILL – COLD REVERSING MILL 1 AND COLD MILL BOILER (CMB #1)

(y) Cold Reversing Mill 1, identified as EU-09, constructed in 1988, with a maximum capacity of 250 tons/hour. Emulsion oil is sprayed on the strip, controlled by hoods mounted on both sides of the mill stand and exhausting, through collision mist eliminators at a design flow rate of 84,000 acf/min and 0.01 gr/dscf, to stack S-32.

(z) One (1) natural gas fueled Cold Mill Boiler, identified as CMB#1, constructed in 1988, with a heat input capacity of 34 MMBtu per hour, with emissions uncontrolled and exhausting to stack S-19. The boiler uses propane as a backup fuel.

D.17 – COLD MILL – REVERSING AND TEMPERING (R/T) MILL

(bb) Reversing and Tempering (R/T) Mill, (previously known as Temper Mill), identified as EU-14, constructed in 1995, with a maximum capacity of 250 tons of steel per hour, with emulsion oil sprayed on the strip, and controlled by hoods mounted on both sides of the mill stand and a fabric filter, exhausting through a panel-type collision mist eliminators to stack S-22. The panel-type collision mist eliminator has a design flow rate of 84,000 acf/min and an outlet grain loading of 0.01 gr/dscf. Note: This mill can reverse and temper. The mist eliminators operate as controls only when the mill is operating as a cold reversing mill.

D.18 – COLD MILL – ALKALINE CLEANING STATION

(cc) Alkali Cleaning at the Galvanizing line with mist eliminator as control. Emissions are exhausted to stack #510. The Alkaline Cleaning Station has a capacity of 140 tons of steel per hour.

D.19 – COLD MILL – ANNEALING FURNACES

(dd1) Eighteen (18) natural gas-fueled batch Annealing Furnaces, identified as EU-03, constructed in 2001. Each has a heat input capacity of 4.8 MMBtu per hour and a maximum throughput capacity of 200 tons of steel per hour. Emissions are uncontrolled and exhaust to roof vent (S-26).

(dd2) One (1) natural gas-fired annealing furnace, identified as AN-19, approved for construction in 2007, with a heat input capacity of 4.8 MMBtu per hour and a maximum throughput capacity of 200 tons of steel per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to roof vent (S-26).

D.20 – INSIGNIFICANT ACTIVITIES – COLD MILL – QUALITY CONTROL/REWIND INSPECTION LINE (See Condition A.4)

D.21 – COLD MILL – ACID REGENERATION

(ee) Acid Regeneration system, identified as EU-04, constructed in 1989, consisting of two natural gas fueled tangentially fired burners with a maximum rating of 5.6 MMBtu per hour, and an absorber and cyclone with emissions controlled by its own counter flow packed scrubber (identified as AR scrubber) with mist eliminator exhausting to stack S-31. The counter flow-packed scrubber has a design flow rate of 4,269 acf/min and loading of 0.04 gr/dscf. Propane is used as back up fuel.

Under 40 CFR Part 63, Subpart CCC, this unit is considered an existing acid regeneration plant.

D.22 – COLD MILL – GALVANIZING LINE/GALVANNEAL, CONTINUOUS ANNEALLING, PHOSPHATE AND CHROMATE APPLICATION

(ff) Thirty six (36) Main Burners, identified as PHB #1 – PHB #36, constructed in 1992, and modified in 2002, input capacity of 1.622 MMBtu per hour each, and three (3) Auxiliary Burners, each with a heat input capacity of 0.1 MMBtu per hour in the preheat furnace section of the galvanizing line using natural gas rated at maximum total capacity of 58.7 MMBtu per hour. The burners use natural gas as primary fuel and propane as backup fuel. The main burners exhaust to stack S-27. The NOx emissions from PHB #1 – PHB #36 are controlled by a Selective Catalytic Reduction/Selective Non-Catalytic Reduction (SCR/SNCR) Systems. A continuous emissions monitor (CEM) is used to monitor NOx emissions. The galvanizing line has an electrostatic oiler. The three (3) Auxiliary Burners exhaust to the atmosphere.

(gg) Additional burners as follows:

(1) Forty four (44) Burners, identified as RB#1 – RB#44, constructed in 2002, each with a heat input capacity of 0.323 MMBtu per hour in radiant tube section with a maximum total capacity of 14.2 MMBtu per hour and option to replace nonconforming burners. The NOx emissions are controlled by a SCR System. The SCR/SNCR and SCR systems shall be referred to collectively as the

SCR/SNCR system. The burners use natural gas as primary fuel and propane as backup fuel and exhaust to stack S-27.

(2) One (1) auxiliary burner with a maximum heat input of 3.2 MMBtu/hr in the Alkaline Cleaning Section. Emissions are uncontrolled and exhausting outside the building. The burner is natural gas fired and uses propane as backup.

(3) Two (2) auxiliary burners with a maximum heat input of 1.5 MMBtu/hr each in the Strip Dryer Section. The burners are natural gas fired and use propane as backup.

(4) Four (4) auxiliary burners with a maximum heat input of 0.052 MMBtu/hr each in the Pot Roll Heater. The burners are natural gas fired and use propane as backup.

(5) Two (2) auxiliary burners with a maximum heat input of 0.013 MMBtu/hr each in the Preheat open end burners section. The burners are natural gas fired and use propane as backup.

The SCR/SNCR and SCR systems shall be referred to collectively as the SCR/SNCR system.

(hh) One (1) Zinc Coating pot, identified as ZP#1, constructed in 1992, with a maximum capacity of 140 tons of steel per hour, uncontrolled and exhausting to the atmosphere.

D.23 – INSIGNIFICANT ACTIVITIES – WELDING (See Condition A.4)

D.24 – INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SHEARS, SIDE TRIMMERS, AND SCRAP CUTTING (See Condition A.4)

D.25 – HOT STRIP MILL & TUNNEL FURNACE SYSTEM

(ii) The Hot Strip Mill, identified as HSM, constructed in 1989, Approved in 2013 for modification to allow rolling of wider strip of steel with a maximum capacity of 502 tons/hour consisting of various rolling mill processes: Shearing, Descaling, Finishing, Laminar Rollout Table, Coilers, Skin Pass Mill and Roll Grinders. Parts of the Hot Mill Strip are controlled by water roll cooling and water sprays.

(jj) Tunnel Furnace System, identified as EU-02, constructed in 1989, Approved in 2013 for modification to allow processing of wider strip of steel with a maximum capacity of 502 tons/hour, with a maximum total heat input capacity of 132 MMBtu per hour, emissions uncontrolled, tunnel furnace 1 exhausts to stack S13 and S14, tunnel furnace 2 exhausts to stack S15, and consisting of:

(1) Tunnel Furnace 1 – Natural gas fired with a heat input capacity of 84 MMBtu per hour. Tunnel Furnace 1 was constructed in 1989 as part of the original Tunnel Furnace System and approved in 2012 to replace burners from 84 MMBtu/hr to 50 MMBtu/hr. Approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel

(2) Tunnel Furnace 2 – Natural gas fired with a heat input capacity of 84 MMBtu per hour. Tunnel Furnace 2 was constructed in 1994 and approved in 2012 to replace burners from 84 MMBtu/hr to 50 MMBtu/hr. Approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

(3) Shuttle Furnaces 1 and 2 – Natural gas fired with a heat input capacity of 13 MMBtu per hour each using low NOx burners. Shuttle Furnaces 1 and 2 were constructed in 1994 and approved for a burner replacement in 2008. Approved in

2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

(4) Snub Furnace – Natural gas fired with a heat input capacity of 6 MMBtu per hour. The snub furnace was constructed in 1989 and modified in 1994. Approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

D.26 – HOT STRIP MILL – ANNEALING FURNACES

(kk) Two (2) natural gas-fired annealing furnaces using propane as a backup fuel, identified as HM #1 and HM #2, each with a maximum heat input capacity of 14.505 MMBtu per hour, both constructed in 2006. Emissions are controlled by low NOx burners and exhaust to the atmosphere.

D.27 – INSIGNIFICANT ACTIVITIES – DEGREASING (See Condition A.4)

D.28 – MELT SHOP – MATERIAL TRANSFER STATION

(ll) Material transfer station #1, located inside the building exhausting to general ventilation, which will service both the EAFs and the LMFs, used to transfer various types and grades of lime, carbon, foamy slag, scrap, scrap substitutes, and other alloys from rail cars. Railcars are unloaded to trucks, silos, or the meltshop alloy handling system. Identified as MT #1, constructed in 2003, and consisting of:

(1) Rail car bottom unloading through a rubber boot to a conveyor with emissions uncontrolled.

(2) One (1) totally enclosed conveyor, identified as MTC, constructed in 2003, with emissions controlled by a bin vent dust collector and exhausting to stack S-45.

(3) One (1) loading spout connected to the load truck with emissions uncontrolled.

(mm) Material transfer station #2, located inside the building and exhausting to the atmosphere, which services the EAFs and the LMFs, used to transfer various types and grades of lime, carbon, foamy slag, scrap, scrap substitutes, and other alloys from rail cars. Railcars are unloaded to trucks, silos, or the meltshop alloy handling system. Identified as MT #2, constructed in 2006, and consisting of:

(1) Ten (10) storage silos, each controlled by individual bin vent filters or the Meltshop EAF baghouses (1 and 2).

(2) One (1) rail unloading operation under a roof.

(3) One (1) truck dumping station enclosed by a three sided building.

(4) One (1) loader dumping station enclosed by a three sided building.

(5) Associated enclosed conveyors.

(6) Storage bins.

(7) Misc. feed equipment and controls.

(mm1) Material transfer station #3, located outside, exhausting to the atmosphere, which services both the EAFs and the LMFs, used to transfer various types and grades

of lime, carbon, foamy slag, and other alloys from rail cars. Rail cars are unloaded to trucks, which transfer materials to silos, or the meltshop alloy handling system. Identified as MT #3, and consisting of:

(1) Rail car bottom unloading through a rubber boot to a conveyor with emissions uncontrolled.

(2) One (1) totally enclosed conveyor, identified as MTC #2 with emissions controlled by a bin vent dust collector and exhausting to the atmosphere.

(3) One (1) loading spout connected to the load truck with emissions uncontrolled.

D.29 – MELTSHOP- ELECTRIC ARC FURNACES, ARGON OXYGEN DECARBURIZATION (AOD) VESSELS, DESULFURIZATION, CONTINUOUS CASTERS, EAF DUST TREATMENT FACILITY

(nn) Two (2) Meltshop Electric Arc Furnaces (EAFs), identified as EAF #1 and EAF #2, constructed in 1989, approved for modification in 2007 to replace the furnace bottoms. EAF #1 consists of three (3) co-jet oxyfuel burner/lance, each has a rated capacity of 6 megawatt constructed in 1996, approved for modification in 2003 using oxygen, natural gas and propane as backup fuels. EAF #2 consists of three (3) co-jet oxyfuel burner/lance, each has a rated capacity of 6 megawatt constructed in 1996, approved for modification in 2003 using oxygen, natural gas and propane as backup fuels. EAF #1 consists of three (3) carbon injectors with total maximum rated capacity of 1000 pounds per minute and EAF #2 consists of three (3) carbon injectors with total maximum rated capacity of 1000 pounds per minute constructed in 1996, approved for modification in 2003, and approved in 2013 for modification by installing six (6) additional new oxy-fuel burners/lances, each with a designed capacity of 5.5 megawatt per hour (MW/hr) for a total of 33 MW/hr to each EAF, install hearth bottom stirring to each EAF, installation of three (3) additional carbon injectors to each EAF with total designed capacity of 1,000 pounds of carbon per minute per EAF. Together the EAFs and the Argon Oxygen Decarburization (AOD) have a maximum capacity of 502 tons/hour, with emissions controlled by multi compartment reverse air type baghouses (identified as Meltshop Baghouse1 and Meltshop Baghouse2). In addition the EAFs have the following associated equipment:

(1) Charge buckets for single charge operation, approved for in 2013 for construction.

(2) Enhancements to scrap bay cranes and Melt Shop overhead cranes, approved in 2013 for construction.

(3) Modifications, upgrades, repairs or additions to EAF, yard and LMF transformers to increase output, approved in 2013 for construction.

(4) Switching to a one (1) bucket charge operation at the EAFs, approved in 2013 for construction.

(5) Modifications to fans at both Melt Shop baghouses for increased energy efficiency, approved in 2013 for construction.

(6) Modifications to existing carbon injection systems, approved in 2013 for construction

(7) Seven (7) small charge buckets, five (5) buckets constructed in 1989 and two (2) charge buckets approved for construction in 2007.

(8) Three (3) additional large charge buckets used for single furnace charges on both EAFs, approved for construction in 2007.

(9) Twenty-five (25) EAFs ladles, twenty-one (21) constructed in 1989, four (4) ladles approved for construction in 2007.

(10) EAF charge handling currently utilizing two (2) overhead cranes with magnets and a conveyor to load charge buckets constructed in 1989 and approved for modification in 2007 with the addition of 2 new scrap cranes with magnetics, enhancement of existing cranes and/or magnetics, use of rail and/or truck dump and loader operations and the use of mobile cranes to load charge buckets in the scrap yard.

(11) Flux and alloy material handling system(Top Feed) for direct feeding of alloys, lime, carbon, scrap substitutes and other related materials to the EAFs constructed in 1989 and approved for modification in 2007 with the addition of bulk loading of material to the system in a three-sided building.

Under 40 CFR Part 60, Subpart AAa, these units are considered electric arc furnaces.

(1) The EAFs also utilize the following technologies:

(A) A direct shell evacuation (DSE) control system (“a fourth hole duct”),

(B) An overhead roof exhaust system consisting of canopy hoods,

(C) Oxy fuel burners, and

(2) Each or any combination of the Meltshop EAFs and AOD can independently produce the maximum capacity of 502 tons/hour of steel. Each Meltshop EAF can operate concurrently or independently to achieve this maximum capacity.

(3) The use of all types of scrap metal, scrap substitutes, including HBI, pig iron, DRI, Iron Carbide, various alloys, multiple grades of lime, charge and injection carbons, oxygen and argon to produce all grades of steel. These include, but are not limited to: ultra-low carbon, low carbon, medium carbon, high carbon, specialty, stainless and alloy steel products.

(4) Both the Meltshop Baghouse1 and Meltshop Baghouse2 capture the emissions from the Meltshop EAFs, AOD vessel, Desulfurization, Meltshop Continuous Casters, the three (3) Ladle Metallurgy Furnaces (EU-13 (a), EU-13 (b) and EU-13 (c)), LD#1, LDS#1 and LDS#1a and other miscellaneous sources. Each Meltshop Baghouse can sufficiently control emissions independently.

(A) The Meltshop Baghouse1 is a multi compartment positive pressure baghouse, has a design air flow rate of 1,527,960 actual cubic foot/min (acf/min) and an outlet PM loading of 0.0018 grains/dry standard cubic foot (gr/dscf). This Meltshop Baghouse1 exhausts to a stack identified as BH1.

(B) The Meltshop Baghouse2 is a multi compartment positive pressure baghouse, has a design flow rate of 915,000 dscf/min and 1,200,000 acf/min and an outlet PM loading of 0.0018 gr/dscf. This Meltshop Baghouse2 exhausts to a stack identified as BH2.

A continuous emission monitor (CEM) for CO2 is used to monitor CO2 emissions from each Meltshop Baghouse.

(5) The fugitive emissions generated during the EAF furnace operations are captured by the Meltshop Roof Canopies or contained within the Meltshop Building.

(6) The Meltshop roof monitors include exhausts from the ladle preheaters, ladle dryers, tundish preheaters, tundish dryers, ladle lancing station, tundish dumping, fugitive emissions from the LMFs, fugitive emissions from the Meltshop Casters and other Meltshop operations.

(oo) One (1) Argon oxygen decarburization (AOD) vessel, identified as AOD1, constructed in 1995. One (1) top lance for AOD1 rated at 300,000 cubic feet/hour of oxygen. Together the AOD and the Meltshop EAFs have a total maximum capacity of 502 tons/hour, with emissions controlled by the Meltshop Baghouse1 which exhausts to a stack identified as BH1, and Meltshop Baghouse2 which exhausts to stack BH2. One Argon-Oxygen Decarburization Dryout and Preheat Burner, constructed pursuant to CP 107-3599-00038, as revised by A107-4631-00038, September 28, 1995.

Under 40 CFR Part 60, Subpart AAa, AOD1 is considered an argon-oxygen decarburization vessel.

(pp) Desulfurization (DS) is an additional step in the Meltshop operations that remove sulfur. It has a maximum capacity of 502 tons of metal per hour.

(qq) Two (2) Meltshop Continuous Casters, identified as CC #1 and CC #2, CC #1 was constructed in 1989, CC #2 was constructed in 1994, with total maximum capacity of 502 tons/hour, with emissions controlled by the Meltshop Baghouse1 which exhausts to stack BH1 or Meltshop Baghouse2 which exhausts to stack BH2. Approved in 2012 to add a quench/descale system at both Meltshop Continuous Casters. The air flow rate from the existing caster steam vent, stack S-11 will increase by approximately 30,000 cubic feet per minute (cfm). Approved in 2013 for modification to allow casting of wider strip of steel. Casters can receive liquid steel from the EAF's, LMF's, AOD and the Castrip LMS or VTD.

(rr) An EAF dust transfer facilities, identified as DTF, constructed in 2004, with emission control by bin vents for the silos, and baghouse for truck/rail car loading. Dust transfer will also occur inside the buildings at both Meltshop baghouses.

Under 40 CFR Part 60, Subpart AAa, this unit is considered a dust handling system. Options for the dust transfer are:

(1) from silo to truck through a loading spout for offsite dust disposal.

(2) from silo to railcar through a loading spout for offsite dust disposal.

(ss) Three (3) Meltshop Ladle Metallurgy Furnaces (LMFs)/Stirring Station, two (2) identified as EU-13 (a) and (b), constructed in 1988, and approved for modification in 2009 by ducting the exhaust to the Meltshop Baghouses 1 and 2; and one (1) LMF identified as EU-13 (c) approved for construction in 2007 with a maximum capacity of 502 tons/hour each. All three LMFs are controlled by the Meltshop Baghouses 1 and 2.In addition the EAFs, AOD and LMFs have the following associated equipment:

(1) Ladle Preheaters, identified as LP #1a through LP #6a and LD-1, consisting of:

(A) Three (3) natural gas-fired ladle preheaters, identified as LP #1a, LP #2a, and LP #3a, approved for construction in 2007, each with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(B) One (1) natural gas-fired AOD ladle preheater, identified as LP #4a, approved for construction in 2007, with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(C) One (1) natural gas-fired ladle preheater, identified as LP #5a, approved for construction in 2007, with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(D) One (1) natural gas-fired ladle preheater, identified as LP #6, approved for construction in 2006, with a heat input capacity of 12 MMBtu/hour, utilizing low-NOx burners, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(E) One (1) natural gas-fired ladle preheater/dryer, identified as LD-1, approved for modification in 2007, with a heat input capacity of 10 MMBtu/hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8 or the Meltshop baghouses.

(2a) Ladle Dryer, identified as LDS #1, constructed in 1989 and approved in 2011 for replacement, consisting of a low NOx natural gas fired burner, with a heat input capacity of 5 MMBtu per hour. Emissions are uncontrolled and exhausting to stack 12 or the Meltshop baghouses.

(2b) One (1) natural gas-fired Ladle Dryer, identified as LDS #1a, approved for construction in 2007 and approved in 2011 for replacement, with a heat input capacity of 5 MMBtu per hour, with uncontrolled emissions exhausting to stack S-12 or the Meltshop baghouses.

(2c) Ladle Dryer, identified as LDS #1, constructed in 1989, consisting of a low NOx natural gas fired burner, with a heat input capacity of 5 MMBtu per hour using propane as a backup fuel. Emissions are uncontrolled and exhausting to stack 12. or the Meltshop baghouses

(2d) One (1) natural gas-fired Ladle Dryer, identified as LDS #1a, approved for construction in 2007, with a heat input capacity of 5 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-12.

(3) Five (5) Tundish Preheaters, identified as TP1 - TP5, approved in 2013 for modification, to increase their heat input from 6 MMBtu per hour to 12 MMBtu per hour each. Constructed in 1995, each with a heat input capacity of 6 MMBtu per hour, using propane as a backup fuel.

(4) Two (2) Tundish Dryout Stations, identified as TD #1 and TD #2. TD #1 was constructed in 1989, and TD#2 was constructed in 1990, each with a heat input capacity of 9 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(5) Eight (8) Tundish Nozzle Preheaters, identified as TNP #1-#8. Four (4) were constructed in 1995 and four (4) were constructed through the years and were

permitted in 2013, consisting of a low NOx natural gas fired Preheaters, each with a heat input capacity of 0.8 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(6) One (1) natural gas-fired tundish dryout station, identified as TD #3, approved for construction in 2007, with a maximum heat input capacity of 2.4 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(7) Two (2) natural gas-fired mandrel dryers, identified as MD #1 and MD #2, approved for construction in 2007, each with a heat input capacity of 1.5 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(8) Fifteen (15) belt conveyors and 20 weight hoppers, with a maximum throughput of 200 tons per hour, approved for construction in 2007. These conveyors will supply lime, carbon and alloys to the new LMF EU-13(c)).

(9) Flux and alloy material handling system for direct feeding of alloys, lime, carbon, scrap substitutes and other related materials to the LMFs, constructed in 1988 and approved for modification in 2007 with the addition of a three-sided building for bulk loading of material to the system.

(10) Two (2) natural gas-fired Ladle Warmer Burners, identified as LWB #1 and LWB #2, approved in 2011 for construction, each with a maximum heat input capacity of 3 MMBtu/hr to warm ladles at the Melt Shop.

D.30 – INSIGNIFICANT ACTIVITIES – MELTSHOP (See Condition A.4)

D.31 – Steel Technologies Operations

(a) Slitting operations, 1/4 inch slitter line which includes two (2) shears and one (1) edge trimmer, constructed in 1994; and 1/2 inch slitter line which includes two (2) shears and one (1) edge trimmer, constructed in 2003 both lines re-permitted under Nucor Steel in 2008, each with a maximum design capacity of 300,000 pounds of hot rolled steel coils per hour.

(b) Six (6) natural gas-fired air heaters, with each has a maximum heat input capacity of 0.8 MMBtu/hr, constructed in 1994 and re-permitted under Nucor Steel in 2008.

(d) One (1) leveler/straightener line, permitted for construction in 2009, controlled by one (1) baghouse, AC-01 with maximum design air flow rate of 10,000 actual cubic feet per minute (acfm), exhausting into the atmosphere.

(e) One (1) Cleaner with a mist eliminator for the Leveler/Straightener, with four (4) natural gas-fired burners at maximum total heat input rate of 14 MMBtu/hr approved in 2012 for construction.

D.32 - Direct Reduced Iron (DRI) Handling System

(a) Rail Unload Hopper, identified as HP1, approved in 2012 for construction, with a designed capacity of 400 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(b) Vibratory Screening Feeder, identified as VF1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(c) Rail Unload Fines Drag Conveyor, identified as DC1, approved in 2012 for construction, with a designed capacity of 10 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(d) Rail Unload Fines Bagging Station, identified as BS1, approved in 2012 for construction, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly, including the following:

(1) BS1 Hopper, identified as HP2, with a designed capacity of 10 tons.

(2) BS1 Bagging Screw, identified as SC5, with a designed capacity of 15 tons per hour.

(e) Rail Unload Bucket Elevator, identified as BE1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(f) Two (2) Recirculating Conveyors, identified as SC1 and SC2, approved in 2012 for construction, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(g) Discharge Diverter, identified as DV1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(h) Hot Material Discharge Chute, identified as CH1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, exhausting uncontrolled to the atmosphere.

(i) Rail Unload Belt Conveyor, identified as BC1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(j) Discharge Diverter, identified as DV2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(k) Silo Loading Belt Conveyor, identified as BC2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(l) Iron Carbide Silo, identified as ICS1, constructed in 1994 and approved in 2012 for modification, with a designed capacity of 250 tons per hour and a designed storage capacity of 3585 tons, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(m) Vibratory Screening Feeder, identified as VF2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(n) Silo Fines Bagging Station, identified as BS2, approved in 2012 for construction, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly, including the following:

(1) BS2 Hopper, identified as HP3, with a designed capacity of 4 tons.

(2) BS2 Bagging Screw, identified as SC6, with a designed capacity of 4 tons per hour.

(o) Silo Bucket Elevator, identified as BE2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(p) Two (2) Recirculating Conveyors, identified as SC3 and SC4, approved in 2012 for construction, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(q) Discharge Diverter, identified as DV3, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(r) Hot Material Discharge Chute, identified as CH2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, exhausting uncontrolled to the atmosphere.

(s) Silo Unloading Belt Conveyor, identified as BC3, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(t) Day Bin, identified as DB1, approved in 2012 for construction, with a designed capacity of 250 tons per hour and a designed storage capacity of 200 tons, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(u) Weigh Belt Feeder, identified as WB1, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(v) South Scrap Bay Belt Conveyor, identified as BC4, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(w) South Furnace Belt Conveyor, identified as BC10, constructed in 2005 and approved in 2012 for modification, with a designed capacity of 265 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(x) Weigh Belt Feeder, identified as WB2, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(y) North Scrap Bay Belt Conveyor, identified as BC5, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(z) Belt Conveyor, identified as BC7, constructed in 2005 and approved in 2012 for modification, with a designed capacity of 265 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(aa) North Furnace Belt Conveyor, identified as BC9, constructed in 2005 and approved in 2012 for modification, with a designed capacity of 265 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)] [326 IAC 2-7-5(14)]

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

D.5 – INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS

(a) Raw materials handling/storage, including silos which contain the following materials:

(1) One (1) lime silo TFS-1.

(2) One (1) Iron Oxide Silo (IOS #1).

(3) Three (3) Baghouse Dust Silos (BHS#1, BHS#2, BHS#3).

(4) One (1) Lime Silo (#1 SEAF).

(5) One (1) Lime Silo (#2 SEAF).

(6) One (1) Lime Silo (#3 NEAF).

(7) One (1) Lime Silo (#4 NEAF).

(8) One (1) Injection Carbon Silo #1, with bin vent filter and capacity of 3,625 cubic feet, permitted in 2010 for construction.

(9) One (1) Injection Carbon Silo #2, approved in 2013 for replacement

(10) One (1) Charge Carbon Silo #1, approved in 2013 for replacement

(11) One (1) Charge Carbon Silo #2, approved in 2013 for replacement

(12) Three (3) AOD alloy system silos (AOD#1, AOD#2, and AOD#3).

(13) Ten (10) Melt Shop Alloy Feed System silos (MS alloy #1, MS alloy #2, MS alloy #3, MS alloy #4, MS alloy #5, MS alloy #6, MS alloy #7, MS alloy #8, MS alloy #9, MS alloy #10).

D.6 – INSIGNIFICANT ACTIVITIES – CASTRIP – COILERS, COIL CUTTING, AND HOT ROLLING STAND

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(b) Two (2) coilers, identified as C-1 and C-2, constructed in 2002. Fugitive particulate emissions from this process are controlled by the application of water to the coilers and exhausting to the roof monitor S-21. These coil the steel strip from the continuous strip caster.

(c) Scrap coil cutting in the Castrip area, identified as CC-1, constructed in 2002, occurs on an as needed basis, performed indoors and exhausted to general ventilation that is controlled by the Castrip LMS Baghouse and exhausting to stack S-20.

(d) One (1) hot rolling stand, identified as HRS #1, constructed in 2002. This stand rolls the steel strip from the continuous strip caster to the desired gauge. Fugitive particulate emissions controlled by the application of water to the steel strip, and exhausting to the LMS roof monitor identified as S-21.

D.9 – INSIGNIFICANT ACTIVITIES – PAVED AND UNPAVED ROADS

(e) Paved and unpaved roads and parking lots with public access. Transport on new and existing paved roadways and parking lots, unpaved roadways, and unpaved areas around existing raw material storage piles.

D.11 - INSIGNIFICANT ACTIVITIES – COOLING TOWERS

(a) One (1) Non-Contact Cooling Tower, identified as CT-91A, approved in 2010 for construction, with an average capacity of 900 gallons per minute (gpm), located at LINDE GASES PLANT.

D. 12 – INSIGNIFICANT ACTIVITIES – SCRAP HANDLING AND PROCESSING

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(f) Cutting of scrap metals and scrap substitutes. Except as authorized in Condition D.12.1(c) of this permit cutting of certain types of scrap should be performed indoors and exhaust to general ventilation.

Outdoor unloading/ loading/sorting of scrap metal and scrap substitutes including pig iron. DRI, HBI and iron carbide

D.14 – INSIGNIFICANT ACTIVITIES – FUEL DISPENSING FACILITIES

(g) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles or other mobile equipment, having a storage capacity less than or equal to 10,500 gallons.

A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day, or less.

(1) One (1) 10,000 gallon diesel storage tank, handling less than 3,000 gallons per day.

(2) One (1) 1,000 gallon diesel storage tank handling less than 500 gallons per day.

(3) One (1) 500 gallon diesel storage tank, located at the Steel Technologies Plant.

(4) One (1) 1,000 gallon diesel storage tank handling less than 500 gallons per day, installed in 2003.

D.20 – INSIGNIFICANT ACTIVITIES – COLD MILL – QUALITY CONTROL/REWIND INSPECTION LINE

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(h) The unwinding and rewinding of steel coil for quality control inspections and the Cold Mill Quality Control Furnace.

D.23 – INSIGNIFICANT ACTIVITIES – WELDING

(i) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment including the galvanizing line welder.

(j) Structural steel and bridge fabrication activities using 80 tons or less of welding consumables.

D.24 – INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SHEARS AND SIDE TRIMMERS

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(k) Various shears located at various sites throughout the facility.

(l) Side trimmers located at various sites throughout the facility.

D.27 – INSIGNIFICANT ACTIVITIES – DEGREASING

(m) Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21) consisting of: Degreasing operations, identified as DG, with a maximum throughput greater than 145 gallons per 12 months, uncontrolled and exhausting to the atmosphere.

D.30 – INSIGNIFICANT ACTIVITIES – MELTSHOP

(n) Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(1) Ladle tap hole cleaning and repair.

(2) Ladle/tundish refractory application and curing.

(3) Tundish dumping.

(4) Ladle dumping.

(5) Ladle/tundish refractory loading and removal.

INSIGNIFICANT ACTIVITIES

(o) Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21) consisting of:

(1) Carbon dioxide (CO_2) injection of storm water runoff for control of pH.

(2) Application of CO_2 gas for quality control at the Castrip casting cassette.

INSIGNIFICANT ACTIVITIES LIST - Facility Wide

(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 each.
(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 each.

(b) Equipment powered by diesel fuel fired or natural gas fired internal combustion engines of capacity equal to or less than five hundred thousand (500,000) British thermal units per hour except where total capacity of equipment operated by one (1) stationary source as defined by subdivision (38) exceeds two million (2,000,000) British thermal units per hour.

(c) Combustion source flame safety purging on startup.

(d) Fuel dispensing activities, including the following:

(i) A gasoline fuel transfer dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day and filling storage tanks having a capacity equal to or less than ten thousand five hundred (10,500) gallons. Such storage tanks may be in a fixed location or on mobile equipment.
(ii) A petroleum fuel other than gasoline dispensing facilities, having storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day or less. A petroleum fuel, other than gasoline, dispensing facility having a storage capacity less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month.

(e) 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.

(f) Refractory storage not requiring air pollution control equipment.

(g) Equipment used exclusively for filling drums, pails, or other packaging containers with the following: lubricating oils, waxes, and greases.

(h) Application of: oils, greases, lubricants, and nonvolatile material, as temporary protective coatings.

(i) Machining where an aqueous cutting coolant continuously floods the machining interface.

(j) Closed loop heating and cooling systems.

(k) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume.

(l) Any operation using aqueous solutions containing less than 1% by weight of VOCs, excluding HAPs.

(m) Activities associated with the transportation and treatment of sanitary sewage, provided discharge to the treatment plant is under the control of the owner or operator, that is, an on-site sewage treatment facility.

(n) Any operation using aqueous solutions containing less than or equal to one percent (1%) by weight of VOCs excluding HAPs.

(o) Noncontact cooling tower systems with the following: forced and induced draft cooling tower system not regulated under a NESHAP.

(p) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(q) Heat exchanger cleaning and repair.

(r) Process vessel degassing and cleaning to prepare for internal repairs.

(s) Covered conveyors for solid raw material, including the following:

(i) Coal or coke conveying of less than or equal to three hundred sixty (360) tons per day.
(ii) 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.

(t) Purging of gas lines and vessels that is related to routine 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.

(u) 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.

(v) Blow down for any of the following: sight glass, boiler, compressors, pumps, and cooling tower.

(w) Activities associated with emergencies, including the following:

(i) On-site fir training approved by the Department.
(ii) Emergency generators as follows: gasoline generators not exceeding one hundred ten (110) horsepower and diesel generators not exceeding one thousand six hundred (1600) horsepower.
(iii) Stationary fire pump engines.

(x) A laboratory as defined in 326 IAC 2-7-1(21)(D)

(y) Brazing equipment, cutting torches, soldering equipment, and welding equipment related to manufacturing activities not resulting in emissions of HAPs.

(z) Portable blast cleaning equipment with enclosures.

(aa) Indoor and outdoor kerosene heaters.

(bb) Rolling oil recovery systems.

(cc) Activities associated with general construction activities not related to the construction of an air emission unit.

(dd) Activities associated with the repair and maintenance of paved and unpaved roads, including paving or sealing, or both, of parking lots and roadways.

(ee) Painting, including interior and exterior painting of buildings, and solvent use excluding degreasing operations utilizing halogenated organic solvents.

(ff) Batteries and battery charging stations.

(gg) Lubrication, including: (1) hand-held spray can lubrication; (2) dipping Metal parts into lubricating oil; or (3) manual or automated addition of cutting oil in machining operations.

(hh) Nonasbestos insulation installation or removal.

(ii) Instrument air dryer and filter maintenance.

(jj) Using 80 tons or less of welding consumables per year.

(kk) Farm operations.

(ll) Equipment used for quality control/ quality assurance purposes.

(mm) Construction and demolition operations.

(nn) Use of hand held torches and lances.

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

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

(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, T107-30293-00038, 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][IC 13-17-12]

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

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

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

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

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. 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) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

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

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(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.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(c) 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. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

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

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

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

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

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

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

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 T107-30293-00038 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 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 Operating 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 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 does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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.18 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 or notice 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) 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.19 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) or (c) 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)(1) and (c)(1). 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) and (c)(1).

(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(37)) 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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.20 Source Modification Requièrent [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

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

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

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 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 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

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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.23 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.24 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 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 5-1-1 (Applicability) and 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.

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

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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 the attached plan as in Attachment A. The provisions of 326 IAC 6-5 are not federally enforceable.

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]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications 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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

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

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

(a) For performance testing required by this permit, 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not 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 not later than five (5) days prior to the end of the initial forty-five (45) day period.

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)][40 CFR 64][326 IAC 3-8]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) For monitoring required by CAM, at all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(d) For monitoring required by CAM, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

C.12 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment.

(b) In the event that a breakdown of a continuous emission monitoring system occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(c) Unless otherwise provided by a rule or in a D Section of this permit, whenever a continuous emission monitor other than an opacity monitor is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, a calibrated backup CEMS shall be brought online within four (4) hours of shutdown of the primary CEMS, and shall be operated until such time as the primary CEMS is back in operation.

(d) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 36 IAC 2-2.

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. The analog instrument shall be capable of measuring values outside of the normal range.

(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 shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(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(11)][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 [40 CFR 64][326 IAC 3-8][326 IAC 2-7-5][326 IAC 2-7-6]

(l) Upon detecting an excursion where a response step is required by the D Section, or an exceedance of a limitation, not subject to CAM, in this permit:

(a) The Permittee shall take reasonable response steps to 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 excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning 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 normal or usual manner of operation.

(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; and/or

(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 record the reasonable response steps taken.

(II)

(a) CAM *Response to excursions or exceedances.*

(1) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the 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. 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). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or 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.

(2) 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, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(b) If the Permittee identifies a failure to achieve compliance with an emission limitation, subject to CAM, or standard, subject to CAM, for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the IDEM, OAQ and, if necessary, submit a proposed significant permit modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a Quality Improvement Plan (QIP). The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

(d) Elements of a QIP:
The Permittee shall maintain a written QIP, if required, and have it available for inspection. The plan shall conform to 40 CFR 64.8 b (2).

(e) If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the IDEM, OAQ if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(f) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(c) of this condition the EPA or the IDEM, OAQ may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:

(1) Failed to address the cause of the control device performance problems; or

(2) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(g) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

(h) *CAM recordkeeping requirements.*

(1) The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to paragraph (II)(c) of this condition and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this condition (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

(2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements

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 - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) 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 require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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]

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by 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(33) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

(a) Records of all required monitoring data, reports 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. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

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, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) 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(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) 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(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(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 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) 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(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), 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][326 IAC 2-3][40 CFR 64][326 IAC 3-8]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response

steps taken must be reported except that 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. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

On and after the date by which the Permittee must use monitoring that meets the requirements of 40 CFR Part 64 and 326 IAC 3-8, the Permittee shall submit CAM reports to the IDEM, OAQ.

A report for monitoring under 40 CFR Part 64 and 326 IAC 3-8 shall include, at a minimum, the information required under paragraph (a) of this condition and the following information, as applicable:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(3) A description of the actions taken to implement a QIP during the reporting period as specified in Section C-Response to Excursions or Exceedances. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

The Permittee may combine the Quarterly Deviation and Compliance Monitoring Report and a report pursuant to 40 CFR 64 and 326 IAC 3-8.

(b) The address for report submittal is:

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) Reporting periods are based on calendar 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.

(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1 (oo) and/or 326 IAC 2-3-1 (jj)) 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- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (ww) and/or 326 IAC 2-3-1 (pp), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(f) The report for project at an existing emissions unit shall be submitted no later than 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 - 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 wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

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

(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- 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 applicable standards for recycling and emissions reduction.

SECTION D.0 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description: Entire Source

CASTRIP – VACUUM DEGASSER AND FLARE

(a) One (1) vacuum degasser with process gas lances, identified as V #1, constructed in 2004, approved in 2006 for modification, a maximum capacity of 270 tons of steel/hour, approved in 2012 to replace the closed flare with an open flare, and exhausting to Stack 500. This vacuum degasser removes entrained gases from the steel, decarburizes and desulfurizes the steel. The flare has two (2) pilot lights each with a maximum heat input capacity of 0.2 MMBtu/hour, uses natural gas as its primary fuel with propane as back up fuel. The flare only operates when the vacuum degasser is under negative pressure (i.e., when CO must be controlled).

This Castrip VTD can receive liquid steel from the Meltshop LMFs or EAFs or AOD or the Castrip LMS-2.

CASTRIP – LMS, TUNDISH, AND CONTINUOUS STRIP CASTER (SECTION D.4)

(k) A strip caster line rated at a maximum steel production rate of 270 tons per hour consisting of:

(1) One (1) ladle metallurgy station, identified as LMS-2, constructed in 2002, approved in 2006 for modification, approved in 2013 for modification by adding a second ladle access to the LMS (only one ladle can operate at a time), with a maximum production capacity of 270 tons of steel per hour, and emissions captured by a side draft hood that has a PM capture efficiency of 99 percent and controlled by the LMS-2 baghouse, and exhausting to the LMS-2 baghouse stack identified as S-20. The remaining uncontrolled emissions shall be exhausted through the LMS-2 roof monitor identified as S-21. The LMS-2 baghouse has an enclosed dust handling system or equivalent for material recovery and particulate matter control

This LMS-2 receives liquid steel from the Castrip VTD or Meltshop LMFs, or EAFs or AOD. It can process heats and return them to the CASTRIP or the Meltshop for casting.

(3) One (1) continuous strip caster, identified as CS-1, constructed in 2002, approved in 2006 for modification, approved in 2013 for modification to allow casting a wider strip of steel, with a maximum capacity of 270 tons of steel per hour, and emissions captured by a canopy hood that has a PM capture efficiency of 98 percent. The captured PM in the gas stream shall be controlled by the LMS-2 baghouse and the gas stream shall be exhausted though the LMS-2 baghouse stack identified as S-20. The remaining uncontrolled emissions shall be exhausted through the LMS-2 roof monitor identified as S-21.

This Castrip Caster CS-1 receives liquid steel from the Castrip VTD or Castrip LMS-2 or Meltshop LMFs or EAFs or AOD.

HOT STRIP MILL & TUNNEL FURNACE SYSTEM (SECTION D.25)

(jj) Tunnel Furnace System, identified as EU-02, constructed in 1989, approved in 2013 for modification to allow processing of wider strip of steel, with a maximum capacity of 502 tons/hour, with a maximum total heat input capacity of 132 MMBtu per hour, emissions uncontrolled, tunnel furnace 1 exhausts to stack S13 and S14, tunnel furnace 2 exhausts to stack S15, and consisting of:

(1) Tunnel Furnace 1 – Natural gas fired with a heat input capacity of 84 MMBtu per hour.

Tunnel Furnace 1 was constructed in 1989 as part of the original Tunnel Furnace System and approved in 2012 to replace burners from 84 MMBtu/hr to 50 MMBtu/hr, approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel

(2) Tunnel Furnace 2 – Natural gas fired with a heat input capacity of 84 MMBtu per hour. Tunnel Furnace 2 was constructed in 1994 and approved in 2012 to replace burners from 84 MMBtu/hr to 50 MMBtu/hr, approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

(4) Snub Furnace – Natural gas fired with a heat input capacity of 6 MMBtu per hour. The snub furnace was constructed in 1989 and modified in 1994, approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

MELTSHOP - ELECTRIC ARC FURNACES, ARGON OXYGEN DECARBURIZATION (AOD) VESSELS, DESULFURIZATION, CONTINUOUS CASTERS, EAF DUST TREATMENT FACILITY (SECTION D.29)

(nn) (4) Both the Meltshop Baghouse1 and Meltshop Baghouse2 capture the emissions from the Meltshop EAFs, AOD vessel, Desulfurization, Meltshop Continuous Casters, the three (3) Ladle Metallurgy Furnaces (EU-13 (a), EU-13 (b) and EU-13 (c))), LD#1, LDS#1 and LDS#1a and other miscellaneous sources. Each Meltshop Baghouse can sufficiently control emissions independently.

(A) The Meltshop Baghouse1 is a multi compartment positive pressure baghouse, has a design air flow rate of 1,527,960 actual cubic foot/min (acf/min) and an outlet PM loading of 0.0018 grains/dry standard cubic foot (gr/dscf). This Meltshop Baghouse1 exhausts to a stack identified as vent BH1.

(B) The Meltshop Baghouse2 is a multi compartment positive pressure baghouse, has a design flow rate of 915,000 dscf/min and 1,200,000 acf/min and an outlet PM loading of 0.0018 gr/dscf. This Meltshop Baghouse2 exhausts to a stack identified as BH2.

A continuous emission monitor (CEM) for CO2 is used to monitor CO2 emissions from each Meltshop Baghouse

(ss) (3) Five (5) Tundish Preheaters, identified as TP1 - TP5, constructed in 1995, each with a heat input capacity of 6 MMBtu per hour, using propane as a backup fuel. Approved in 2013 for modification to increase their heat input from six (6) MMBtu per hour to twelve (12) MMBtu per hour each.

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

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

D.0.1 Prevention of Significant Deterioration (PSD) Best Available Control Technology (BACT) Limits [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD/SSM 107-32615-00038, the Permittee shall comply with the following BACT requirements for Greenhouse Gases:

(a) Combustion emission units where fuel type is specified by this condition of this permit shall use the specified fuel, including any approved backup as appropriate. Other combustion sources not specifically addressed by this permit shall use the primary and backup fuels for which they are designed.

(b) The total Greenhouse GHG (COe2) emissions from the modified meltshop, Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2, Tunnel Furnace Snub, and the Castrip/strip caster line ladle metallurgy station (LMS-2) and Castrip Vacuum Tank Degasser (VTD) shall not exceed 544,917 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

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

D.0.2 GHG (CO2e) Continuous Emission Rate Monitoring Requirements (CEMS) [326 IAC 3-5]

Compliance with the GHG BACT emissions limit in Condition D.0.1 shall be calculated as follows:

CO2e emissions (tons/month) =
CO2 emissions from Meltshop Baghouses 1 and 2 using CO2 CEMS readings +
CO2e emissions from Modified Meltshop (EAFs and AOD) Natural Gas Usage for CH4 and N2O +
CO2e emissions calculated from the total Natural Gas usage (from Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2 and Tunnel Furnace Snub) +
CO2e emissions calculated from the total Propane usage (from Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2 and Tunnel Furnace Snub) +
CO2 emissions from VTD (carbon in - carbon out) and LMS-2 (carbon in- carbon -out) mass balance

where:
Fuel CO2e (tons/month) = (CO2 potential x CO2 GWP (1) + N2O potential x N2O GWP (310) + CH4 potential x CH4 GWP (21)

CO2e natural gas (tons/month) = N. G. usage (MMCF/month) x CO2 n.g. Emission Factor (lb/MMCF) x CO2 GWP(1) + N2O x N2O GWP (310) + CH4 x CH4 GWP (21)

CO2e propane (tons/month) = propane usage (kgal/month) x CO2 propane Emission Factor (lb/kgal) x CO2 GWP(1) + N2O x N2O GWP (310) + CH4 x CH4 GWP (21)

CO2 Emission Factor from Table C-1 to Subpart C of Part 98—Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel (eff. July 1, 2013).

CH4 and N2O Emission Factor fromTable C-2 to Subpart C of Part 98—Default CH_4 and N_2 O Emission Factors for Various Types of Fuel (eff. July 1, 2013).

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A (eff. July 1, 2013).

D.0.3 CO2 Continuous Emission Rate Monitoring Requirement [326 IAC 2-2][326 IAC 3-5]

(a) The Permittee shall prepare and submit to IDEM, OAQ a written report of the results of the linearity checks or relative accuracy test audits as applicable for each calendar quarter within thirty (30) calendar days after the end of each quarter for the linearity checks and within forty-five (45) days after completion of the test for relative accuracy test audits. The report must contain the information required by 326 IAC 3-5-5(e)(2).

(b) The Permittee shall record the output of the systems in pounds per hour and shall perform the required record keeping and reporting, pursuant to 326 IAC 3-5-6 and 326 IAC 3-5-7.

(c) The Permittee shall calibrate, certify, operate, and maintain a continuous emission monitoring system (CEMS) for measuring CO2 emissions rates from the Meltshop Baghouses 1 and 2 in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.

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

D.0.4 Maintenance of CEMS [326 IAC 2-7-5(3)(A)(iii)]

(a) In the event that a breakdown of the CO2 continuous emission monitoring systems (CEMS) occurs, the Permittee shall maintain records of all CEMS malfunctions, out of control periods, calibration and adjustment activities, and repair or maintenance activities.

(b) The continuous emissions monitoring system (CEMS) shall be operated at all times the emissions unit or process is operating except for reasonable periods of monitor system downtime due to necessary calibration or maintenance activities or malfunctions. Calibration and maintenance activities shall be conducted pursuant to the standard operating procedures under 326 IAC 3-5-4(a).

(c) Except as otherwise provided by a rule or provided specifically in this permit, whenever a continuous emission monitor system (CEMS) is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, the Permittee shall perform supplemental monitoring by using calibrated handheld monitors to measure the CO2 emissions on a once per shift basis, unless the CEMS operation is restored prior to the end of the shift.

The handheld monitors shall be approved by the IDEM, OAQ.

(d) The Permittee shall keep records in accordance with 326 IAC 3-5-6(b) that includes the following:

(1) All documentation relating to:

(A) design, installation, and testing of all elements of the monitoring system; and

(B) required corrective action or compliance plan activities.

(2) All maintenance logs, calibration checks, and other required quality assurance activities.

(3) All records of corrective and preventive action.

(4) A log of EAF System operations, including the following:

(A) Date of facility downtime.

(B) Time of commencement and completion of each downtime.

(C) Reason for each downtime.

(e) The Permittee shall keep records that describe the supplemental monitoring implemented during the downtime to assure compliance with applicable emission limitations.

(f) In accordance with 326 IAC 3-5-7(5), the Permittee shall submit reports of continuous monitoring system instrument downtime, except for zero (0) and span checks, which shall be reported separately.

The reports shall include the following:

(1) Date of downtime.

(2) Time of commencement.

(3) Duration of each downtime.

(4) Reasons for each downtime.

(5) Nature of system repairs and adjustments.

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

D.0.5 Record Keeping Requirements

To document the compliance status with Condition D.0.1, the Permittee shall maintain records of the following information:

(a) Readings of the GHG CEMS in parts per million (ppm), and converted to tons per month.

(b) Amount and type of each fuel usage monthly from the Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2 and Tunnel Furnace Snub.

(c) Amount of carbon contained in the liquid steel input to LMS-2 and the amount of carbon output from the LMS-2 in tons/month; or

Amount of carbon input to the VTD and the amount of carbon output from the VTD in tons/month.

(d) Amount of natural gas usage monthly from modified Meltshop (EAFs and AOD).

(e) Monthly records of the CO2e emissions.

(f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.0.6 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.0.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the definition of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.1 FACILITY OPERATION CONDITIONS

Emission Unit Description:

CASTRIP – VACUUM DEGASSER AND FLARE

(a) One (1) vacuum degasser with process gas lances, identified as V #1, constructed in 2004, approved in 2006 for modification, a maximum capacity of 270 tons of steel/hour, approved in 2012 to replace the closed flare with an open flare, and exhausting to Stack 500. This vacuum degasser removes entrained gases from the steel, decarburizes and desulfurizes the steel. The flare has two (2) pilot lights each with a maximum heat input capacity of 0.2 MMBtu/hour, uses natural gas as its primary fuel with propane as back up fuel. The flare only operates when the vacuum degasser is under negative pressure (i.e., when CO must be controlled).

This Castrip VTD can receive liquid steel from the Meltshop LMFs or EAFs or AOD or the Castrip LMS-2.

(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 Vacuum Degasser PSD BACT Limits [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

(a) The carbon monoxide (CO) emissions from the vacuum degasser shall be controlled by a flare that uses natural gas as primary fuel, and propane as back up fuel.

(b) The carbon monoxide (CO) emissions from the vacuum degasser shall not exceed 0.075 pounds per ton of steel processed at the VTD, and 20.25 pounds per hour, based on a 3-hour block average.

(c) The sulfur dioxide (SO2) emissions from the vacuum degasser shall not exceed 0.022 pounds per ton of steel processed at the VTD, and 5.4 pounds per hour, based on a 3-hour block average.

(d) The nitrogen oxides (NOx) emissions from the vacuum degasser shall not exceed 0.0055 pounds per ton of steel processed at the VTD, and 1.35 pounds per hour, based on a 3-hour block average.

(e) The volatile organic compound (VOC) emissions from the vacuum degasser shall not exceed 0.005 pounds per ton of steel processed at the VTD, and 1.35 pounds per hour, based on a 3-hour block average.

(f) The PM/PM10 (filterable plus condensable) emissions from the vacuum degasser shall not exceed 0.008 grain per dry standard cubic foot, and 0.45 pounds per hour, based on a 3-hour block average.

(g) The opacity from the vacuum degasser enclosed flare stack (Stack 500) shall not exceed three percent (3%) opacity, based on a six-minute average.

D.1.2 Operational Flexibility – PSD Requirements [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee may operate the vacuum degasser as follows:

(a) The gases can be removed from the steel after the steel has gone through the Castrip Ladle Metallurgical Station (LMS-2), or

(b) The gases can be removed from the steel before the steel goes through the Castrip Ladle Metallurgical Station (LMS-2), or

(c) The gases can be removed from the steel and the steel sent back to the Meltshop Continuous Casters for casting, or

(d) The steel may bypass the vacuum degassing process.

D.1.3 Flare PSD BACT Limits [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

(a) The 0.4 million British Thermal Unit per hour (MMBTU/hour) pilot lights for the open flare shall use natural gas as primary fuel and propane as back up fuel.

(b) The collateral nitrogen oxide (NO_x) emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.10 pounds per MMBTU. The NOx emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.005 pounds per ton of steel, and 0.675 pounds per hour, based on a 3-hour block average.

(c) The collateral sulfur dioxide (SO_2) emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.0006 pounds per MMBTU. The SO_2 emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.02 pounds per ton of steel, and 2.7 pounds per hour, based on a 3-hour block average.

(d) The collateral carbon monoxide (CO) emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.084 pounds per MMBTU. The CO emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.075 pounds per ton of steel, and 10.125 pounds per hour, based on a 3-hour block average.

(e) The collateral volatile organic compound (VOC) emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.0055 pounds per MMBTU. The VOC emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.005 pounds per ton of steel, and 0.675 pounds per hour, based on a 3-hour block average.

(f) The opacity from the vacuum degasser stack (500) shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9). This limitation satisfies the opacity limitations required by 326 IAC 5-1 (Opacity Limitations).

(g) The collateral PM/PM_{10} (filterable plus condensable) emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.0076 pounds per MMBTU. The PM/PM_{10} emissions from the 0.4 MMBTU/hour pilot lights for the flare shall not exceed 0.008 grain per dry standard cubic foot, and 0.45 pounds per hour, based on a 3-hour block average.

D.1.4 Preventive Maintenance Plan (PMP) [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan is required for the vacuum degasser and its associated control device, a flare. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.1.5 Control Equipment Operation [326 IAC 2-2]

Pursuant to PSD SSM 107-21359-00038, issued April 27, 2006, the flare shall be in operation and control carbon monoxide (CO) emissions at all times when the vacuum degasser is under negative pressure.

D.1.6 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11][326 IAC 2-2]

Within sixty (60) days after achieving maximum capacity but no later than one hundred eighty (180) days after startup of the new open flare, the Permittee shall conduct performance tests to measure the gas stream flow rate to the flare, sample and determine the heating value (Btu content) of the gas streams, including visible emissions using Method 22, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. The flare does not require repeat testing.

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

D.1.7 Flare Operating Parameters [40 CFR Part 64][326 IAC 2-7-5][326 IAC 2-7-6]

(a) The flare for the carbon monoxide (CO) emissions reductions shall be operated with a flame present at all times when the vacuum degasser is under negative pressure.

(b) The presence of a flare pilot flame shall be monitored when the vacuum degasser is under negative pressure using a thermocouple or any equivalent device to detect the presence of the flame.

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

D.1.8 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) The Permittee shall maintain records of testing performed pursuant to D.1.6 and records documenting that the flare was operated at all times when the vacuum degasser was under negative pressure to demonstrate compliance with D.1.7 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.2 FACILITY OPERATION CONDITIONS

Emission Unit Description:

CASTRIP – LOW NOx BOILER

(b) One (1) natural gas fueled low-NO_x boiler, identified as Boiler ID No. 501, constructed in 2004, a heat input capacity of 71.04 MMBtu/hour, utilizing low-NOx burners, and exhausting to Stack 501. This boiler provides steam to the vacuum degasser. Propane will be used as back up fuel.

Under 40 CFR Part 60, Subpart Dc, this unit is considered a steam generating unit.

(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 Boiler ID No. 501 PSD BACT Limits [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee shall comply with the following Best Available Control Technology (BACT) requirements for Boiler ID No. 501:

(a) Boiler ID No. 501 shall use natural gas as primary fuel and propane as backup fuel.

(b) The nitrogen oxides (NOx) emissions from Boiler ID No. 501 shall not exceed 0.035 pounds per MMBtu.

(c) The carbon monoxide (CO) emissions from Boiler ID No. 501 shall not exceed 0.061 pounds per MMBtu.

(d) The volatile organic compound (VOC) emissions from Boiler ID No. 501 shall not exceed 0.0026 pounds per MMBtu.

(e) The sulfur dioxide (SO2) emissions from Boiler ID No. 501 shall not exceed 0.0006 pounds per MMBtu.

(f) The PM/PM10 (filterable and condensable) emissions from Boiler ID No. 501 shall not exceed 0.0076 pounds per MMBtu.

D.2.2 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the PM emissions from Boiler ID No. 501 shall be limited to 0.30 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = 1.09 / Q^{0.26}$$

where Pt = Pounds of PM emitted per million Btu (lb/MMBtu) heat input, and
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu per hour) heat input.

(Q = 34.0 + 15.0 + 9.0 + 9.98 + 71.0 = 139.02)

D.2.3 Preventive Maintenance Plan (PMP) [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP), in accordance with Section B – Preventive Maintenance Plan (PMP) of this permit, is required for Boiler ID No. 501.

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

D.2.4 Low NOx Burners [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee shall equip and operate Boiler ID No. 501 with natural gas fueled low NOx burners and perform good combustion practices.

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

D.2.5 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) Pursuant to 40 CFR Part 60, Subpart Dc, the Permittee shall keep records of fuel used each calendar month by Boiler ID No. 501, including the types of fuel and amount used.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition

SECTION D.3 FACILITY OPERATION CONDITIONS

Emission Unit Description:
CASTRIP – PREHEATERS, DRYERS, AND ALLOY UNLOADING

(c) One (1) natural gas fueled ladle preheater, identified as LP-3, constructed in 2004, to be modified in 2006, with a heat input capacity of 12 MMBtu/hour utilizing low NOx burners, emissions uncontrolled, and exhausting to a roof monitor (S-21, also identified as 105,106). Propane will be used as back up fuel.

(d) Two (2) natural gas-fired ladle preheaters, identified as LP-1 and LP-2, each constructed in 2002, to be modified in 2006, with a heat input capacity of 12 MMBtu/hour each, utilizing low-NOx burners, and the capability to utilize propane as a backup fuel. The preheaters exhaust to roof monitor S-21.

(e) Two (2) natural gas-fired tundish preheaters, identified as TP-1 and TP-2, constructed in 2002, to be modified in 2006, with a heat input capacity of 10 MMBtu per hour each, utilizing oxy-fuel burners, and have the capability to utilize propane as a backup fuel. Emissions exhaust to LMS baghouse stack S-20.

(f) Two (2) natural gas-fired tundish nozzle preheaters identified as TNP-1 and TNP-2, to be modified in 2006. Each tundish nozzle preheater shall be equipped with low-NOx burners, shall not exceed a maximum heat input rate of 2 MMBtu per hour, and has the capability to utilize propane as a backup fuel. Combustion emissions exhaust to the LMS baghouse stack identified as S-20.

(g) Three (3) natural gas-fired tundish dryers, identified as TD-1, TD-2, and TD-3, constructed in 2002, to be modified in 2006, with a maximum heat input capacity of 4 MMBtu per hour, 3 MMBtu per hour, and 1 MMBtu per hour, respectively, utilizing low-NOx burners, and having the capability to utilize propane as a backup fuel. Emissions exhaust to roof monitor S-21.

(h) Two (2) natural gas-fired transition piece preheaters, identified as TPP-3 and TPP-4, and two (2) natural gas-fired transition piece dryers, identified as TPD-1 and TPD-2, constructed in 2002, to be modified in 2006. The two (2) transition piece preheaters have a heat input capacity of 2 MMBtu per hour each for a combined total capacity of 4.0 MMBtu per hour, the two (2) transition piece dryers have heat input capacity of 0.15 MMBtu per hour each, utilizing low-NOx burners. The preheaters exhaust to baghouse stack S-20. The dryers exhaust to roof monitor S-21. The preheaters are used in the tundish operation located on the caster deck. The transition piece preheaters and transition piece dryers utilize propane as a backup fuel.

(i) Associated VTD alloy unloading, storage and feed systems, identified as AU-2, controlled by baghouses AU-2b and AU-2c, constructed in 2005, approved for modification in 2008, and consisting of:

(1) One (1) alloy truck dump station.

(2) Truck unloading/conveyors.

(3) Storage hoppers, all exhausting to a common bin vent, rated at 0.01 grains per dry standard cubic foot, into the building.

Alloy unloading is performed in a 3-sided building along the side of the existing Castrip building. Emissions exhaust to the atmosphere.

(4) One (1) bulk lime storage silo, with a capacity of 70 tons and a loading rate of 25 tons

per hour, with a baghouse venting to stack AU-2a.

Facility Description [326 IAC 2-7-5(14)] continued:

(5) One (1) totally enclosed screw auger system for the bulk lime storage silo with a loading rate of 30 tons per hour.

(j) Dumping, storage, and transfer operations of alloy raw materials for the strip caster plant, identified as AU-1 and constructed in 2002.

(k) Relocation of the existing lime silo (SAS #1) used for the Castrip to keep the lime dry:

(1) One (1) pneumatic conveying of lime into the silo, SAS #1, approved in 2012 for construction, with maximum loading rate of 25 tons per hour, controlled by a bin vent filter with air flow rate of 1,200 dry standard cubic foot per minute (dscfm) and outlet grain loading of 0.01 grain/dscf and vented back to the Castrip baghouse.

(2) One (1) lime silo screw auger, approved in 2012 for construction, which conveys lime into an existing hopper at a maximum loading rate of 40 tons per hour, located inside a totally enclosed building. Particulate emissions collected from this totally enclosed building is vented back into the Castrip Baghouse.

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

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

D.3.1 Nitrogen Oxides (NOX) Emission Limitations

(a) Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the small combustion units consisting of ladle preheaters LP-1, LP-2, and LP-3, tundish dryers TD-1, TD-2, and TD-3, and the transition piece dryers TPD-1 and TPD-2, shall comply with the following requirements:

(1) Each combustion facility shall utilize “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel; and

(2) The following combustion facilities shall vent to S-21 roof monitor:

Combustion Facility	No. Units	Each Unit’s Max Heat Input Rate (MMBtu/hr)	Burner Type (or equivalent)	Stack
Ladle Preheaters LP-1, LP-2, and LP-3	4	12	Low-NOx	S-21
Tundish Dryer TD-1	1	4	Low-NOx	S-21
Tundish Dryer TD-2	1	3	Low-NOx	S-21
Tundish Dryer TD-3	1	1	Low-NOx	S-21
Transition Piece Dryers TPD-1 and TPD-2	2	0.15	Low-NOx	S-21

(b) Pursuant to 326 IAC 2-2-3 (PSD BACT) and PSD/SSM 107-21359-00038, issued April 27, 2006, the BACT for NOx from the tundish dryers identified as TD-1, TD-2, TD-3, and each transition piece dryer identified as TPD-1 and TPD-2 shall be proper equipment

operation, the use of low NOx burners, and NOx emission rate shall not exceed an emission rate of 0.10 pounds per MMBtu. Further, the hourly NOx emission rate shall not exceed 0.40, 0.30, and 0.10 lbs per hour for emission units TD-1, TD-2, and TD-3, respectively, and the hourly NOx emission rate shall not exceed 0.015 lbs per hour for each transition piece dryer identified as TPD-1 and TPD-2.

(c) Pursuant to 326 IAC 2-2-3 (PSD BACT) and PSD/SSM 107-21359-00038, issued April 27, 2006, the BACT for NOx from each ladle preheater identified as LP-1, LP-2, and LP-3 shall be proper operation and shall not exceed a NOx emission rate of 0.10 pounds per MMBtu and 1.2 lbs per hour.

D.3.2 Sulfur Dioxide (SO2) Emission Limitations

Pursuant to 326 IAC 2-2 and PSD/SSM 107-21359-00038, issued April 27, 2006, the combustion units specified in Condition D.3.1(a) shall utilize “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel. The combustion units shall comply with the following requirements:

(a) BACT for SO2 from the tundish dryers identified as TD-1, TD-2, and TD-3 and each transition piece dryer identified as TPD-1 and TPD-2 shall be proper operation and shall not exceed a SO2 emission rate of 0.0006 pounds per MMBtu. Further, the hourly SO2 emission rate shall not exceed 0.0024, 0.0018, and 0.0006 lbs per hour for emission units TD-1, TD-2, and TD-3, respectively, and the hourly SO2 emission rate shall not exceed 0.0001 lbs per hour for each transition piece dryer identified as TPD-1 and TPD-2.

(b) BACT for SO2 from each ladle preheater identified as LP-1, LP-2, and LP-3 shall be proper operation and shall not exceed a SO2 emission rate of 0.0006 pounds per MMBtu and 0.007 lbs per hour.

D.3.3 Carbon Monoxide (CO) Emission Limitations

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the combustion units specified in Condition D.3.1(a) shall utilize “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel, and comply with the following requirements:

(a) BACT for CO from the tundish dryers identified as TD-1, TD-2, and TD-3 and each transition piece dryer identified as TPD-1 and TPD-2 shall be proper operation and shall not exceed a CO emission rate of 0.084 pounds per MMBtu. Further, the hourly CO emission rate shall not exceed 0.336, 0.252, and 0.084 lbs per hour for emission units TD-1, TD-2, and TD-3, respectively, and the hourly CO emission rate shall not exceed 0.013 lbs per hour for each transition piece dryer identified as TPD-1 and TPD-2.

(b) BACT for CO from each ladle preheater identified as LP-1, LP-2, and LP-3 shall be proper operation and shall not exceed a CO emission rate of 0.084 pounds per MMBtu and 1.01 lbs per hour.

D.3.4 Particulate Matter (PM/PM10) Emission Limitations

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the combustion units specified in Condition D.3.1(a) shall utilize proper operation, utilize “pipeline quality” natural gas as the primary fuel, and may utilize propane as a backup fuel, and shall comply with the following requirements:

(a) BACT for PM/PM10 (filterable plus condensable) from the tundish dryers identified as TD-1, TD-2, TD-3 and each transition piece dryer identified as TPD-1 and TPD-2 shall be utilization of “good combustion practices” and shall not exceed a PM/PM10 (filterable plus condensable) emission rate of 0.0076 pounds per MMBtu. Further, the hourly PM/PM10

(filterable plus condensable) emission rate shall not exceed 0.030, 0.023, and 0.008 lbs per hour for emission units TD-1, TD-2, and TD-3, respectively, and the hourly PM/PM10 (filterable plus condensable) emission rate shall not exceed 0.0011 lbs per hour for each transition piece dryer identified as TPD-1 and TPD-2.

(b) BACT for PM/PM10 (filterable plus condensable) from each ladle preheater identified as LP-1, LP-2, and LP-3 shall be utilization of "good combustion practices" and shall not exceed a PM/PM10 (filterable plus condensable) emission rate of 0.0076 pounds per MMBtu and 0.091 lbs per hour.

(c) The opacity from the LMS-2 roof monitor (S-21) shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9). Compliance with this limitation satisfies the opacity limitations required by 326 IAC 5-1 (Opacity Limitations).

D.3.5 Volatile Organic Compounds (VOC) Emission Limitations

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the combustion units specified in Condition D.3.1(a) shall utilize "good combustion practices", utilize "pipeline quality" natural gas as the primary fuel and may utilize propane as a backup fuel, and comply with the following requirements:

(a) BACT for VOC from the tundish dryers identified as TD-1, TD-2, and TD-3 and each transition piece dryer identified as TPD-1 and TPD-2 shall be proper operation and shall not exceed a VOC emission rate of 0.0054 pounds per MMBtu. Further, the hourly VOC emission rate shall not exceed 0.011, 0.016, and 0.005 lbs per hour for emission units TD-1, TD-2, and TD-3, respectively, and the hourly VOC emission rate shall not exceed 0.0035 lbs per hour for each transition piece dryer identified as TPD-1 and TPD-2.

(b) BACT for VOC from each ladle preheater identified as LP-1, LP-2, and LP-3 shall be proper operation and shall not exceed a VOC emission rate of 0.0054 pounds per MMBtu and 0.065 lbs per hour.

D.3.6 Nitrogen Oxide (NOx) Emission Limitation [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the combustion units consisting of tundish preheaters TP-1 and TP-2, transition piece preheaters TPP-3 and TPP-4, and tundish nozzle preheaters TNP-1 and TNP-2, shall comply with the following requirements:

(a) Each combustion facility shall utilize "good combustion practices", utilize "pipeline quality" natural gas as the primary fuel and may utilize propane as a backup fuel; and

(b) The following combustion facilities shall vent to LMS-2 Baghouse stack S-20:

Combustion Facility	No. Units	Each Unit's Max Heat Input Rate (MMBtu/hr)	Burner Type (or equivalent)	Stack
Tundish Preheaters TP-1 and TP-2	2	10	Oxy-Fuel	S-20
Transition Piece Preheaters TPP-3 and TPP-4	2	2	Low-NOx	S-20
Tundish Nozzle Preheaters TNP-1 and TNP-2	2	2	Low-NOx	S-20

D.3.7 VTD Alloy Handling PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the following BACT requirements apply to the VTD alloy unloading operations AU-2:

(a) The Permittee shall perform alloy unloading in a 3-sided building.

(b) The visible emissions from the alloy unloading shall not exceed 3% opacity, based on a 6-minute average.

(c) Except as otherwise provided by statute, rule, or this permit, the VTD material handling system bin vent filters for PM control shall be in operation and control emissions at all times the associated equipment controlled by the filters are in operation.

(d) In the event that filter failure is observed in a multi-compartment filter housing, 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 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.3.8 Dumping, Storage, and Transfer Operations PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the emissions from dumping, storage, and transfer operations of raw materials identified as AU-1 shall not exceed five percent (5%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9). This limitation satisfies the opacity limitations required by 326 IAC 5.1 (Opacity Limitations).

D.3.9 PM10 and PM2.5 PSD Minor Limits [326 IAC 2-2

In order to make the requirements of 326 IAC 2-2 (PSD) not applicable, the PM10 and PM2.5 emissions from the Screw Auger for Lime Silo, SAS #1 shall each be limited to 0.6 pound per hour. Compliance with these limits shall keep the PM10 and PM2.5 emissions from emission units permitted in SSM 107-31415 below 15 tons per year and 10 tons per year, respectively. Therefore, the requirements of 326 IAC 2-2 (PSD) are rendered not applicable.

D.3.10 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2, the particulate emissions from alloy handling and dumping, storage, and transfer operations (AU-1 and AU-2) shall not exceed the pound per hour emission rates established as E in the following equations:

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 following equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour, and P = process weight rate in tons per hour

or

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:

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

(b) Pursuant to 326 IAC 6-3-2, the particulate emissions from the following emission units shall be limited as follows:

Emission Units/Process ID	Process Weight Rate (ton/hour)	Particulate Emission Limits (pound/hour)
Lime Pneumatic Conveying into Silo, SAS #1	25	35.43
Lime Silo Screw Auger to Existing Castrip Conveyor #1	40	42.53

The particulate emission limits in the above table shall be calculated using the following equations:

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 following equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour, and
P = process weight rate in tons per hour

or

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:

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

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

D.3.11 Capture System

The building that is used to capture particulate emissions from the Lime Screw Auger Hopper shall be totally closed whenever the Lime Screw Auger Hopper is in operation.

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

D.3.12 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Condition D.3.2, the Permittee shall maintain records of all vendor guarantees for all combustion units listed in this section.

(b) Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.4 FACILITY OPERATION CONDITIONS

Emission Unit Description:

CASTRIP – LMS, TUNDISH, AND CONTINUOUS STRIP CASTER

(k) A strip caster line rated at a maximum steel production rate of 270 tons per hour consisting of:

(1) One (1) ladle metallurgy station, identified as LMS-2, constructed in 2002, approved in 2006 for modification, approved in 2013 for modification by adding a second ladle access to the LMS (only one ladle will operate at a time) and with a maximum production capacity of 270 tons of steel per hour, and emissions captured by a side draft hood that has a PM capture efficiency of 99 percent and controlled by the LMS-2 baghouse, and exhausting to the LMS-2 baghouse stack identified as S-20. The remaining uncontrolled emissions shall be exhausted through the LMS-2 roof monitor identified as S-21. The LMS-2 baghouse has an enclosed dust handling system or equivalent for material recovery and particulate matter control

This LMS-2 receives liquid steel from the Castrip VTD or Meltshop LMFs, or EAFs or AOD. It can process heats and return them to the CASTRIP or the Meltshop for casting.

(2) Tundishes, identified as T-1, constructed in 2002, to be modified in 2006, with a maximum production capacity of 270 tons of steel per hour. The two (2) natural gas-fired tundish preheaters, identified as TP-1 and TP-2 and the three (3) natural gas-fired tundish dryers, identified as TD-1, TD-2 and TD-3, supply heat to the tundish. Only one (1) tundish may be operated at a given time. The tundish in operation feeds the molten metal from the LMS-2 ladle to one (1) continuous strip caster identified as CS-1.

(3) One (1) continuous strip caster, identified as CS-1, constructed in 2002, to be modified approved in 2006 for modification, approved in 2013 for modification to allow casting a wider strip of steel, with a maximum capacity of 270 tons of steel per hour, and emissions captured by a canopy hood that has a PM capture efficiency of 98 percent. The captured PM in the gas stream shall be controlled by the LMS-2 baghouse and the gas stream shall be exhausted though the LMS-2 baghouse stack identified as S-20. The remaining uncontrolled emissions shall be exhausted through the LMS-2 roof monitor identified as S-21.

This Castrip Caster CS-1 receives liquid steel from the Castrip VTD or Castrip LMS-2 or Meltshop LMFs or EAFs or AOD.

(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 PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD SSM 107-21359-00038, issued April 27, 2006, the strip caster line (consisting of units LMS-2, T-1 and CS-1) shall comply with the following BACT requirements.

(a) The ladles associated with strip caster CS-1 shall be covered with lids which shall be closed at all times when transporting molten metal in the ladles outside a building in order to minimize uncontrolled emissions.

(b) Ladle Metallurgy Station LMS-2 shall be equipped with a side draft hood that evacuates particulate fumes from the LMS-2 to the LMS-2 baghouse. The side draft hood shall have a minimum capture efficiency of 99 percent.

(c) Tundish T-1 and continuous strip caster CS-1 shall be controlled by a canopy hood that evacuates particulate fumes to the LMS-2 baghouse. The hood shall have a minimum capture efficiency of at least 98 percent.

(d) The Particulate Matter (Filterable) emissions from the LMS-2 baghouse shall not exceed 0.0018 grains per dry standard cubic feet (gr/dscf) at a maximum volumetric air flow rate of 200,000 dry standard cubic feet per minute and 3.08 pound per hour.

(e) The PM10/PM2.5 (Filterable and Condensable) emissions from the LMS-2 baghouse shall not exceed 0.0052 gr/dscf at a maximum volumetric air flow rate of 200,000 dry standard cubic feet per minute and 8.9 pound per hour.

(f) The opacity from the LMS-2 baghouse stack (S-20) shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9) when emitted from any baghouse, roof monitor or building opening. This limitation satisfies the opacity limitations required by 326 IAC 5-1 (Opacity Limitations).

(g) Except as otherwise provided by statute, rule, or this permit, the baghouses for PM control shall be in operation and control emissions at all times the associated equipment controlled by the baghouse are in operation.

(h) 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 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.4.2 Nitrogen Oxide (NOx) PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD SSM 107-21359-00038, issued April 27, 2006, the total emissions from the Castrip LMS-2 baghouse stack (S-20) shall not exceed 0.19 pounds of NOx per ton of steel processed at the LMS-2.

D.4.3 Carbon Monoxide (CO) PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD SSM 107-21359-00038, issued April 27, 2006, the total emissions from the Castrip LMS-2 baghouse stack (S-20) shall not exceed 0.141 pound of CO per ton of steel processed at the LMS-2.

D.4.4 Sulfur Dioxide (SO2) PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD SSM 107-21359-00038, issued April 27, 2006, the total emissions from the Castrip LMS-2 baghouse stack (S-20) shall not exceed 0.210 pounds SO_2 per ton of steel processed at the LMS-2.

D.4.5 PSD BACT for Metals [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), and PSD SSM 107-24348-00038, the Permittee shall comply with the following BACT requirements:

(a) The Lead emissions from the Castrip, CS-1 shall be limited to 0.13 pound per hour, based on a 3-hour block average.

(b) The Mercury emissions from the Castrip, CS-1 shall be limited to 0.02 pound per hour, based on a 3-hour block average.

(c) The Beryllium emissions from the Castrip, CS-1 shall be limited to 0.002 pound per hour, based on a 3-hour block average.

(d) The Fluorides emissions from the Castrip, CS-1 shall be limited to 2.7 pounds per hour, based on a 3-hour block average.

The fluorides emissions from the Castrip shall be minimized by using granular Fluorspar, to minimize fluorides emissions and it shall be applied at an average rate of 250 pounds/heat or less at the Castrip (LMS or VTD).

(e) The emissions from the lead and mercury shall be minimized in accordance with the Scrap Management Program (SMP) in Condition D.29.10(c) and

(f) The emissions from the Castrip LMS-2, Tundish T-1, and continuous strip caster CS-1 shall be controlled by a baghouse.

D.4.6 Operation Limitations [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), and PSD SSM 107-21359-00038, issued April 27, 2006, the strip caster line shall not exceed a maximum steel throughput of 2,365,200 tons per twelve (12) consecutive month period. The Permittee shall demonstrate compliance with these steel processing limits based on a consecutive twelve (12) month period.

D.4.7 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the LMS-2 and continuous strip caster CS-1 and the particulate capture and control systems associated with LMS-2 and CS-1. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination and Monitoring [326 IAC 2-7-5(1)]

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

(a) Within sixty (60) days after achieving maximum capacity but no later than one hundred and eighty (180) days after startup of this modification (PSD/SSM 107-32615-00038) associated with the production of wider strip of steel, the Permittee shall conduct one (1) time performance tests on the LMS-2 baghouse associated with the continuous strip caster CS-1 for NOx, CO, and SO2 to demonstrate compliance with Conditions D.4.2, D.4.3 and D.4.4 utilizing EPA Methods or other methods as approved by the Commissioner.

(b) Within sixty (60) days after achieving maximum capacity but no later than one hundred and eighty (180) days after startup of this modification (PSD/SSM 107-32615-00038) associated with the production of wider strip of steel, the Permittee shall conduct performance tests on the LMS-2 baghouse associated with the continuous strip caster CS-1 for opacity, Mercury, Beryllium and Fluoride, PM, PM10, PM2.5 and Pb, to demonstrate compliance with Conditions D.4.1(d), (e), (f) and D.4.5(a) through (d), utilizing EPA Methods or other methods as approved by the Commissioner. All compliance stack tests shall be repeated at least once every 2.5 years from the date of a valid compliance demonstration.

Opacity tests shall be performed concurrently with the particulate compliance stack test for the LMS-2 baghouse stack, unless meteorological conditions require rescheduling the opacity tests to another date.

Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.4.9 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the LMS-2 baghouse stack exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

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

D.4.10 Baghouse Parametric Monitoring [40 CFR 64]

(a) The Permittee shall record the pressure drop across the LMS-2 baghouse used in conjunction with LMS-2 or CS-1, at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between 1.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

(b) The Permittee shall record the fan amperes of LMS baghouse fan at least once per day when the associated LMS or continuous strip caster is in operation. The fan amperes of the capture and control system shall be maintained within plus or minus 15% of the value established during the most recent compliant stack test. Whenever the fan amperes are more than 15% above or below the above-mentioned value for any one reading, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the fan amperes shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

D.4.11 Broken or Failed Bag Detection [40 CFR 64]

(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 - 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 (Section B - 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 and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.4.12 Record Keeping Requirements

(a) To document the compliance status with Condition D.4.9, the Permittee shall maintain records of visible emission notations of the LMS baghouse stack exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.4.10(a), the Permittee shall maintain once per day records of the total static pressure drop during normal operation and the reason for the lack of pressure drop notation (e.g. the process did not operate that day).

(c) To document the compliance status with Condition D.4.10(b), the Permittee shall maintain once per day records of the fan amperes during normal operation.

(d) To document the compliance status with Condition D.4.5(d), the Permittee shall maintain records of the amount of Fluorspar applied at the Castrip.

(e) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.4.13 Reporting Requirements

(a) A quarterly summary of the information to document the compliance status with Condition D.4.6 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee’s obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35)

(b) The Permittee shall submit performance test protocols and performance test reports required by Operation Condition D.4.8 in accordance with the reporting requirements

established in Section C - Performance Testing and Section C - General Reporting Requirements.

SECTION D.5 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS

(a) Raw materials handling/storage, including silos which contain the following materials:

(1) One (1) lime silo TFS-1.

(2) One (1) Iron Oxide Silo (IOS #1).

(3) Three (3) Baghouse Dust Silos (BHS#1, BHS#2, BHS#3).

(4) One (1) Lime Silo (#1 SEAF).

(5) One (1) Lime Silo (#2 SEAF).

(6) One (1) Lime Silo (#3 NEAF).

(7) One (1) Lime Silo (#4 NEAF).

(8) One (1) Injection Carbon Silo #1, with bin vent filter and capacity of 3,625 cubic feet, permitted in 2010 for construction.

(9) One (1) Injection Carbon Silo #2, approved in 2013 for replacement.

(10) One (1) Charge Carbon Silo #1, approved in 2013 for replacement.

(11) One (1) Charge Carbon Silo #2, approved in 2013 for replacement.

(12) Three (3) AOD alloy system silos (AOD#1, AOD#2, and AOD#3).

(13) Ten (10) Melt Shop Alloy Feed System silos (MS alloy #1, MS alloy #2, MS alloy #3, MS alloy #4, MS alloy #5, MS alloy #6, MS alloy #7, MS alloy #8, MS alloy #9, MS alloy #10).

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

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

D.5.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from the insignificant silos shall not exceed a pound per hour emission rate established as E in the following formula:

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:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

or

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:

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

SECTION D.6 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – CASTRIP – COILERS, COIL CUTTING, AND HOT ROLLING STAND

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(b) Two (2) coilers, identified as C-1 and C-2, constructed in 2002 and modified in 2013 to allow coiling of wider strip of steel. Fugitive particulate emissions from this process are controlled by the application of water to the coilers and exhausting to the roof monitor S-21. These coil the steel strip from the continuous strip caster.

(c) Scrap coil cutting in the Castrip area, identified as CC-1, constructed in 2002, occurs on an as needed basis, performed indoors and exhausted to general ventilation that is controlled by the Castrip LMS Baghouse and exhausting to stack S-20.

(d) One (1) hot rolling stand, identified as HRS #, constructed in 2002. This stand rolls the steel strip from the continuous strip caster to the desired gauge. Fugitive particulate emissions controlled by the application of water to the steel strip, and exhausting to the LMS roof monitor identified as S-21.

(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 Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from the insignificant coilers, coil cutting, and hot rolling stand shall not exceed a pound per hour emission rate established as E in the following formula:

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 following equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour, and
P = process weight rate in tons per hour

D.6.2 Baghouse Operation [326 IAC 2-2]

(a) Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, and 326 IAC 2-2, the Castrip LMS Baghouse for particulate control shall be in operation and control emissions at all times that coil cutting is operating in the Castrip area.

(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.

SECTION D.7 FACILITY OPERATION CONDITIONS

Emission Unit Description:

SLAG PROCESSING

(p) Slag processing, identified as EU-10, constructed in 1989, is performed by Whitesville Mill Service Company, an on-site contractor. Slag and other steel mill related materials are transported by slag pots or other mobile equipment, processed, and stockpiled with a maximum throughput of 305 tons/hr. This emission unit consists of storage piles (unprocessed and processed materials), grizzly feeding, slag processing (screening, conveying, and crushing), slag pot dumping, product loading for transport, and unpaved roads. The fugitive emissions from slag processing are controlled by applying an initial application of water or a mixture of water and wetting agent or the use of water sprays weather permitting and exhaust to the atmosphere.

Two (2) conveyors, modified in 2015, identified as TSP-1 and TSP-5, replacement Screen identified as TSP-2 rated at 341 tons/hour, addition of a magnetic separator to a new conveyor belt exiting the Grizzly. Increase the capacity of screening process, TSP-8, consisting of three (3) screeners from a total of 305 tons/hr to a total of 447 tons/hr, approved in 2013 to increase to 600 tons/hr. Finally, the screened material will be conveyed into the remaining permitted EU10 operation which will increase utilization due to the increase in capacity of TSP-8.

One (1) crusher, TSP-6 with a maximum throughput rate of 100 tons per hour, approved in 2010 for construction and approved in 2011 to increase its capacity to 305 tons per hour.

One (1) Grizzly hopper with vibrating feeder, identified as Grizzly, with a maximum throughput of 305 tons per hour, replaced in 2015.

One (1) conveyor, identified as conveyor B, with a maximum throughput of 610 tons per hour, modified in 2015.

(q) Blend Plant, approved in 2011 for construction, with a maximum rated capacity of 305 tons per hour, which includes front end loaders identified as BP-1 and conveying system identified as BP-2, with fifty (50) slag storage piles. The Blend Plant will further process the various materials streams from the existing Slag Operation EU-10 to produce various blends of slag products.

(q1) Permanent Screening Plant, approved in 2011 for construction, with a maximum rated capacity of 60 tons per hour, and approved in 2012 for modification, and permitted in 2013 with a maximum rated capacity of 300 tons per hour. This screening plant will further screen the slag product from EU-10 and the Blend Plant to a smaller size for special applications.

One (1) double decker screen, identified as PS1 and PS2, approved in 2015 for construction, with a maximum capacity of 200 tons per hour.

One (1) conveyor, identified as Conveyor #7, approved in 2015 for construction, with a maximum capacity of 200 tons per hour.

One (1) front end loader, approved in 2015 for construction, with a maximum capacity of 200 tons per hour.

(q2) One (1) Coil and Scrap Cutting Operation, identified as CC-1, with particulate emissions controlled by a baghouse, utilizing one (1) 11 million British thermal units per hour (MMBtu/hr) torch unit to cut the coils and scrap, approved in 2011 for construction.

(q3) Fifteen (15) storage piles, approved in 2015 for construction, storing slag from the Blend Plant and other steel mill related materials.

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

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

D.7.1 PSD (Prevention of Significant Deterioration) - BACT [326 IAC 2-2]

(a) Pursuant to PSD 107-2764-00038, issued on November 30, 1993, the Fugitive Dust Control Plan (included as Attachment A to this permit), shall be implemented to control fugitive dust from paved roads, unpaved roads, parking lots, traveled open areas, and uncontrolled slag process and storage pile emissions. Adherence to the fugitive dust control plan is considered BACT.

(b) Pursuant to A 107-8255-00038 to PSD 107-2764-00038, issued November 30, 1993, and 326 IAC 2-2, the fugitive dust emissions from the various slag handling and processing operations shall be controlled in accordance with the Fugitive Dust Control Plan approved on March 28, 1999 (attached as Attachment A to this permit) such that the following opacity limitations are not exceeded at each point where such slag handling and processing operations occur:

Slag Handling/Processing Operation	**Opacity Limitation***
Transferring of skull slag to slag pot	10% Opacity
Pouring of liquid slag from EAF or Caster to slag pots	3% Opacity
Dumping of liquid slag from slag pot to slag pit and cooling	3% Opacity
Transferring of skull slag from slag pot to skull pit	5% Opacity
Digging skull slag pits	5% Opacity
Digging slag pits	3% Opacity
Stockpiling of slag adjacent to the grizzly feeder	3% Opacity
Wind erosion of stockpiles	3% Opacity
Crushing	3% Opacity
Screening	3% Opacity
Conveyor transfer points	3% Opacity
Continuous stacking of processed slag to stockpiles	3% Opacity
Loadout of processed slag from stockpiles to haul trucks for shipment	3% Opacity
Inplant hauling of slag pots (filled) and processed slag	3% Opacity

*All opacity limitations are based on six (6) minute averages.

These emission limits are considered BACT.

D.7.2 Prevention of Significant Deterioration (PSD) Minor Limits for PM, PM10 and PM2.5 Emissions [326 IAC 2-2]

(a) The PM, PM10 and PM2.5 emissions from the following units shall not exceed the limits listed in the table below:

Unit Description	Throughput Limit (tons/yr)	PM Emissions Limit (lb/ton)	PM10 Emissions Limit (lb/ton)	PM2.5 Emissions Limit (lb/ton)
Replacement Crusher, TSP-6	2,671,800	0.00016	0.000072	0.000072
*Conveying Process with 12 drop points (Group 1)	2,671,800 each drop point	0.00009 each drop point	0.000033 each drop point	0.000033 each drop point
Screening Process, TSP-8	2,000,000	0.00075	0.00026	0.00026
EU-10 Slag 25 Drop Points (Group 5)	2,000,000 each drop point	0.00009 each drop point	0.000033 each drop point	0.000033 each drop point
Blend Plant Material handling Front-End Loader, BP-1	1,500,000	0.00026	0.00013	0.000048
Blend Plant Conveying Process (6 Drop Points) (Group 2)	1,500,000 each drop point	0.00009 each drop point	0.000033 each drop point	0.000033 each drop point
Permanent Screening Plant[3] - Screen, PS1	300,000	0.00075	0.00026	0.00026
Permanent Screening Plant[3] - Screen, PS2	300,000	0.00075	0.00026	0.00026
Permanent Screening Plant[3] - Crusher	300,000	0.00016	0.000072	0.000072
Permanent Screening Plant[3] - Conveying Process (8 Drop Points)	300,000 each drop point	0.00009 each drop point	0.000033 each drop point	0.000033 each drop point
Permanent Screening Plant[3] -Front End Loaders	300,000 each	0.00026 each	0.00013 each	0.000048 each
Replacement Screen, TSP-2	2,000,000	0.00075	0.00026	0.00026
Conveying Process (5 drop points) (Group 4)	2,671,800 each drop point #1-#5	0.00009 each drop point #1-#5	0.000033 each drop point #1-#5	0.000033 each drop point

Note: * Drop points #5 through #12 in Conveying Process with 12 drop points[1] have more stringent throughput limit in EU-10 Slag 25 Drop Points[5]. Therefore, #5 through #12 drop points shall each have a throughput limit of 2,000,000 tons/yr.

The emission limits in lb/ton were based upon the uncontrolled EF (1-97%)

Group 1, consisting of Twelve Drop Points
#1 Existing conveyor (C) to crusher (TSP-6)
#2 Crusher (TSP-6) to conveyor belt (TSP-1)
#3 New conveyor (TSP-1) to new conveyor (TSP-5)
#4 Conveyor (TSP-5) to new Grizzly or new conveyor (B)
#5 Conveyor (B) to TSP-2
#6 TSP-2 to TSP-9
#7 Existing screen (TSP-8) to existing Shute (F)
#8 Existing screen (TSP-8) to existing Shute (G)
#9 Existing screen (TSP-8) to existing Shutes (H & I)

#10 Existing conveyor (K) to storage pile (SP-1)
#11 Existing conveyor (M) to storage pile (SP-2)
#12 Existing conveyor (S) to storage pile (SP-3)

Group 2, consisting of Six Drop Points:
#1 - #4 Hoppers drop slag into conveyor
#5 conveyor into stacker conveyor
#6 stacker conveyor to 3 storage piles

Group 3, consisting of Fourteen Drop Points:
#1 Front end loader or Stacker Conveyor from Blend Plant to grizzly feed hopper/Conveyor #1
#2 Conveyor #1 to Conveyor #2
#3 Conveyor #2 to Screens (PS1 / PS2)
#4 Screens (PS1 / PS2) to Conveyor #3
#5 Screens (PS1 / PS2) to Conveyor #4
#6 Screens (PS1 / PS2) to Conveyor #7
#7 Conveyor #3 to Pile #3
#8 Conveyor #4 to Pile #4
#9 Conveyor #7 to Pile #5
#10 Screens (PS1 / PS2) to Pile #6
#11 Magnetic Separator to Pile #1
#12 Front end loader or Conveyor #4 to crusher
#13 Crusher to conveyor #5
#14 Conveyor #5 to hopper

Group 4, consisting of Five Drop Points:
#1 metal separated by the new magnetic separator into pile #5
#2 slag that passed through the new magnetic separator will be transferred via the new conveyor (B) to existing magnetic separator #2, separated metal goes to TSP-2, pile #6.
#3 Slag that passes through the existing magnetic separator either passes through TSP-2 for further processing (EU-10) or is conveyed to crusher TSP-6 via existing conveyor (C).
#4 From crusher TSP-6, the crushed slag returns back to new conveyors TSP-1 and TSP-5 to the new Grizzly or conveyor (B), which then goes to TSP-2
#5 TSP-2 to existing screening process EU-10

Group 5, consisting of Twenty-Five EU-10 Slag Drop Points:
#1 TSP-8 to Shute F
#2 TSP- 8 to Shute G
#3 TSP-8 to Shute H
#4 TSP-8 to Shute I
#5 Shute F to Conveyor J
#6 Conveyor J to Conveyor K
#7 Conveyor K to Storage Pile #1
#8 Shute G to Conveyor L
#9 Magnetic Separator #3 to Storage Pile 7
#10 Conveyor L to Conveyor M
#11 Conveyor M to Storage Pile #2
#12 Shute H to Conveyor N
#13 Shute I to Conveyor N
#14 Magnetic Separator #4 and #5 to Storage Pile #8
#15 Conveyor N to Conveyor O
#16 Conveyor O to Cone Crusher
#17 Cone Crusher - PTE calculated in the above Table*

#18 Cone Crusher to Conveyor P
#19 Conveyor P to Conveyor Q
#20 Conveyor Q to Screen TSP-8
#21 Shute H to Conveyor R
#22 Shute I to Conveyor R
#23 Conveyor R to Conveyor S
#24 Conveyor S to Storage Pile #3
#25 Magnetic Separator #6 to Storage Pile #9

(b) The PM and PM10 emissions from the Coil and Slag Cutting operation shall each not exceed 0.46 pound per hour.

(c) The Fugitive Dust Control Plan (included as Attachment A to this permit), shall be implemented to control fugitive particulate emissions from the Blending Plant (vehicular traffic, load-in and load-out of slag to 50 open storage piles and wind erosion from the 50 open storage piles).

Compliance with this limit shall limit the potential to emit PM to less than twenty-five (25), PM10 to less than fifteen (15), and PM2.5 to less than ten (10) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to source modification permitted under SSM No. 107-29766-00038.

D.7.3 Prevention of Significant Deterioration (PSD) Minor Limits for PM, PM10 and PM2.5 Emissions [326 IAC 2-2]

Pursuant to Significant Permit Modification No.: 107-36536-00038, the Fugitive Dust Control Plan shall be implemented to control fugitive particulate emissions from the fifteen (15) storage piles (vehicular traffic, load-in and load-out of slag to 15 open storage piles and wind erosion from the 15 open storage piles).

Compliance with this limit shall limit the potential to emit of PM to less than twenty-five (25), PM10 to less than fifteen (15), and PM2.5 to less than ten (10) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to source modification permitted under SSM No. 107-36491-00038.

D.7.4 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from each of the following facilities shall not exceed the pound per hour limit listed in the table below when running at the listed maximum process weight rates:

Process/Facility	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Existing Slag processing -EU-10		
Replacement Crusher, TSP-6	305	63.18
**Conveying Process with 12 drop points (Group 1)	341 each drop point	63.18 each drop point
Screening Process, TSP-8	600	71.2
EU-10 Slag 25 Drop Points (Group 5)	600 each drop point	71.2 each drop point
Grizzly	305	63.18
Blend Plant		
Material handling, Front End-Loader, BP-1	305	63.18

Process/Facility	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Blend Plant - 6 Conveying Drop Points (Group 2)	305 each drop point	63.18 each drop point
Permanent Screening Plant		
Permanent Screening Plant[3]- Screen PS1 / PS2	200 (each)	58.51 (each)
Permanent Screening Plant[3]- 8 Conveying Drop Points	300 each drop point	63.0 each drop point
Permanent Screening Plant[3]- Conveyor #7	200	58.51
Permanent Screening Plant[3]- Front End Loader	300	63.0
Permanent Screening Plant[3]- Front End Loader	200	58.51
Coil and Scrap Cutting, CC-1	70	47.8
Replacement Screen, TSP-2	341	64.5
Conveying Process (5 drop points) (Group 4)	305 each drop point	63.18 each drop point

Note: **Drop points #5 through #12 in Conveying Process with 12 drop[1] shall use process weight rate of 600 tons/hour that is in EU-10 Slag 25 Drop Points[5]

Group 1, consisting of Twelve Drop Points
#1 Existing conveyor (C) to crusher (TSP-6)
#2 Crusher (TSP-6) to conveyor belt (TSP-1)
#3 New conveyor (TSP-1) to new conveyor (TSP-5)
#4 Conveyor (TSP-5) to new Grizzly or new conveyor (B)
#5 Conveyor (B) to TSP-2
#6 TSP-2 to TSP-9
#7 Existing screen (TSP-8) to existing Shute (F)
#8 Existing screen (TSP-8) to existing Shute (G)
#9 Existing screen (TSP-8) to existing Shutes (H & I)
#10 Existing conveyor (K) to storage pile (SP-1)
#11 Existing conveyor (M) to storage pile (SP-2)
#12 Existing conveyor (S) to storage pile (SP-3)

Group 2, consisting of Six Drop Points:
#1 - #4 Hoppers drop slag into conveyor
#5 conveyor into stacker conveyor
#6 stacker conveyor to 3 storage piles

Group 3, consisting of Fourteen Drop Points:
#1 Front end loader or Stacker Conveyor from Blend Plant to grizzly feed hopper/Conveyor #1
#2 Conveyor #1 to Conveyor #2
#3 Conveyor #2 to Screens (PS1 / PS2)
#4 Screens (PS1 / PS2) to Conveyor #3
#5 Screens (PS1 / PS2) to Conveyor #4
#6 Screens (PS1 / PS2) to Conveyor #7
#7 Screens (PS1 / PS2) to Pile #3
#8 Screens (PS1 / PS2) to Pile #4
#9 Screens (PS1 / PS2) to Pile #5
#10 Screens (PS1 / PS2) to Pile #6

#11 Magnetic Separator to Pile #1
#12 Front end loader or Conveyor #4 to crusher
#13 Crusher to conveyor #5
#14 Conveyor #5 to hopper

Group 4, consisting of Five Drop Points:
#1 metal separated by the new magnetic separator into pile #5
#2 slag that passed through the new magnetic separator will be transferred via the new conveyor (B) to existing magnetic separator #2, separated metal goes to TSP-2, pile #6.
#3 Slag that passes through the existing magnetic separator either passes through TSP-2 for further processing (EU-10) or is conveyed to crusher TSP-6 via existing conveyor (C).
#4 From crusher TSP-6, the crushed slag returns back to new conveyors TSP-1 and TSP-5 to the new Grizzly or conveyor (B), which then goes to TSP-2
#5 TSP-2 to existing screening process EU-10

Group 5, consisting of Twenty-Five EU-10 Slag Drop Points:
#1 TSP-8 to Shute F
#2 TSP- 8 to Shute G
#3 TSP-8 to Shute H
#4 TSP-8 to Shute I
#5 Shute F to Conveyor J
#6 Conveyor J to Conveyor K
#7 Conveyor K to Storage Pile #1
#8 Shute G to Conveyor L
#9 Magnetic Separator #3 to Storage Pile 7
#10 Conveyor L to Conveyor M
#11 Conveyor M to Storage Pile #2
#12 Shute H to Conveyor N
#13 Shute I to Conveyor N
#14 Magnetic Separator #4 and #5 to Storage Pile #8
#15 Conveyor N to Conveyor O
#16 Conveyor O to Cone Crusher
#17 Cone Crusher - PTE calculated in the above Table*
#18 Cone Crusher to Conveyor P
#19 Conveyor P to Conveyor Q
#20 Conveyor Q to Screen TSP-8
#21 Shute H to Conveyor R
#22 Shute I to Conveyor R
#23 Conveyor R to Conveyor S
#24 Conveyor S to Storage Pile #3
#25 Magnetic Separator #6 to Storage Pile #9

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

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:

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

(b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), when the process weight rate exceeds two hundred (200) tons per hour, the allowable emissions may exceed that shown in the table in 326 IAC 6-3-2(e) provided the

concentration of particulate in the discharge gases to the atmosphere is less than one tenth (0.10) pound per one thousand (1,000) pounds of gases.

D.7.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan, is required for the Coil and Scrap Cutting, CC-1 and its control device. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan.

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

D.7.6 Particulate Control [326 IAC 2-7-6(6)]

In order to comply with Condition D.7.2(b) the Coil and Scrap Cutting, CC-1 shall be controlled by a baghouse at all times the Coil and Scrap Cutting, CC-1 is in operation.

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.7.7 Testing Requirements [326 IAC 2-1.1-11]

Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct PM and PM10 testing on the baghouse used in conjunction with the Coil and Scrap Cutting operation (CC-1), to demonstrate compliance with the particulate emission limits in Condition D.7.2(b), utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every 2.5 years from the date of the most recent valid compliance

Not later than 60 days after achieving maximum production capacity, but no later than 180 days after initial startup of the Coil and Scrap Cutting operation (CC-1), the Permittee shall perform PM and PM10 testing on its baghouse to demonstrate compliance with its particulate emission limits in Condition D.7.2(b), utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every 2.5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.7.8 Particulate Matter (PM) Control [326 IAC 2-2][326 IAC 6-3-2]

In order to ensure compliance with Conditions D.7.2 and D.7.4, the Permittee shall apply an initial application of water or a mixture of water and wetting agent or the use of water sprays weather permitting to control the PM, PM_{10}, and $PM_{2.5}$ emissions from the front end loaders, crushers, screens, and conveyors, such that the associated opacity limitations in Condition D.7.1 are not exceeded at each emission point where slag handling and processing operations occur.

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

D.7.9 Visible Emissions Notations

(a) Visible emission notations of the exhausts from CC-1 shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.7.10 Baghouse Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the Coil and Scrap Cutting, CC-1 at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response steps. The normal range for this unit is a pressure drop between 1.0 and 11.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. the Permittee shall take reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this permit. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

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

D.7.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.2, the Permittee shall maintain records of the throughput weight to the EU-10 Slag emission units for each compliance period.

(b) To document the compliance status with Condition D.7.9 the Permittee shall maintain records of the once per day visible emission notations. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).

(c) To document the compliance status with Condition D.7.10, the Permittee shall maintain records of the once per day pressure drop reading. 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) Section C - General Record Keeping Requirements, contains the Permittee's obligations with regard to the records required by this condition.

D.7.12 Reporting Requirements

A quarterly report of throughput weight to the EU-10 Slag emission units and a quarterly summary of the information to document the compliance status with Condition D.*7.2* shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.8 FACILITY OPERATION CONDITIONS

Emission Unit Description:

LINDE GASES PLANT

(r) The LINDE Gases Plant is operated by LINDE Gases, an on-site contractor. It provides gases (oxygen, nitrogen, hydrogen, argon, and liquid air), approved in 2012 to increase oxygen production to displace oxygen currently supplied by outside sources, consisting of:

(1) One (1) natural gas-fired boiler identified as ID No. 1, constructed in 1989, with a heat input capacity of 7 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-36. This boiler uses propane as a backup fuel.

(2) One (1) natural gas-fired boiler, identified as ID No. 2, constructed in 1994, with a heat input capacity of 15.0 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-37. This boiler uses propane as a backup fuel.

Under 40 CFR Part 60, Subpart Dc, this unit is considered a steam generating unit.

(3) One (1) natural gas-fired boiler, identified as the hydrogen plant boiler, constructed in 1996, with a heat input capacity of 9.98 MMBtu per hour, with Emissions uncontrolled, and exhausting to stack S-30. This boiler uses propane as a backup fuel.

(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 Preventive Maintenance Plan (PMP) [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP), in accordance with Section B – Preventive Maintenance Plan (PMP), of this permit, is required for the facilities listed in this section.

D.8.2 LINDE Gases Boiler PSD BACT [326 IAC 2-2]

(a) Pursuant to 326 IAC 2-2 and PSD 107-5235-00038, issued June 20, 1996, the Permittee shall comply with the following BACT requirements:

(1) The 9.98 MMBtu per hour hydrogen plant boiler shall burn natural gas with propane as backup fuel.

(2) The NOx emissions from the 9.98 MMBtu per hour hydrogen plant boiler shall not exceed 100 pounds per million cubic feet of natural gas combusted.

(b) Pursuant to 326 IAC 2-2 and PSD 107-3702-00038, issued March 28, 1995:

(1) The 7.0 MMBtu per hour boiler (ID No. 1) and the 15.0 MMBtu per hour boiler (ID No. 2) shall burn natural gas with propane as backup fuel.

(2) The NOx emissions from the 15.0 MMBtu per hour boiler (ID No. 2) shall not exceed 100 pounds per million cubic feet of natural gas combusted.

(3) The NOx emissions from the 7.0 MMBtu per hour boiler (ID No. 1) shall not exceed 100 pounds per million cubic feet of natural gas combusted.

D.8.3 Particulate Matter Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-3, the particulate matter (PM) from:

(a) The 9.98 MMBtu per hour heat input hydrogen plant boiler shall be limited to 0.363 pounds per MMBtu heat input.

(b) The 7.0 MMBtu per hour heat input boiler (ID No. 1) shall be limited to 0.41 pounds per MMBtu heat input.

(c) The 15.0 MMBtu per hour heat input boiler (ID No. 2) shall be limited to 0.379 pounds per MMBtu heat input.

These limitations are based on the following equation:

$Pt = 1.09 / Q^{0.26}$

where Pt = Pounds of PM emitted per million Btu (lb/MMBtu) heat input, and
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu per hour) heat input.

The Q at the source at the time the hydrogen plant boiler was permitted:
(Q =34 + 9 +15 + 9.98 = 67.98)

The Q at the source at the time the Linde boiler No.1 was permitted:
(Q =34 + 9 = 43)

The Q at the source at the time the Linde boiler No.2 was permitted:
(Q =34 + 9 +15 = 58)

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

D.8.4 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19][40 CFR Part 60 Subpart Dc]

(a) To demonstrate the compliance status with Condition D.8.2, the Permittee shall keep records of the fuel used each month by Boiler ID No. 2, including the types of fuel and amount used.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.9 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – PAVED AND UNPAVED ROADS

(e) Paved and unpaved roads and parking lots with public access. Transport on new and existing paved roadways and parking lots, unpaved roadways, and unpaved areas around existing raw material storage piles.

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

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

D.9.1 PSD Requirements [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the paved surface silt loading shall not exceed 16.8 pounds of silt per mile and the average instantaneous opacity from paved roadways and parking lots shall not exceed ten percent (10%).

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

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

(a) The first reading will be taken at the time of emission generation;

(b) The second reading will be taken five (5) seconds later; and

(c) The third reading will be taken five (5) seconds later or ten (10) seconds after the first reading.

The three (3) readings shall be taken at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and as close to approximately right angles to the plume as permissible under EPA Reference Method 9. Each reading shall be taken approximately four (4) feet above the surface of the paved roadway.

D.9.2 PSD Requirements [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the visible emissions from unpaved roadways and unpaved areas around raw material storage piles shall not exceed an average instantaneous opacity of ten percent (10%).

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

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

(a) The first reading will be taken at the time of emission generation;

(b) The second reading will be taken five (5) seconds later; and

(c) The third reading will be taken five (5) seconds later or ten (10) seconds after the first reading.

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

The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and as close to approximately right angles to the plume as permissible under EPA Reference Method 9.

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

D.9.3 PSD Requirements [326 IAC 2-2]

Pursuant to PSD 107-2764-00038, issued on November 30, 1993, the Fugitive Dust Control Plan (included as Attachment A to this permit), shall be implemented to control fugitive dust from paved roads, unpaved roads, parking lots, traveled open areas, and uncontrolled slag process and storage pile emissions.

Adherence to the fugitive dust control plan is considered a BACT requirement.

SECTION D.10 FACILITY OPERATION CONDITIONS

Emission Unit Description:

PETROLEUM PRODUCT STORAGE

(s) One (1) 500 gallon aboveground gasoline storage tank, identified as GST #1, installed in 1988, using submerged filling technology to control VOC emissions, which exhausts to the atmosphere.

(t) Three (3) 500 gallon aboveground diesel storage tanks, identified as DST #1, DST #2, and DST #3, all installed in 1988, using submerged filling technology to control VOC emissions, which exhausts to the atmosphere.

(u) One (1) 5,000 gallon aboveground diesel storage tank, identified as DST #4, installed in 1988, using submerged filling technology to control VOC emissions, which exhausts to the atmosphere.

One (1) 1000 gallon aboveground diesel storage tank, identified as DST #5, installed in 2010.

(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 Petroleum Product Storage PSD BACT [326 IAC 2-2]

The petroleum product storage shall be limited as follows:

(a) Pursuant to 326 IAC 2-2 and PSD 107-2764-00038, issued November 30, 1993, amended August 11, 1999 via A 107-11154-00038, the one (1) 500 gallon aboveground gasoline storage tank (GST #1) shall use submerged filling technology to control VOC emissions.

(b) Pursuant to 326 IAC 2-2 and PSD 107-2764-00038, issued November 30, 1993, amended August 11, 1999 via A 107-11154-00038, the three (3) 500 gallon aboveground diesel storage tanks (DST #1, DST #2, DST #3) shall use submerged filling technology to control VOC emissions.

(c) Pursuant to 326 IAC 2-2 and PSD 107-2764-00038, issued November 30, 1993, amended August 11, 1999 via A 107-11154-00038, the one (1) 5000 gallon aboveground diesel storage tank (DST #4) shall use submerged filling technology to control VOC emissions.

(d) Pursuant to PSD 107-2764-00038, issued November 30, 1993, the visible emissions from each petroleum product storage tank shall not exceed 5% opacity, based on a 6-minute average.

SECTION D.11 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COOLING TOWERS

(v) The contact and noncontact cooling towers are equipped with drift eliminators. Each cooling tower exhausts to the atmosphere.

(1) The cooling towers listed in the table below are subject to BACT:

Cooling Towers	No. of Cells	Average Capacity (gal/min)
Castrip Contact*	4	12,000
Castrip Non Contact*	7	14,400
Vacuum Degasser Contact*	1	8,000
Vacuum Degasser Non Contact*	1	8,000
Hot Mill Contact**	5	25,000

*Note: The cooling towers that are subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.
**The Hot Mill Contact cooling tower is subject to BACT per SSM 107-36834-00038.

(2) The cooling towers listed in the table below are not subject to BACT[2]:

Cooling Towers	No. of Cells	Average Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Meltshop Non Contact	9	60,000	Galvanizing/Annealing Non Contact	2	6,500
[1]Meltshop Caster Contact	2	5,000	Annealing Non Contact	2	5,000
[1]Meltshop Caster Contact (expansion)	2	5,000			
Hot Mill Non Contact	4	25,319			
Laminar Contact	3	11,600	LINDE Non Contact (CT-91B)	2	3,200
Cold Mill Non Contact	2	10,000			
Cold Mill Non Contact (expansion)	1	5,000			

(a) One (1) Cooling Tower, approved in 2012 for construction, with average capacity of 1,840 gallons per minute (gpm), located at LINDE GASES PLANT.

[2] Note: The cooling towers that are not subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.

INSIGNIFICANT ACTIVITIES – COOLING TOWERS

(a) One (1) Non-Contact Cooling Tower, identified as CT-91A, approved in 2010 for construction, with an average capacity of 900 gallons per minute (gpm), located at LINDE GASES PLANT.

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

[1] An increase in the actual water circulation rate of 1,400 gallon per minute (gpm) will result at the Meltshop Caster Cooling Tower due to the caster quench but will not increase its permitted average capacity of 10,000 gpm.

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

D.11.1 Cooling Towers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2, PSD SSM 107-16823-00038, issued November 21, 2003, and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee shall comply with the following BACT requirements for the Castrip Contact, Castrip Non Contact, Vacuum Degasser Contact and Vacuum Degasser Non Contact cooling towers:

(a) The design drift rate from each cooling tower shall not exceed 0.005%.

(b) The Permittee shall retain records demonstrating that the cooling towers are designed to achieve 0.005% drift.

(c) The visible emissions from each cooling tower shall not exceed 20% opacity, based on a 6-minute average.

D.11.2 Cooling Towers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 and PSD/SSM 107-36834-00038, the Permittee shall comply with the following BACT requirements:

(a) PM, PM_{10}, and $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall be controlled by the use of drift eliminators with a maximum designed drift rate not to exceed 0.001%.

(b) PM emissions from the Hot Mill contact cooling tower shall not exceed 0.38 lb/hr.

(c) PM_{10} emissions from the Hot Mill contact cooling tower shall not exceed 0.19 lb/hr.

(d) $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall not exceed 0.001 lb/hr.

D.11.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.11.4 Drift/Mist Eliminators [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, and PSD SSM 107-21359-00038, issued April 27, 2006, the integral drift/mist eliminators shall be in operation at all times that the Castrip Contact, Castrip Non Contact, Vacuum Degasser Contact and Vacuum Degasser Non Contact cooling towers are in operation.

SECTION D.12 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – SCRAP HANDLING AND PROCESSING

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(a) Cutting of scrap metals and scrap substitutes. Except as authorized in Condition D.12.1(c) of this permit cutting of certain types of scrap should be performed indoors and exhaust to general ventilation.

Outdoor unloading/loading/sorting of scrap metal and scrap substitutes including pig iron, DRI, HBI, Iron Carbide

(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.12.1 Scrap Cutting [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-16823-00038, issued November 21, 2003, the Permittee shall comply with the following BACT requirements:

(a) Skulls, coils and steel scrap shall be mechanically reduced in size. Any skull, coil, steel scrap not mechanically reduced in size can be lanced out or transported to the steel works building or another suitable building.

(b) Good working practices shall be observed.

(c) Scrap cutting allowed outdoors is limited to scrap items such as furnace roof, railroad cars, ductwork and long pieces of scrap, pipe and bar stock, that can not fit in the existing scrap cutting building. Galvanized scrap shall not be cut outdoors. Outdoor means the cutting is done outside of a building.

(d) The visible emissions from the building enclosing the scrap cutting operation shall not exceed 3% opacity based on a 6-minute average.

(e) The visible emissions from the outdoor scrap cutting operation shall not exceed 3% opacity based on a 6-minute average.

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

D.12.2 Visible Emissions Notations

(a) Visible emission notations of scrap cutting shall be performed once per day when scrap cutting is performed in a building. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

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

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

D.12.3 Record Keeping Requirements

(a) To document the compliance status with Condition D.12.1(e), the Permittee shall maintain records of the Method 9 visible emission readings.

(b) To document the compliance status with Condition D.12.2, the Permittee shall maintain records of the once per day visible emission notations from the scrap cutting and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.13 FACILITY OPERATION CONDITIONS

Emission Unit Description:

EMERGENCY GENERATORS

(w1) Diesel fired generators and air compressors for power outages and emergencies.

(1) Cold Mill Cooling tower emergency generator, identified as GEN #3, constructed in 1997, with a capacity of 280 HP, with emissions uncontrolled.

(2) Hot Mill NC Cooling Tower emergency generator, identified as GEN #1, constructed in 1989, with a capacity of 2,100 HP, with emissions uncontrolled.

(3) Galv Line Pot emergency generator, identified as GEN #4, constructed in 1992, with a capacity of 890 HP, with emissions uncontrolled.

(4) MS Cooling Tower emergency generator, identified as GEN #2, constructed in 1996, with a capacity of 2,520 HP, with emissions uncontrolled.

(5) Lip Seal emergency generator, identified as GEN #5, constructed in 1988, permitted in 2013, with a capacity of 30 HP with emissions uncontrolled

(6) Guard House emergency generator, identified as GEN #6, constructed in 2005, permitted in 2013, with a capacity of 67 HP with emissions uncontrolled

(7) VTD emergency generator, identified as GEN #7 with a capacity of 134 HP, constructed in 2003, permitted in 2013, with emissions uncontrolled,

(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.13.1 Emergency Generators PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 and PSD/SSM 107-16823-00038, issued November 21, 2003, and PSD/SSM 107-32615-00038 the Permittee shall comply with the following BACT requirements:

(a) The emergency generators, shall solely provide backup power when electric power is interrupted, during plant or equipment maintenance or during maintenance or testing of generators.

(b) Each emergency generator, shall not operate more than 500 hours per 12- consecutive month period including the hours when maintenance and testing of these generators is performed, with compliance demonstrated at the end of each month.

(c) The sulfur content of the diesel fuel used from all generators, shall not exceed 0.05% by weight.

(d) Good combustion practices shall be performed for all generators.

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

D.13.2 Record Keeping Requirements

(a) To document the compliance status with Condition D.13.1(b), the Permittee shall maintain records of the hours of operation of each emergency generator.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.14 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – FUEL DISPENSING FACILITIES

(g) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles or other mobile equipment, having a storage capacity less than or equal to 10,500 gallons.

A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day, or less.

(1) One (1) 10,000 gallon diesel storage tank, handling less than 3,000 gallons per day.

(2) One (1) 1,000 gallon diesel storage tank handling less than 500 gallons per day.

(3) One (1) 500 gallon diesel storage tank, located at the Steel Technologies Plant.

(4) One (1) 1,000 gallon diesel storage tank handling less than 500 gallons per day, installed in 2003.

(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.14.1 Gasoline Dispensing Facilities [326 IAC 8-4-6]

(a) Pursuant to 326 IAC 8-4-6, the Permittee operating a gasoline dispensing facility shall not allow the transfer of gasoline between any transport and any storage tank unless such a tank is equipped with the following:

(1) A submerged fill pipe.

(2) Either a pressure relief valve set to release at no less than seven-tenths (0.7) pounds per square inch or an orifice of five-tenths (0.5) inch in diameter.

(3) A vapor balance system connected between the tank and the transport, operating according to the manufacturer's specifications.

(b) If the Permittee is not present during loading, it shall be the responsibility of the owner or operator of the transport to make certain the vapor balance system is connected between the transport and the storage tank and is operating according to the manufacturer's specifications.

SECTION D.15 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – PICKLE LINES 1 AND 2

(x) Both Pickle Lines use enhanced HCl pickling solution and rinse water and are equipped with process tanks.

(1) Pickle Line 1, identified as PL1, constructed in 1988, with a maximum capacity of 250 tons/hr, controlled by a counter flow-packed scrubber and mist eliminators, and exhausting to stack S-17. The Pickle Line 1 scrubber has a design flow rate of 12,000 acf/min and a loading of 0.01 gr/dscf. Each pickle line has an electric static oiler.

Under 40 CFR Part 63, Subpart CCC, Pickle Line 1 is considered an existing continuous pickle line.

(2) Pickle Line 2, consisting of the following units:

(A) One (1) Pickle Line, identified as PL2, constructed in 1997, approved in 2013 for modification to allow processing of wider strip of steel with a maximum capacity of 250 tons/hr, controlled by a tray scrubber and mist eliminators, and exhausting to stack S-18. The Pickle Line 2 scrubber has a design flow rate of 9,000 acf/min and a loading of 0.01 gr/dscf. Each pickle line has an electric static oiler.

Under 40 CFR Part 63, Subpart CCC, Pickle Line 2 is considered an existing continuous pickle line.

(3) The tank farm treats the rinse water from Pickle Line 1 and Pickle Line 2. These tanks also store spent acid, raw acid, regenerated acid, oily wastewater treated waters for reuse, treatment process wastewater, and other process and treated waters.

(4) One (1) pinch roll/flattener for pickling heavy gauge steel and high carbon steel products, approved in 2012 for construction.

Under 40 CFR Part 63, Subpart CCC, the tanks that store virgin or regenerated hydrochloric acid are considered new hydrochloric acid storage vessels.

(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.15.1 Pickling PSD BACT [326 IAC 2-2]

(a) Pursuant to 326 IAC 2-2-3 (Control Technology Requirements) and PSD/SSM 107-16823-00038, issued on November 21, 2003, Pickle Line 1 (PL1) shall comply with the following BACT requirements:

(1) Pickling line (PL1) shall be controlled by its own scrubber and with an exhaust grain loading of no greater than 0.01 gr/dscf.

(2) The pickling tank shall operate with a closed vent system, covered by lids, and maintained under negative pressure, except during loading and unloading.

(3) Loading and unloading shall be conducted either through enclosed lines or each point shall be controlled.

(4) The visible emissions from each pickling line scrubber stack shall not exceed 5% opacity, based on a 6-minute average.

(5) Good working practices shall be observed, such as adjusting damper controls and settings on the fume systems.

(b) Pursuant to 326 IAC 2-2-3 Control Technology Requirements) and PSD/SSM 107-32615-00038, Pickle Line 2 (PL2) shall comply with the following BACT requirements:

(1) Pickling Line, identified as PL2 shall be controlled by a dedicated scrubber.

(2) The PM (filterable) emissions from the PL2 Scrubber shall not exceed 0.01 gr/dscf.

(3) The PM10 and PM2.5 (filterable and condensible) emissions from the PL2 Scrubber shall not exceed 0.01 gr/dscf.

(4) The pickling tank shall operate with a closed vent system, covered by lids, and maintained under negative pressure, except during loading and unloading.

(5) Loading and unloading shall be conducted either through enclosed lines or each point shall be controlled.

(6) The visible emissions from each pickling line scrubber stack shall not exceed 5% opacity, based on a 6-minute average.

(7) Good working practices shall be observed, such as adjusting damper controls and settings on the fume systems.

D.15.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from Pickle Line 1 and Pickle Line 2 (PL1 and PL2) each shall not exceed 61.0 pounds per hour each when operating at process weight rates of 250 tons per hour each.

The pounds per hour limitation was calculated with 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

D.15.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Pickle Lines 1 and 2 (PL1 and PL2) and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.15.4 Scrubber Operation [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, 326 IAC 2-2 and as revised in this permit modification:

(a) The Pickle Line 1 (PL1) scrubber and mist eliminator shall be in operation and control emissions at all times that the Pickle Line 1 is in operation.

(b) The Pickle Line 2 (PL2) scrubber and mist eliminator shall be in operation and control emissions at all times that pickling is occurring at Pickle Line 2.

D.15.5 Testing Requirements [326 IAC 2-7-6(1)][326 IAC 2-1.1-11]

(a) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct the following compliance stack testing for the PL1 scrubber used in conjunction with the Pickle Line No. 1 to demonstrate compliance with Condition D.15.1(a) by:

(1) Determine the collection efficiency of the control devices by simultaneously measuring mass flows of HCl at the inlet and outlet of the control devices, or

(2) Measure the HCl concentration in gases exiting the process or control devices.

(b) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct the following compliance stack testing for the PL2 scrubber controlling the Purdue Pickle Line No. 2 to demonstrate compliance with Condition D.15.1(a) by:

(1) Determine the collection efficiency the control devices by simultaneously measuring mass flows of HCl at the inlet and outlet of the control devices, or

(2) Measure the HCl concentration in gases exiting the process or control devices.

Testing shall be completed utilizing methods specified in 40 CFR Part 63, Subpart CCC or other methods as approved by the Commissioner.

(c) Any stack which has multiple processes which exhaust to the same stack shall operate all of the processes simultaneously in accordance with 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

(d) These tests required in (a) (b) of this condition shall be repeated for the control devices associated with Pickle Line No. 1 and Pickle Line No. 2 at least once every 2.5 years from the date of a valid compliance demonstration.

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

D.15.6 Scrubber Failure Detection [40 CFR 64]

In the event that a scrubber malfunction 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 - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.15.7 Scrubbers Parametric Monitoring [40 CFR 64]

The Permittee shall record the pressure drop, scrubber recirculating water flow rate and fresh water make up flow into PL1 scrubber used in conjunction with Pickle Line 1; and pressure drop, and fresh water make up flow into PL2 scrubber used in conjunction with Pickle Line 2 at least once per day when each pickle line is in operation. When for any one reading each parametric range or the minimum operating parameter for the PL1 scrubber and PL2 scrubber are outside each normal range in the following table until each scrubber operating parameter and pressure

drop range are re-established during the latest compliance stack test, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit

Scrubber ID	Pressure Drop Range across the Scrubber (inches)	Minimum Flow Rate of Scrubber Recirculating Water Flow (gallons/minute)	Fresh Water Make up Flow into Scrubber (gallon/minute)
Pickle Line 1 Scrubber	2.8 - 4.8	110	1.0
Pickle Line 2 Scrubber	4.9 - 7.8	N/A	2.5

The instruments used for determining the pressure drop across the scrubbers, flow rate of the scrubbers recirculating water and flow rate of the fresh make up water into the scrubbers shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

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

D.15.8 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Condition D.15.7, the Permittee shall maintain once per day records of the pressure drop, scrubber recirculating water flow rate and fresh water make up flow into PL1 scrubber used in conjunction with Pickle Line 1; and pressure drop, and fresh water make up flow into PL2 scrubber used in conjunction with Pickle Line 2 during normal operation and the reason for the lack of operating parameter notations (e.g. the process did not operate that day).

(b) Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.16 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – COLD REVERSING MILL 1, COLD MILL BOILER (CMB #1)

(y) Cold Reversing Mill 1, identified as EU-09, constructed in 1988, with a maximum capacity of 250 tons/hour. Emulsion oil is sprayed on the strip, controlled by hoods mounted on both sides of the mill stand and exhausting**,** through collision mist eliminators at a design flow rate of 84,000 acf/min and 0.01 gr/dscf, to stack S-32.

(z) One (1) natural gas fueled Cold Mill Boiler, identified as CMB#1, constructed in 1988, with a heat input capacity of 34 MMBtu per hour, with emissions uncontrolled and exhausting to stack S-19. The boiler uses propane as a backup fuel.

(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.16.1 Cold Reversing Mill 1 PSD BACT Limit [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-16823-00038, issued November 21, 2003, the Permittee shall comply with the following BACT requirements:

(a) The Cold Reversing Mill 1 (EU-09) shall not exceed its annual maximum capacity of 2,190,000 tons per twelve (12) consecutive month period with compliance demonstrated at the end of each month.

(b) The VOC emissions from the Cold Reversing Mill 1 (EU-09) shall not exceed 0.06 lb/ton of steel.

(c) The Cold Reversing Mill 1 shall comply with the following existing requirements specified in PSD 107-2764-00038, issued November 30, 1993:

(1) PM and PM_{10} emissions from the Cold Reversing Mill 1 (EU-09) shall be captured by hoods mounted on both sides of the mill stand and evacuated to a panel-type media packed collision mist eliminator and filter prior to venting to the atmosphere.

(2) Filterable PM and filterable PM_{10} emissions shall not exceed 0.01 gr/dscf, 7.2 pounds per hour, and 31.5 tons per year.

(3) The emissions from the Cold Reversing Mill 1 (EU-09) shall not exceed 5 percent opacity. Compliance with this condition shall be determined using 40 CFR 60 Appendix A, Method 9 and 326 IAC 5-1.

D.16.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the Cold Reversing Mill 1 (EU-09) shall not exceed 61.0 pounds per hour when operating at a process weight rate of 250 tons per hour.

The pounds per hour limitation was calculated with 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

D.16.3 Cold Mill Boiler (CMB #1) PSD BACT [326 IAC 2-2]

Pursuant to PSD 107-2764-00038, issued November 30, 1993 and 326 IAC 2-2, the Permittee shall comply with the following BACT requirements for the Cold Mill Boiler (CMB #1) until it is modified as permitted by PSD SSM 107-16823-00038, issued November 21, 2003:

(1) The emissions shall not exceed 5 percent opacity. Compliance with this condition shall be determined using 40 CFR 60 Appendix A, Method 9 and 326 IAC 5-1.

(2) The Cold Mill Boiler (CMB #1) shall only use natural gas and propane as back-up fuel.

(3) The heat input shall not exceed 34.0 MMBtu per hour.

(4) PM/PM10 emissions shall not exceed 3.0 pounds per million cubic feet of natural gas burned, 0.1 pounds per hour and 0.4 tons per year.

(5) NOx emissions shall be controlled by the use of staged combustion low NOx burners, or their equivalent, and shall not exceed 200 pounds per million cubic feet of natural gas burned, 6.8 pounds per hour and 29.8 tons per year.

(6) CO emissions shall not exceed 35.0 pounds per million cubic feet of natural gas burned, 1.2 pounds per hour and 5.2 tons per year.

(7) VOC emissions shall not exceed 2.8 pounds per million cubic feet of natural gas burned, 0.1 pounds per hour and 0.4 tons per year.

D.16.4 Particulate Matter Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate matter (PM) from the 34.0 MMBtu per hour heat input Cold Mill boiler (CMB #1) shall be limited to 0.436 pounds per MMBtu heat input.

These limitations are based on the following equation:

$Pt = 1.09 / Q^{0.26}$

where Pt = Pounds of PM emitted per million Btu (lb/MMBtu) heat input, and
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu per hour) heat input.

The Q at the source at the time CMB #1 was permitted.
(Q = 34 MMBtu/hr)

The Q at the source at the time Steel Technologies Boiler was permitted:
(Q = 34 + 9 +15 + 9.98 + 71.04 + 10.9 + 4.8 = 154.72)

D.16.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.16.6 Mist Eliminators [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, the mist eliminators for particulate control shall be in operation and control emissions at all times that Cold Reversing Mill 1 (EU-09) is in operation.

D.16.7 Natural Gas Fuel [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, the Permittee shall use pipeline natural gas that is a 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 the supplier through a pipeline.

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.

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

D.16.8 Mist Eliminator Parametric Monitoring [40 CFR 64]

The Permittee shall record the pressure drop across the Mist Eliminator used in conjunction with the Cold Reversing Mill, EU-09, at least once per day when the process is in operation. When for any one reading, the pressure drop across the Mist Eliminator is outside the normal range of 1.0 to 10.0 inches of water until a range is established during the latest stack test, the Permittee shall take reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

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

D.16.9 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Condition D.16.1, the Permittee shall maintain monthly records of steel production.

(b) To document the compliance status with Condition D.16.8, the Permittee shall maintain once per day pressure drop across the Mist Eliminator used in conjunction with the Cold Reversing Mill, EU-09 during normal operation and the reason for lack of pressure drop notation (e.g. the process did not operate)

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.16.10 Reporting Requirements

A quarterly report of the information needed to document compliance with Condition D.16.1(a) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.17 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – REVERSING AND TEMPERING (R/T) MILL

(bb) Reversing and Tempering (R/T) Mill, (previously known as Temper Mill), identified as EU-14, constructed in 1995, with a maximum capacity of 250 tons of steel per hour, with emulsion oil sprayed on the strip, and controlled by hoods mounted on both sides of the mill stand and a fabric filter, exhausting through a panel-type collision mist eliminators to stack S-22. The panel-type collision mist eliminator has a design flow rate of 84,000 acf/min and an outlet grain loading of 0.01 gr/dscf. Note: This mill can reverse and temper. The mist eliminators operate as controls only when the mill is operating as a cold reversing mill.

(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.17.1 Reversing and Tempering (R/T) Mill PSD BACT [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, and 326 IAC 2-2, the Permittee shall comply with the following BACT requirements:

(a) The R/T Mill shall not exceed its annual maximum capacity of 2,190,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month on a rolling 12-month basis.

(b) This R/T Mill is allowed to reverse and temper.

(c) The VOC emissions from the R/T Mill shall not exceed 0.06 lb/ton.

(d) The visible emissions from the R/T Mill stack shall not exceed 5% opacity, based on a 6-minute average.

(e) The R/T Mill shall comply with the following requirements specified in PSD 107-3702-00038, issued March 28, 1995:

(1) When reversing, PM and PM10 emissions from the R/T Mill shall be captured by hoods mounted on both sides of the mill stand and evacuated to a panel-type media packed collision mist eliminator and filter prior to venting to the atmosphere.

(2) When reversing, filterable PM and PM_{10} shall not exceed 0.01 gr/dscf, 7.2 pounds per hour, and 31.5 tons per year.

D.17.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the R/T Mill shall not exceed 61.0 pounds per hour when operating at a process weight rate of 250 tons per hour.

The pounds per hour limitation was calculated with 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

D.17.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP), in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

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

D.17.4 Mist Eliminators [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, the mist eliminators for particulate control shall be in operation and control emissions at all times that the R/T Mill is in operation as a cold reversing mill.

D.17.5 Mist Eliminator Parametric Monitoring [40 CFR 64]

The Permittee shall record the pressure drop across the Mist Eliminator used in conjunction with the Reversing and Tempering (R/T) Mill, at least once per day when the process is in operation. When for any one reading, the pressure drop across the Mist Eliminator is outside the normal range of 1.0 and 10.0 inches of water until a range is established during the latest stack test, the Permittee shall take reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

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

D.17.6 Record Keeping Requirements

(a) To document the compliance status with Condition D.17.1(a), the Permittee shall maintain monthly records of the amount of steel processed in the R/T Mill.

(b) To document the compliance status with Condition D.17.5, the Permittee shall maintain once per day pressure drop across the Mist Eliminator used in conjunction with the Reversing and Tempering (R/T) Mill during normal operation and the reason for lack of pressure drop notation (e.g. the process did not operate)

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.17.7 Reporting Requirements

A quarterly report of the information needed to document compliance with Condition D.17.1(a) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.18 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – ALKALINE CLEANING STATION

(cc) Alkali Cleaning at the Galvanizing line with mist eliminator as control. Emissions are exhausted to stack #510. The Alkaline Cleaning Station has a capacity of 140 tons of steel 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.18.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the Galvanizing Line Alkaline Cleaning Station shall not exceed 54.7 pounds per hour when operating at a process weight rate of 140 tons per hour.

The pounds per hour limitation was calculated with 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

D.18.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the Galvanizing Line Alkaline Cleaning Station and the mist eliminators. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.18.3 Mist Eliminators [326 IAC 2-2]

The mist eliminators for particulate control shall be in operation and control emissions at all times that the Galvanizing Line Alkaline Cleaning Station is in operation.

SECTION D.19 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – ANNEALING FURNACES

(dd1) Eighteen (18) natural gas-fueled batch Annealing Furnaces, identified as EU-03, constructed in 2001. Each has a heat input capacity of 4.8 MMBtu per hour and a maximum throughput capacity of 200 tons of steel per hour. Emissions are uncontrolled and exhaust to roof vent (S-26).

(dd2) One (1) natural gas-fired annealing furnace, identified as AN-19, approved for construction in 2007, with a heat input capacity of 4.8 MMBtu per hour and a maximum throughput capacity of 200 tons of steel per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to roof vent (S-26).

(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.19.1 Annealing Furnace PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-21359-00038, issued April 27, 2006, the eighteen (18) batch annealing furnaces identified as EU-03 and constructed in 2001 shall comply with the following BACT requirements:

(a) Each batch annealing furnace shall be equipped and operated with low NO_x burners.

(b) The NO_x emissions from each annealing furnace shall not exceed 0.10 lb/MMBtu.

(c) The CO emissions from each annealing furnace shall not exceed 0.084 lb/MMBtu.

(d) The annealing furnaces shall use natural gas as primary fuel and may utilize propane as a back up fuel.

D.19.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from each of the nineteen (19) annealing furnaces in the Cold Mill shall not exceed 58.5 pounds per hour when operating at a process weight rate of 200 tons per hour.

The pounds per hour limitation was calculated with 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

D.19.3 PSD Limit [326 IAC 2-2]

The input of propane to annealing furnace AN-19, combined with the input of propane to emission units LP #4, LP #7, TD #3, MD #1, MD #2, LDS #1, LP #1, LP #2, LP #3, and LP #5 (permitted in Section D.29) shall be limited to less than 1,089 thousand gallons of propane (LPG) per twelve consecutive month period, with compliance determined at the end of each month. NOx emissions shall not exceed 0.208 pounds per MMBtu when burning propane.

Compliance with this limit will ensure that the potential to emit from the modification performed under SSM 107-23609-00038 is less than forty (40) tons of NOx per year and will render the requirements of 326 IAC 2-2 (PSD) not applicable.

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

D.19.4 Vendor Certification

The Permittee shall submit the vendor design guarantees for the above-mentioned batch annealing furnace to demonstrate compliance with Operation Conditions D.19.1(a), (b), and (c).

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

D.19.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.19.3, the Permittee shall maintain records of the actual quantity of propane (LPG) used in annealing furnace AN-19. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the limit established in Condition D.19.3. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.19.6 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.19.3 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.20 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – COLD MILL – QUALITY CONTROL/REWIND INSPECTION LINE

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(h) The unwinding and rewinding of steel coil for quality control inspections and the Cold Mill Quality Control Furnace.

(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.20.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the Quality Control/Rewind Inspection Line shall not exceed 46.3 pounds per hour when operating at a process weight rate of 60 tons per hour.

The pounds per hour limitation was calculated with 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

SECTION D.21 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – ACID REGENERATION

(ee) Acid Regeneration system, identified as EU-04, constructed in 1989, consisting of two natural gas fueled tangentially fired burners with a maximum rating of 5.6 MMBtu per hour, and an absorber and cyclone with emissions controlled by its own counter flow packed scrubber (identified as AR scrubber) with mist eliminator exhausting to stack S-31. The counter flow-packed scrubber has a design flow rate of 4,269 acf/min and loading of 0.04 gr/dscf. Propane is used as back up fuel.

Under 40 CFR Part 63, Subpart CCC, this unit is considered an existing acid regeneration plant.

(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.21.1 Acid Regeneration PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD SSM 107-24348-00038, the acid regeneration system (EU-04) shall comply with the following BACT limits:

(a) The two (2) tangentially fired burners shall burn natural gas as primary fuel and propane as back up fuel.

(b) The gas shall be cleaned in a cyclone, absorber, and a counter flow-packed scrubber prior to being vented to the atmosphere through the exhaust fan and stack.

(c) PM and PM10 emissions shall be limited to 2.0 pounds per hour and 8.8 tons per year.

(d) NOx emissions shall be limited to 100 pounds per million cubic feet of natural gas burned, 0.56 pounds per hour, and 2.45 tons per year.

(e) CO emissions shall be limited to 84 pounds per million cubic feet of natural gas burned, 0.47 pounds per hour, and 2.06 tons per year.

(f) Volatile organic compound emissions shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.31 pounds per hour, and 1.35 tons per year.

(g) Visible emissions from the acid regeneration scrubber/control system shall not exceed 5% opacity, based on a 6-minute average.

D.21.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the acid regeneration system (EU-04) shall not exceed 11.6 pounds per hour when operating at a process weight rate of 4.75 tons per hour.

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 following equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour, and
P = process weight rate in tons per hour

D.21.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the acid regeneration system (EU-04) and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.21.4 Scrubber Operation

Pursuant to PSD 107-2764-00038, issued November 30, 1993, the counter flow-packed scrubber shall be in operation and control emissions at all times that the acid regeneration system (EU-04) is in operation.

D.21.5 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall perform testing to measure the HCl and Cl2 concentrations utilizing methods specified in 40 CFR Part 63, Subpart CCC or other methods as approved by the Commissioner.

(b) Any stack which has multiple processes which exhaust to the same stack shall operate all of the processes simultaneously in with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

(c) These tests shall be repeated at least once every 2.5 years from the date of a valid compliance demonstration.

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

D.21.6 Scrubber Monitoring

(a) The Permittee shall continuously monitor the flow rate of the scrubbing liquid. For the purposes of this condition, continuously means Permittee shall measure the flow rate no less often than once per minute and calculate the flow rate as a rolling 3-hour average. When for any one 3-hour average, the flow rate is below the minimum of 80 gallons per minute until a minimum flow rate is established during the latest stack test, an alarm will notify Permittee and the Permittee shall take reasonable steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A 3-hour average flow rate reading that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

In the event that the automatic alarm system fails for any reason, Permittee shall record the 3-hour average, if available, or instantaneous flow rate, every three hours. If the flow rate is below the minimum of 80 gallons per minute or the minimum established during the latest stack test, Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps or failure to correct the malfunction within a reasonable time shall be considered a deviation from this permit.

(b) The instruments used for determining the flow rate shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once a year.

D.21.7 Scrubber Detection

In the event that a scrubber malfunction 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 - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

D.21.8 Record Keeping Requirements

(a) To document the compliance status with Conditions D.21.6 and D.21.7, the Permittee shall maintain records of:

(1) A representative 3-hour average flow rate recorded once per shift.

(2) Documentation of all reasonable response steps implemented for every 3-hour average flow rate reading outside of the normal range.

(3) Documentation of each instance in which the automatic alarm system in Condition D.21.6(a) is non-operational and Permittee manually records the flow rate every three hours. The Permittee shall maintain records of corrective actions taken and when the automatic alarm system is restored to operation.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.22 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – GALVANIZING LINE/GALVANNEAL, CONTINUOUS ANNEALLING, PHOSPHATE AND CHROMATE APPLICATION

(ff) Thirty six (36) Main Burners, identified as PHB #1 – PHB #36, constructed in 1992, and modified in 2002, input capacity of 1.622 MMBtu per hour each, and three (3) Auxiliary Burners, each with a heat input capacity of 0.1 MMBtu per hour in the preheat furnace section of the galvanizing line using natural gas rated at maximum total capacity of 58.7 MMBtu per hour. The burners use natural gas as primary fuel and propane as backup fuel. The main burners exhaust to stack S-27. The NOx emissions from PHB #1 – PHB #36 are controlled by a Selective Catalytic Reduction/Selective Non-Catalytic Reduction (SCR/SNCR) Systems. A continuous emissions monitor (CEM) is used to monitor NOx emissions. The galvanizing line has an electrostatic oiler. The three (3) Auxiliary Burners exhaust to the atmosphere.

(gg) Additional burners as follows:

(1) Forty four (44) Burners, identified as RB#1 – RB#44, constructed in 2002, each with a heat input capacity of 0.323 MMBtu per hour in radiant tube section with a maximum total capacity of 14.2 MMBtu per hour and option to replace non-conforming burners. The NOx emissions are controlled by a SCR System. The SCR/SNCR and SCR systems shall be referred to collectively as the SCR/SNCR system. The burners use natural gas as primary fuel and propane as backup fuel and exhaust to stack S-27.

(2) One (1) auxiliary burner with a maximum heat input of 3.2 MMBtu/hr in the Alkaline Cleaning Section. Emissions are uncontrolled and exhausting outside the building. The burner is natural gas fired and use propane as backup.

(3) Two (2) auxiliary burners with a maximum heat input of 1.5 MMBtu/hr each in the Strip Dryer Section. The burners are natural gas fired and use propane as backup.

(4) Four (4) auxiliary burners with a maximum heat input of 0.052 MMBtu/hr each in the Pot Roll Heater. The burners are natural gas fired and use propane as backup.

(5) Two (2) auxiliary burners with a maximum heat input of 0.013 MMBtu/hr each in the Preheat open end burners section. The burners are natural gas fired and use propane as backup.

The SCR/SNCR and SCR systems shall be referred to collectively as the SCR/SNCR system.

(hh) One (1) Zinc Coating pot, identified as ZP#1, constructed in 1992, with a maximum capacity of 140 tons of steel per hour, uncontrolled and exhausting to the atmosphere.

(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.22.1 Nitrogen Oxides (NOx) – PSD BACT [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3, Agreed Order 2000-8861-A, and PSD SSM 107-14297-00038, issued June 6, 2002, the total nitrogen oxide(s) (NOx) emissions from the 36 Main Burners, each at 1.622 MMBtu per hour and 3 Auxiliary Burners, each at 0.1 MMBtu per hour in the preheat furnace section of the galvanizing line shall not exceed 2.9 pounds

per hour which is equivalent to 50 pounds per million standard cubic feet of natural gas used on a twenty four (24) operating hour block average.

(b) Pursuant to 326 IAC 2-2-3, Agreed Order 2000-8861-A, and PSD SSM 107-14297-00038, issued June 6, 2002, the total nitrogen oxide(s) (NOx) emissions from the 44 Burners, each at 0.323 MMBtu per hour in the radiant tube section of the galvanizing line shall not exceed 2.8 pounds per hour which is equivalent to 200 pounds per million standard cubic feet of natural gas used on a twenty four (24) operating hour block average.

(c) During the Startup and Shutdown period, the SCR/SNCR operations are exempt from complying with the above limits for this duration. The Permittee shall not produce more than incidental product during the Startup and Shutdown period from the Galvanizing line.

(d) During the refractory lining drying period, the SCR/SNCR operations are exempt from complying with the above limits for this duration. The Permittee shall not produce more than incidental product during the refractory lining drying period from the Galvanizing line.

D.22.2 Particulate Matter (PM/PM-10) PSD BACT Limits [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3, the total, filterable and condensible PM/PM10 emissions from the 36 Main Burners, each at 1.622 MMBtu per hour, and the 3 Auxiliary Burners, each at 0.1 MMBtu per hour in the preheat furnace section of the galvanizing line shall not 7.6 pounds per million standard cubic feet of natural gas usage and use good combustion practices.

(b) Pursuant to 326 IAC 2-2-3, the total, filterable and condensible PM/PM10 emissions from the 44 Burners, each at 0.323 MMBtu per hour in the radiant tube section of the galvanizing line shall not exceed 7.6 pounds per million standard cubic feet of natural gas usage and use good combustion practices.

D.22.3 Carbon Monoxide (CO) – PSD BACT [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 and PSD SSM 107-14297-00038, issued June 6, 2002, the CO emissions from the 36 Main Burners, each at 1.622 MMBtu per hour, the 3 Auxiliary Burners, each at 0.1 MMBtu per hour in the preheat furnace section, and 44 Burners, each at 0.323 MMBtu per hour in the radiant tube section of the galvanizing line shall not exceed 84 pounds per million standard cubic feet of natural gas usage using good combustion practices.

D.22.4 Volatile Organic Compounds (VOC) – PSD BACT [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 and PSD SSM 107-14297-00038, issued June 6, 2002, the VOC emissions from the 36 Main Burners, each at 1.622 MMBtu per hour, the 3 Auxiliary Burners, each at 0.1 MMBtu per hour in the preheat furnace section, and 44 Burners, each at 0.323 MMBtu per hour in the radiant tube section of the galvanizing line shall not exceed 5.5 pounds per million standard cubic feet of natural gas usage using good combustion practices.

D.22.5 Ammonia Limitations [326 IAC 2-1.1-5]

Pursuant to 326 IAC 2-1.1-5 and PSD SSM 107-14297-00038, issued June 6, 2002, the ammonia emissions from the galvanizing line SCR systems stack shall not exceed twenty-five (25) ppmvd corrected to 15% O_2.

D.22.6 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP), in accordance with Section B - Preventive Maintenance Plan, is required for the galvanizing line burners and their control device.

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

D.22.7 Nitrogen Oxides (NOx) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3, Agreed order 2000-8861-A, and PSD SSM 107-14297-00038, issued June 6, 2002, the SCR/SNCR on the preheat furnace and SCR on the radiant tube section of the Galvanizing line shall be in operation and control emissions from the burners at all times they are in operation. The SCR/SNCR systems shall be operated as recommended by the manufacturer to minimize the NOx emissions and ammonia slip.

D.22.8 Oxides of Nitrogen NOx (SCR operation) [326 IAC 2-2]

From the date of the valid stack test, which was March 9, 2001, during a startup, the Permittee shall start urea injection in the SCR/SNCR unit to control NOx emissions from the galvanizing line, as soon as the catalyst bed reaches 500^{o}F, the optimum catalyst temperature determined during the March 9, 2001 stack test.

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

D.22.9 Nitrogen Oxides (NOx) Emissions Monitoring [40 CFR Part 64][326 IAC 3-5][326 IAC 7-2-1(g)]

Pursuant to 326 IAC 2-5.1-3 and 326 IAC 2-2:

(a) The Permittee shall install a continuous emissions monitoring system or alternative monitoring plan as allowed under the Clean Air Act and 326 IAC 3-5-1(d).

(b) The Permittee shall install, calibrate, certify, operate and maintain a continuous emissions monitoring system to monitor NOx emissions, in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.

(1) The continuous emissions monitoring system (CEMS) shall measure the NOx emission rate in pounds per hour. The use of CEMS to measure and record the hourly NOx emission rates over a twenty-four (24) operating hour block averaging period is sufficient to demonstrate compliance with the limits established in the Conditions D.22.1(a) and D.22.1(b). The source shall maintain records of emission rates in pounds per hour.

(2) The Permittee shall submit to IDEM, OAQ, within ninety (90) days after the monitor installation, a complete written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.

(3) Relative accuracy tests and routine quarterly audits shall be performed in accordance with the contents of the standard operating procedures pursuant to 326 IAC 3-5-5.

(4) 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.

(5) The source may submit to the OAQ alternative emission factors based on the source's CEMS data (collected over one (1) season of operation; where a season is defined as the period of time from May 1 through September 30) and the corresponding site temperatures, to use in lieu of the vendor provided emission factors in instances of downtime. The alternative emissions factors must be approved by the OAQ prior to use in calculating emissions for the limitations established in this permit. The alternative emission factors shall be based upon collected monitoring and test data supplied from an approved continuous emissions monitoring system. In the event that the information submitted does not contain sufficient data to establish appropriate emission

factors, the source shall continue to collect data until appropriate emission factors can be established.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)][326 IAC 2-6.1-5(a)(2)]

D.22.10 Record Keeping Requirements

(a) To document the compliance status with Conditions D.22.1(a), D.22.1(b), and D.22.9, the Permittee shall maintain records of the continuous emission monitoring data in accordance with 326 IAC 3-5.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.22.11 Reporting Requirements

The Permittee shall submit the following information on a quarterly basis:

(a) Records of excess NOx emissions (defined in 326 IAC 3-5-7 and 40 Part 60.7) from the continuous emissions monitoring system. These reports shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

(b) A quarterly summary of the CEMs data used to document compliance with Conditions D.22.1(a) and D.22.1(b) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.23 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – WELDING

(i) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment including the galvanizing line welder.

(j) Structural steel and bridge fabrication activities using 80 tons or less of welding consumables.

(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.23.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the brazing equipment, cutting torches, soldering equipment, welding equipment, and structural steel and bridge fabrication activities shall not exceed a pound per hour emission rate established as E in the following formula:

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:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

or

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:

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

SECTION D.24 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SHEARS AND SIDE TRIMMERS

Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(k) Various shears located at various sites throughout the facility.

(l) Side trimmers located at various sites throughout the facility.

(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.24.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from the shears and side trimmers shall not exceed a pound per hour emission rate established as E in the following formula:

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:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

or

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:

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

SECTION D.25 FACILITY OPERATION CONDITIONS

Emission Unit Description:

HOT STRIP MILL & TUNNEL FURNACE SYSTEM

(ii) The Hot Strip Mill, identified as HSM, constructed in 1989, approved in 2013 for modification to allow rolling of wider strip of steel, with a maximum capacity of 502 tons/hour consisting of various rolling mill processes: Shearing, Descaling, Finishing, Rollout Table, Coilers, Skin Pass Mill and Roll Grinders. Parts of the Hot Mill Strip are controlled by water roll cooling or water sprays.

(jj) Tunnel Furnace System, identified as EU-02, constructed in 1989, approved in 2013 for modification to allow processing of wider strip of steel, with a maximum capacity of 502 tons/hour, with a maximum total heat input capacity of 132 MMBtu per hour, emissions uncontrolled, tunnel furnace 1 exhausts to stack S13 and S14, tunnel furnace 2 exhausts to stack S15, and consisting of:

(1) Tunnel Furnace 1 – Natural gas fired with a heat input capacity of 84 MMBtu per hour. Tunnel Furnace 1 was constructed in 1989 as part of the original Tunnel Furnace System and approved in 2012 to replace burners from 84 MMBtu/hr to 50 MMBtu/hr. approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel

(2) Tunnel Furnace 2 – Natural gas fired with a heat input capacity of 84 MMBtu per hour. Tunnel Furnace 2 was constructed in 1994 and approved in 2012 to replace burners from 84 MMBtu/hr to 50 MMBtu/hr. approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

(3) Shuttle Furnaces 1 and 2 – Natural gas fired with a heat input capacity of 13 MMBtu per hour each using low NOx burners. Shuttle Furnaces 1 and 2 were constructed in 1994 and approved for a burner replacement in 2008, approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

(4) Snub Furnace – Natural gas fired with a heat input capacity of 6 MMBtu per hour. The snub furnace was constructed in 1989 and modified in 1994, approved in 2013 for modification to allow processing of wider strip of steel. Propane may be used as a backup fuel.

(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.25.1 Hot Strip Mill PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD 107-2764-00038, issued on November 30, 1993, revised by PSD SSM 107-16823-00038, issued November 21, 2003, the Hot Strip Mill (HSM) shall comply with the following BACT requirements:

(a) The rolling mill in the Hot Strip Mill shall be operated using water roll cooling sprays or water sprays with PM, in solid or liquid form, collected in flumes and transported to the scale pit.

(b) PM and PM10 emissions from the Hot Strip Mill process shall be limited to 0 pound per hour.

(c) Fugitive emissions generated at the Hot Strip Mill shall not exceed 0% opacity when emitted from any roof monitor or building opening, based on a 6-minute average.

(d) The VOC emissions from the Hot Strip Mill (HSM) shall not exceed 0.06 lb/ton of steel produced.

D.25.2 Tunnel Furnace System PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD 107-3702-00038, issued March 28, 1995, and PSD/SSM 107-32615-00038 tunnel furnaces No. 1 and No. 2, shuttle furnaces No. 1 and No. 2, and the snub furnace, shall comply with the following requirements:

(a) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnaces Nos. 1 and 2 and Snub Furnace shall combust natural gas as the primary fuel. Compliance with Condition D.25.2(a) and Condition D.25.2(c) shall likewise satisfy the Lead (Pb) BACT for these furnaces.

(b) When burning natural gas the following BACT applies:

(1) The NOx emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 100 pounds per million cubic feet (lb/MMCF) of natural gas burned.

(2) The VOC emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 5.5 lb/MMCF.

(3) SO2 emissions from tunnel furnaces No. 1 and No. 2, shuttle furnaces No. 1 and No. 2, and the snub furnace shall not exceed 0.6 lb/MMCF.

(4) The PM10 and PM2.5 (Filterable and Condensable) emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 7.6 pounds per million cubic feet (lb/MMCF) of natural gas burned.

(5) The Particulate Matter (Filterable) emissions from the Snub Furnace shall not exceed 1.9 lb/MMCF.

(6) The CO emissions from the Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 84 lbs/MMCF.

(c) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnaces Nos. 1 and 2 and Snub Furnace combust propane as a backup fuel. The hours of operation for each emission unit when combusting propane shall be limited to less than 500 hours per twelve consecutive month period, with compliance at the end of each month. Compliance with this condition shall ensure compliance with the NAAQS Standards at the time of this project.

(d) When burning propane the following BACT applies:

(1) The NOx emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 0.013 lb/gal of propane burned.

(2) The VOC emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 0.001 lb/gal of propane burned.

(3) The PM10 and PM2.5 (Filterable and Condensable) emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnaces Nos. 1 and 2 and the Snub Furnace shall each not exceed 0.007 pound per gallon (lb/gal) of propane burned.

(4) The Particulate Matter (filterable) emissions from the Snub Furnace shall not exceed 0.002 lb/gal of propane burned.

(e) Shuttle furnaces No. 1 and No. 2 shall be equipped and operated with low NOx burners.

Pursuant to 326 IAC 2-2 and PSD 107-5235-00038, issued June 20, 1996 and PSD/SSM 107-32615-00038, the snub furnace shall comply with the following requirements:

(a) The NOx emissions from the snub furnace shall be limited to 100 lbs per million cubic feet of natural gas burned.

(b) The snub furnace shall be equipped and operated with low NOx burners.

D.25.3 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the Tunnel Furnace System (EU-02) shall not exceed 69.0 pounds per hour when operating at a process weight rate of 502 tons per hour.

The pounds per hour limitation was calculated with 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

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

D.25.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.25.2(c), the Permittee shall maintain records of the hours of operation of each of the furnaces when burning propane.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.26 FACILITY OPERATION CONDITIONS

Emission Unit Description:

HOT STRIP MILL – ANNEALING FURNACES

(kk) Two (2) natural gas-fired annealing furnaces using propane as a backup fuel, identified as HM #1 and HM #2, each with a maximum heat input capacity of 14.505 MMBtu per hour, both constructed in 2006. Emissions are controlled by low NOx burners and exhaust to the atmosphere.

(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.26.1 Nitrogen Oxides (NOx) [326 IAC 2-7-5]

Pursuant to 326 IAC 2-7-5, MSM 107-21527-00038, issued September 23, 2005, and MPM 107-21907-00038, issued May 24, 2006:

(a) The input of the natural gas to the annealing furnaces shall be limited to less than 501.3 million cubic feet of natural gas per 12 consecutive month period, with compliance determined at the end of each month. NOx emissions shall not exceed 0.098 lb NOx/MMBtu.

(b) For purposes of determining compliance with the fuel usage limit, 5.22 thousand gallons of propane (LPG) shall be equivalent to one million cubic feet of natural gas.

(c) When combusting propane, NOx emissions shall not exceed 0.208 lb NOx/MMBtu.

D.26.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from each annealing furnace (HM #1 and HM #2) in the Hot Mill shall not exceed 59.0 pounds per hour when operating at a process weight rate of 210 tons per hour each.

The pounds per hour limitation was calculated with 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

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

D.26.3 Record Keeping Requirements

(a) To document the compliance status with Condition D.26.1(a), the Permittee shall maintain actual type and quantity of fuel used (including gallons of propane, cubic feet of natural gas, and equivalent thousand gallons of propane LPG as million cubic feet of natural gas), monthly.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.26.4 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.26.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.27 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – DEGREASING

(m) Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21) consisting of: Degreasing operations, identified as DG, with a maximum throughput greater than 145 gallons per 12 months, uncontrolled and exhausting to the atmosphere.

(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.27.1 Cold Cleaner Operation [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2, the Permittee shall do the following with respect to unit DG:

(a) equip the cleaner with a cover;

(b) equip the cleaner with a facility for draining cleaned parts;

(c) close the degreaser cover whenever parts are not being handled in the cleaner;

(d) drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) provide a permanent, conspicuous label summarizing the operating requirements;

(f) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate to the atmosphere.

SECTION D.28 FACILITY OPERATION CONDITIONS

Emission Unit Description:

MELT SHOP – MATERIAL TRANSFER STATION

(ll) Material transfer station #1, located inside the building exhausting to general ventilation, which will service both the EAFs and the LMFs, used to transfer various types and grades of lime, carbon, foamy slag, scrap, scrap substitutes, and other alloys from rail cars. Railcars are unloaded to trucks, silos, or the meltshop alloy handling system. Identified as MT #1, constructed in 2003, and consisting of:

(1) Rail car bottom unloading through a rubber boot to a conveyor with emissions uncontrolled.

(2) One (1) totally enclosed conveyor, identified as MTC, constructed in 2003, with emissions controlled by a bin vent dust collector and exhausting to stack S-45.

(3) One (1) loading spout connected to the load truck with emissions uncontrolled.

(mm) Material transfer station #2, located inside the building and exhausting to the atmosphere, which services the EAFs and the LMFs, used to transfer various types and grades of lime, carbon, foamy slag, scrap, scrap substitutes, and other alloys from rail cars. Railcars are unloaded to trucks, silos, or the meltshop alloy handling system. Identified as MT #2, constructed in 2006, and consisting of:

(1) Ten (10) storage silos, each controlled by individual bin vent filters or the Meltshop EAF baghouses (1 and 2).

(2) One (1) rail unloading operation under a roof.

(3) One (1) truck dumping station enclosed by a three sided building.

(4) One (1) loader dumping station enclosed by a three sided building.

(5) Associated enclosed conveyors.

(6) Storage bins.

(7) Misc. feed equipment and controls.

(mm1) Material transfer station #3, located outside, exhausting to the atmosphere, which services both the EAFs and the LMFs, used to transfer various types and grades of lime, carbon, foamy slag, and other alloys from rail cars. Rail cars are unloaded to trucks, which transfer materials to silos, or the meltshop alloy handling system. Identified as MT #3, and consisting of:

(1) Rail car bottom unloading through a rubber boot to a conveyor with emissions uncontrolled.

(2) One (1) totally enclosed conveyor, identified as MTC #2 with emissions controlled by a bin vent dust collector and exhausting to the atmosphere.

(3) One (1) loading spout connected to the load truck with emissions uncontrolled.

(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.28.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the material transfer station (MT #1) shall not exceed 55.4 pounds per hour when operating at a process weight rate of 150 tons per hour. The pounds per hour limitation was 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

D.28.2 Particulate Control Equipment Operation [326 IAC 2-2]

Pursuant to 326 IAC 2-2 and PSD SSM 107-16823-00038, issued November 21, 2003, amended via 107-21611-00038 issued August 24, 2005, each silo shall be controlled by the Meltshop EAF Baghouses (1 and/or 2) or individual bin vent filters, with the following specifications: each bin vent filter will have an outlet grain loading of 0.01 grains per dry standard cubic foot.

D.28.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the material transfer station (MT #1) and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.28.4 Particulate Control

(a) The bin vent dust collector for particulate control shall be in operation and control emissions from the totally enclosed conveyor (MTC) at all times that the MTC 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.

SECTION D.29 FACILITY OPERATION CONDITIONS

Emission Unit Description:

MELTSHOP– ELECTRIC ARC FURNACES, ARGON OXYGEN DECARBURIZATION (AOD) VESSELS, DESULFURIZATION, CONTINUOUS CASTERS, EAF DUST TREATMENT FACILITY, LMFs, PREHEATERS AND DRYERS

(nn) Two (2) Meltshop Electric Arc Furnaces (EAFs), identified as EAF #1 and EAF #2, constructed in 1989, approved for modification in 2007 to replace the furnace bottoms. EAF #1 consists of three (3) co-jet oxyfuel burner/lance, each has a rated capacity of 6 megawatt constructed in 1996, approved for modification in 2003 using oxygen, natural gas and propane as backup fuels. EAF #2 consists of three (3) co-jet oxyfuel burner/lance, each has a rated capacity of 6 megawatt constructed in 1996, approved for modification in 2003 using oxygen, natural gas and propane as backup fuels. EAF #1 consists of three (3) carbon injectors with total maximum rated capacity of 1000 pounds per minute and EAF #2 consists of three (3) carbon injectors with total maximum rated capacity of 1000 pounds per minute constructed in 1996, approved for modification in 2003, and approved in 2013 for modification by installing six (6) additional new oxy-fuel burners/lances, each with a designed capacity of 5.5 megawatt per hour (MW/hr) for a total of 33 MW/hr to each EAF, install hearth bottom stirring to each EAF, installation of three (3) additional carbon injectors to each EAF with total designed capacity of 1,000 pounds of carbon per minute per EAF. Together the EAFs and the Argon Oxygen Decarburization (AOD) have a maximum capacity of 502 tons/hour, with emissions controlled by multi compartment reverse air type baghouses (identified as Meltshop Baghouse1 and Meltshop Baghouse2). In addition the EAFs have the following associated equipment:

(1) Charge buckets for single charge operation, approved for in 2013 for construction.

(2) Enhancements to scrap bay cranes and Melt Shop overhead cranes, approved in 2013 for construction.

(3) Modifications, upgrades, repairs or additions to EAF, yard and LMF transformers to increase output, approved in 2013 for construction.

(4) Switching to a one (1) bucket charge operation at the EAFs, approved in 2013 for construction.

(5) Modifications to fans at both Melt Shop baghouses for increased energy efficiency, approved in 2013 for construction.

(6) Modifications to existing carbon injection systems, approved in 2013 for construction

(7) Seven (7) small charge buckets, five (5) buckets constructed in 1989 and two (2) charge buckets approved for construction in 2007.

(8) Three (3) additional large charge buckets used for single furnace charges on both EAFs, approved for construction in 2007.

(9) Twenty-five (25) EAFs ladles, twenty-one (21) constructed in 1989, four (4) ladles approved for construction in 2007.

(10) EAF charge handling currently utilizing two (2) overhead cranes with magnets and a conveyor to load charge buckets constructed in 1989 and approved for modification in 2007 with the addition of 2 new scrap cranes with magnetics, enhancement of existing

SECTION D.29 FACILITY OPERATION CONDITIONS

cranes and/or magnetics, use of rail and/or truck dump and loader operations and the use of mobile cranes to load charge buckets in the scrap yard.

(11) Flux and alloy material handling system (top feed) for direct feeding of alloys, lime, carbon, scrap substitutes and other related materials to the EAFs constructed in 1989 and approved for modification in 2007 with the addition of bulk loading of material to the system in a three-sided building.

A continuous emission monitor (CEM) is used to monitor NOx, CO, and SO_2 emissions from the EAFs.

Under 40 CFR Part 60, Subpart AAa, these units are considered electric arc furnaces.

(1) The EAFs also utilize the following technologies:

(A) A direct shell evacuation (DSE) control system ("a fourth hole duct"),

(B) An overhead roof exhaust system consisting of canopy hoods,

(C) Oxy fuel burners, and

(2) Each or any combination of the Meltshop EAFs and AOD can independently produce the maximum capacity of 502 tons/hour of steel. Each Meltshop EAF can operate concurrently or independently to achieve this maximum capacity.

(3) The use of all types of scrap metal, scrap substitutes, including HBI, pig iron, DRI, Iron Carbide, various alloys, multiple grades of lime, charge and injection carbons, oxygen and argon to produce all grades of steel. These include, but are not limited to: ultra-low carbon, low carbon, medium carbon, high carbon, specialty, stainless and alloy steel products.

(4) Both the Meltshop Baghouse1 and Meltshop Baghouse2 capture the emissions from the Meltshop EAFs, AOD vessel, Desulfurization, Meltshop Continuous Casters, the three (3) Ladle Metallurgy Furnaces (EU-13 (a), EU-13 (b) and EU-13 (c)) LD#1, LDS#1, LDS#1a and other miscellaneous sources. Each Meltshop Baghouse can sufficiently control emissions independently.

(A) The Meltshop Baghouse1 is a multi compartment positive pressure baghouse, has a design air flow rate of 1,527,960 actual cubic foot/min (acf/min) and an outlet PM loading of 0.0018 grains/dry standard cubic foot (gr/dscf). This Meltshop Baghouse1 exhausts to a stack identified as BH1.

(B) The Meltshop Baghouse2 is a multi compartment positive pressure baghouse, has a design flow rate of 915,000 dscf/min and 1,200,000 acf/min and an outlet PM loading of 0.0018 gr/dscf. This Meltshop Baghouse2 exhausts to a stack identified as BH2.

A continuous emission monitor (CEM) for CO2 is used to monitor CO2 emissions from each Meltshop Baghouse.

(5) The fugitive emissions generated during the EAF furnace operations are captured by the Meltshop Roof Canopies or contained within the Meltshop Building.

(6) The Meltshop roof monitors include exhausts from the ladle preheaters, ladle dryers,

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tundish preheaters, tundish dryers, ladle lancing station, tundish dumping, fugitive emissions from the LMFs, fugitive emissions from the Meltshop Casters and other Meltshop operations.

(oo) One (1) Argon oxygen decarburization (AOD) vessel, identified as AOD1, constructed in 1995. One (1) top lance for AOD1 rated at 300,000 cubic feet/hour of oxygen. Together the AOD and the Meltshop EAFs have a total maximum capacity of 502 tons/hour, with emissions controlled by the Meltshop Baghouse1 which exhausts to a stack identified as BH1, and Meltshop Baghouse2 which exhausts to stack BH2. One Argon-Oxygen Decarburization Dryout and Preheat Burner, constructed pursuant to CP 107-3599-00038, as revised by A107-4631-00038, September 28, 1995.

Under 40 CFR Part 60, Subpart AAa, AOD1 is considered an argon-oxygen decarburization vessel.

(pp) Desulfurization (DS) is an additional step in the Meltshop operations that remove sulfur. It has a maximum capacity of 502 tons of metal per hour.

(qq) Two (2) Meltshop Continuous Casters, identified as CC #1 and CC #2, CC #1 was constructed in 1989, CC #2 was constructed in 1994, with total maximum capacity of 502 tons/hour, with emissions controlled by the Meltshop EAF Baghouse1 identified as vent BH1 which exhausts to stack BH1 or Meltshop EAF Baghouse2 which exhausts to stack BH2. Approved in 2012 to add a quench/descale system at both Meltshop Continuous Casters. The air flow rate from the existing caster steam vent, stack S-11 will increase by approximately 30,000 cubic feet per minute (cfm). Approved in 2013 for modification to allow casting of wider strip of steel. Casters can receive liquid steel from the EAF's, LMF's, AOD and the Castrip LMS or VTD.

(rr) An EAF dust transfer facilities, identified as DTF, constructed in 2004, with emission control by bin vents for the silos, and baghouse for truck/rail car loading. Dust transfer will also occur inside the buildings at both Meltshop baghouses.

Under 40 CFR Part 60, Subpart AAa, this unit is considered a dust handling system. Options for the dust transfer are:

(1) from silo to truck through a loading spout for offsite dust disposal.

(2) from silo to railcar through a loading spout for offsite dust disposal.

(ss) Three (3) Meltshop Ladle Metallurgy Furnaces (LMFs)/Stirring Station, two (2) identified as EU-13 (a) and (b), constructed in 1988, and approved for modification in 2009 by ducting the exhaust to the Meltshop Baghouses 1 and 2; and one (1) LMF identified as EU-13 (c) approved for construction in 2007 with a maximum capacity of 502 tons/hour each. All three LMFs are controlled by the meltshop Baghouses 1 and 2.

In addition the EAFs, AOD and LMFs have the following associated equipment:

(1) Ladle Preheaters, identified as LP #1a through LP #6a and LD-1, consisting of:

(A) Three (3) natural gas-fired ladle preheaters, identified as LP #1a, LP #2a, and LP #3a, approved for construction in 2007, each with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(B) One (1) natural gas-fired AOD ladle preheater, identified as LP #4a, approved

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for construction in 2007, with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(C) One (1) natural gas-fired ladle preheater, identified as LP #5a, approved for construction in 2007, with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(D) One (1) natural gas-fired ladle preheater, identified as LP #6, approved for construction in 2006, with a heat input capacity of 12 MMBtu/hour, utilizing low-NOx burners, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(E) One (1) natural gas-fired ladle preheater/dryer, identified as LD-1, approved for modification in 2007, with a heat input capacity of 10 MMBtu/hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8, or the Melt Shop baghouses.

(2a) Ladle Dryer, identified as LDS #1, constructed in 1989 and approved in 2011 for replacement, consisting of a low NOx natural gas fired burner, with a heat input capacity of 5 MMBtu per hour. Emissions are uncontrolled and exhausting to stack 12, or the Melt Shop baghouses.

(2b) One (1) natural gas-fired Ladle Dryer, identified as LDS #1a, approved for construction in 2007 and approved in 2011 for replacement, with a heat input capacity of 5 MMBtu per hour, with uncontrolled emissions exhausting to stack S-12, or the Melt Shop baghouses.

(3) Five (5) Tundish Preheaters, identified as TP1 - TP5, constructed in 1995, each with a heat input capacity of 6 MMBtu per hour, using propane as a backup fuel. Approved in 2013 for modification to increase their heat input from six (6) MMBtu per hour to twelve (12) MMBtu per hour each.

(4) Two (2) Tundish Dryout Stations, identified as TD #1 and TD #2. TD #1 was constructed in 1989, and TD#2 was constructed in 1990, each with a heat input capacity of 9 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(5) Eight (8) Tundish Nozzle Preheaters, identified as TNP #1-#8. Four (4) were constructed in 1995 and four (4) were constructed through the years and were permitted in 2013, consisting of a low NOx natural gas fired Preheaters, each with a heat input capacity of 0.8 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(6) One (1) natural gas-fired tundish dryout station, identified as TD #3, approved for construction in 2007, with a maximum heat input capacity of 2.4 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(7) Two (2) natural gas-fired mandrel dryers, identified as MD #1 and MD #2, approved for construction in 2007, each with a heat input capacity of 1.5 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(8) Fifteen (15) belt conveyors and 20 weight hoppers, with a maximum throughput of 200

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tons per hour, approved for construction in 2007. These conveyors will supply lime, carbon and alloys to the new LMF EU-13(c)).

(9) Flux and alloy material handling system for direct feeding of alloys, lime, carbon, scrap substitutes and other related materials to the LMFs, constructed in 1988 and approved for modification in 2007 with the addition of a three-sided building for bulk loading of material to the system.

(10) Two (2) natural gas-fired Ladle Warmer Burners, identified as LWB #1 and LWB #2, approved in 2011 for construction, each with a maximum heat input capacity of 3 MMBtu/hr to warm ladles at the Melt Shop.

(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.29.1 Meltshop Baghouses PSD BACT [326 IAC 2-2]

(a) Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), PSD/SSM 107-24348-00038, and PSD/SSM 107-26591-00038, the Permittee shall comply with the following BACT requirements:

(1) The Meltshop Baghouses (1 and 2) shall capture and control the emissions from the Meltshop EAFs, AOD vessels, Desulfurization station, Meltshop Continuous Casters and three (3) LMFs (EAF #1, EAF #2, AODs, DS, CC #1, CC #2, EU-13 (a), EU-13 (b) and EU-13 (c)), LDS#1, LDS#1a and LD#1.

(2) Steel production shall not exceed 4,397,520 tons of steel poured/tapped per 12-consecutive month period with compliance demonstrated at the end of each month.

(3) The total sulfur dioxide (SO_2) emissions from the Meltshop Baghouses (1 and 2), controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs (EU-13 (a), EU-13 (b) and EU-13 (c)) shall not exceed 0.33 pound per ton of steel produced and 167 pounds of SO_2 per hour, based on a 3-hour block average.

(4) The total nitrogen oxide (NO_x) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs (EU-13 (a), EU-13 (b) and EU-13 (c)) shall not exceed 0.35 pounds per ton of steel produced and 175.7 pounds of NO_x per hour.

(5) The total carbon monoxide (CO) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs (EU-13 (a), EU-13 (b) and EU-13 (c)) shall not exceed 2.0 pounds per ton of steel produced and 1,004 pounds of CO per hour, based on a 3-hour block average.

(6) The total volatile organic compound (VOC) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs (EU-13 (a), EU-13 (b) and EU-13 (c)) shall not exceed 0.09 pound per ton of steel produced and 45.18 pounds of VOC per hour, based on a 3-hour block average.

(7) The Particulate Matter (Filterable)) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs (EU-13 (a), EU-13 (b) and EU-13 (c)) shall each not exceed 0.0018 grains/dscf.

(8) The PM10/PM2.5 (Filterable and condensable) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs (EU-13 (a), EU-13 (b) and EU-13 (c)) shall each not exceed 0.0052 grains/dscf.

(9) The visible emissions from each Meltshop Baghouse shall not exceed 3% opacity, based on a 6-minute average.

(10) Visible emissions from the Meltshop Roof Monitors shall not exceed 5% opacity, based on a 6-minute average.

(11) Fugitive emissions generated at each EAF (EAF #1 and EAF #2) during each complete cycle from tap to tap shall not exceed 3% opacity when emitted from any roof monitor or building opening, based on a 6-minute average.

(12) Good working practices shall be observed such as following various tapping, melting and refining practices.

(b) Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), the Permittee shall comply with the following BACT requirements:

(1) The Argon-Oxygen Decarburization (AOD) Dryout and Preheat Burner shall be limited as follows: 100 percent of all PM/PM10 fugitive emissions generated during the operation of the AOD Dryout and Preheat burner shall be captured by the roof canopy in the North Furnace Bay or contained and collected within the North Furnace Bay.

(2) The AOD Dryout and Preheat Burner is limited solely to the use of natural gas and limited to 20.0 million Btu per hour heat input.

(3) That all equipment consuming natural gas as the fuel source shall be limited to the use of a propane-air mixture as the alternative backup source.

(4) NOx emissions shall be limited to 140 pounds per million cubic feet of natural gas burned, 2.8 pounds per hour, and 12.3 tons per year.

D.29.2 Operational Flexibility [326 IAC 2-2]

Pursuant to 326 IAC 2-2, and PSD/SSM 107-26591-00038, the Permittee shall comply with the following requirements:

(a) Each or any combination of the Meltshop EAFs and AOD (EAF #1, EAF #2, and AODs) may independently produce the maximum capacity of 502 tons/hour of steel. Each Meltshop EAF or AOD can operate concurrently or independently to achieve this maximum capacity.

(b) Each Meltshop Baghouse can sufficiently control emissions independently.

(c) The Meltshop Continuous Casters (CC #1 and CC #2) can cast molten steel either from the Meltshop EAFs, LMFs, AOD, Castrip Vacuum Degasser or Castrip LMS.

D.29.3 Meltshop PSD BACT for Metals [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), PSD/SSM 107-24348-00038, and PSD/SSM 107-26591-00038, the Permittee shall comply with the following BACT requirements:

(a) The Lead emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs EU-13 (a), EU-13 (b) and EU-13 (c) shall be limited to 0.24 pound per hour, based on a 3-hour block average.

(b) The Mercury emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs EU-13 (a), EU-13 (b) and EU-13 (c) shall be limited to 0.08 pound per hour, based on a 3-hour block average.

(c) The Beryllium emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs EU-13 (a), EU-13 (b) and EU-13 (c) shall be limited to 0.002 pound per hour, based on a 3-hour block average.

(d) The Fluorides emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMFs EU-13 (a), EU-13 (b) and EU-13 (c) shall be limited to 5.02 pounds per hour, based on a 3-hour block average.

The fluorides emissions from the EAFs and LMFs shall be minimized by using granular Fluorspar, to minimize fluorides emissions and it shall be applied at an average rate of 250 pounds/heat or less at each EAFs and at an average rate of 500 pounds/heat or less at each LMF.

(e) The emissions from lead and mercury shall be minimized in accordance with the Scrap Management Program (SMP) in Condition D.29.10(c) and

(f) The emissions from the Meltshop EAFs/AODs, desulfurization station, two (2) Continuous Casters and three (3) LMFs EU-13 (a), EU-13 (b) and EU-13 (c) shall be controlled by a baghouse.

D.29.4 Meltshop EAF Dust and alloy handling System PM and Opacity PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), the Permittee shall comply with the following BACT requirements:

(a) Visible emissions from the EAF Dust Handling System (DTF) shall each not exceed 10% opacity, based on a 6-minute average.

(b) The AOD vessel alloy handling system emissions shall be captured by the Meltshop Roof Canopy.

D.29.5 Ladle Dryers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD/SSM 107-24348-00038, the Ladle Dryers (LDS #1 and LDS #1a) shall comply with the following BACT requirements:

(a) The Ladle Dryers (LDS #1 and LDS#1a) shall only burn natural gas and shall be limited to 5.0 million Btu per hour heat input, each.

(b) PM/PM10 shall be limited to 7.6 pounds per million cubic feet of natural gas burned, 0.076 pounds per hour (total), and 0.33 tons per year (total).

(c) NOx emissions shall be limited to 100 pounds per million cubic feet of natural gas burned, 0 1.0 pounds per hour (total), and 4.38 tons per year (total).

(d) CO emissions shall be limited to 84 pounds per million cubic feet of natural gas burned, 0.84 pounds per hour (total), and 3.6 tons per year (total).

(e) VOC emissions from shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.06 pounds per hour (total), and 0.24 tons per year (total).

(f) SO2 emission shall be limited to 0.6 lb per million cubic feet of natural gas burned, 0.006 pound per hour (total) and 0.026 ton per year (total).

(g) Visible emissions shall not exceed 5% opacity, based on a 6-minute average.

D.29.6 Ladle Preheaters PSD BACT [326 IAC 2-2]

(a) Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD/SSM 107-24348-00038, the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall comply with the following BACT requirements:

(1) The six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall only burn natural gas, except as specified below. The six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall each be limited to 10.0 million Btu per hour heat input

(2) PM/PM10 emissions from each of the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall be limited to 7.6 pounds per million cubic feet of natural gas burned, 0.456 pounds per hour (total), and 2.0 tons per year (total).

(3) NOx emissions from each of the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall be limited to 100 pounds per million cubic feet of natural gas burned, 6.0 pounds per hour (total), and 26.3 tons per year (total).

(4) CO emissions from each of the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall be limited to 84 pounds per million cubic feet of natural gas burned, 5.04 pounds per hour (total), and 22.0 tons per year (total).

(5) VOC emissions from each of the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.33 pounds per hour (total), and 1.44 tons per year (total).

(6) SO_2 emissions from each of the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall be limited to 0.6 lb per million cubic feet of natural gas burned, 0.036 pounds per hour.

(7) The six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall only burn propane as a back-up fuel.

(8) Visible emissions from the six (6) Ladle Preheaters (LP#1a - #5a and LD-1) shall not exceed 5% opacity, based on a 6-minute average.

(b) Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD SSM 107-21359-00038, issued on April 27, 2006, ladle preheater LP #6 shall comply with the following BACT requirements:

(1) The BACT for NOx shall be “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel, proper operation and shall not exceed a NOx emission rate of 0.10 pounds per MMBtu and 1.2 lbs per hour.

(2) The BACT for SO_2 shall be “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel, proper operation and shall not exceed a SO_2 emission rate of 0.0006 pounds per MMBtu and 0.007 lbs per hour.

(3) The BACT for CO shall be “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel, proper operation and shall not exceed a CO emission rate of 0.084 pounds per MMBtu and 1.01 lbs per hour.

(4) The BACT for PM/PM10 (filterable plus condensable) shall be “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel, proper operation and shall not exceed a PM/PM10 (filterable plus condensable) emission rate of 0.0076 pounds per MMBtu and 0.091 lbs per hour.

(5) The BACT for VOC shall be “good combustion practices”, utilize “pipeline quality” natural gas as the primary fuel and may utilize propane as a backup fuel, proper operation and shall not exceed a VOC emission rate of 0.0054 pounds per MMBtu and 0.065 lbs per hour.

(6) The opacity from stacks 7 and 8 shall not exceed three percent (3%) opacity based on a six-minute average (24 readings taken in accordance with 40 CFR Part 60, Appendix A, Method 9). Compliance with this limitation satisfies the opacity limitations required by 326 IAC 5-1 (Opacity Limitations).

(c) Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD/SSM 107-24348-00038 and PSD/SSM 107-32615-00038, the Tundish Nozzle Preheaters (TPH1 through TPH8) shall comply with the following BACT requirements:

(1) The Tundish Nozzle Preheaters (TPH1 through TPH8) shall combust natural gas as the primary fuel. Compliance with Condition D.29.6(c)(1) and Condition D.29.6(c)(3) shall likewise satisfy the Lead (Pb) BACT for these preheaters.

(2) When burning natural gas the following BACT applies:

(i) NOx emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 100 pounds per million cubic feet of natural gas burned, 0.63 pounds per hour (total.

(ii) The VOC emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 5.5 pounds per million cubic feet of natural gas burned, 0.035 pounds per hour (total).

(iii) The SO2 emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 0.6 pounds per million cubic feet of natural gas burned, 0.004 pounds per hour (total).

(iv) The PM10 and PM2.5 (filterable and condensable) emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 7.6

pounds per million cubic feet of natural gas burned, 0.05 pounds per hour (total).

(v) The Particulate Matter (filterable only) emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 1.9 pounds per million cubic feet of natural gas burned, 0.012 pounds per hour (total).

(vi) CO emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 84 pounds per million cubic feet of natural gas burned, 0.53 pounds per hour (total).

(3) The Tundish Nozzle Preheaters (TPH1 through TPH8) shall combust propane as a backup fuel or its use shall be random in nature. The hours of operation for each emission unit when combusting propane shall be limited to less than 500 hours per twelve consecutive month period, with compliance at the end of each month. Compliance with this condition shall likewise demonstrate compliance with the NAAQS Standards.

(4) When burning propane the following BACT applies:

(i) The NOx emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 0.013 lb/gal of propane burned.

(ii) The VOC emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 0.001 lb/gallon of propane burned.

(iii) The Particulate Matter (filterable) emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 0.002 lb/gal of propane burned.

(iv) The PM10 and PM2.5 (Filterable and Condensable) emissions from Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 0.007 lb/gal of propane burned.

(5) The Tundish Nozzle Preheaters (TPH1 through TPH8) shall only burn natural gas and shall be limited to 0.8 million Btu per hour heat input each.

(6) Visible emissions shall not exceed 5% opacity, based on a 6-minute average.

(d) Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD/SSM 107-24348-00038, and PSD/SSM 107-32615-00038 the Tundish Preheaters (TP1 through TP5) shall comply with the following BACT requirements:

(1) The Tundish Preheaters (TP1 through TP5) shall combust natural gas as the primary fuel. Compliance with Condition D.29.6(d)(1) and Condition D.29.6(d)(3) shall likewise satisfy the Lead (Pb) BACT for these preheaters.

(2) When burning natural gas the following BACT applies:

(i) NOx emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 100 pounds per million cubic feet of natural gas burned, 5.9 pounds per hour (total.

(ii) The VOC emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 5.5 pounds per million cubic feet of natural gas burned, 0.32 pounds per hour (total).

(iii) The SO2 emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 0.6 pounds per million cubic feet of natural gas burned, 0.035 pounds per hour (total).

(iv) The Particulate Matter (filterable only) emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 1.9 pounds per million cubic feet of natural gas burned, 0.11 pounds per hour (total).

(v) The PM10 and PM2.5 (filterable and condensable) emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 7.6 pounds per million cubic feet of natural gas burned, 0.45 pounds per hour (total).

(vi) The CO emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 84 pounds per million cubic feet of natural gas burned, 4.94 pounds per hour (total).

(3) The Tundish Preheaters (TP1 through TP5) combust propane as a backup fuel. The hours of operation for each emission unit when combusting propane shall be limited to less than 500 hours per twelve consecutive month period, with compliance at the end of each month. Compliance with this condition shall ensure compliance with the NAAQS Standards at the time of this project.

(4) When burning propane the following BACT applies:

(i) The NOx emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 0.013 lb/gal of propane burned.

(ii) The VOC emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 0.001 lb/gallon of propane burned.

(iii) The Particulate Matter (filterable) emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 0.002 lb/gal of propane burned.

(iv) The PM10 and PM2.5 (Filterable and Condensable) emissions from Tundish Preheaters (TP1 through TP5) shall not exceed 0.007 lb/gal of propane burned.

(5) The Tundish Preheaters (TP1 through TP5) shall only burn natural gas as the main fuel and propane as backup fuel, and shall be limited to 12.0 million Btu per hour heat input each.

(6) Visible emissions shall not exceed 5% opacity, based on a 6-minute average.

D.29.7 Tundish Dryout Station (TD #1) PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements) and PSD/SSM 107-24348-00038, the Tundish Dryout Stations (TD #1 and TD #2) shall comply with the following BACT requirements:

(a) The Tundish Dryout Station (TD #1 and TD #2) shall only burn natural gas, except as specified below, and shall be limited to 9.0 million Btu per hour heat input each.

(b) PM/PM10 shall be limited to 7.6 pounds per million cubic feet of natural gas burned, 0.14 pounds per hour (total), and 0.6 tons per year (total).

(c) NOx emissions shall be limited to 100 pounds per million cubic feet of natural gas burned, 1.8 pounds per hour (total), and 7.9 tons per year (total).

(d) CO emissions shall be limited to 84 pounds per million cubic feet of natural gas burned, 1.5 pounds per hour, and 6.6 tons per year (total).

(e) VOC emissions shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.1 pounds per hour, 0.43 tons per year (total).

(f) SO2 emission shall be limited to 0.6 lb per million cubic feet of natural gas burned, 0.01 pounds per hour (total), and 0.05 tons per year (total).

(g) Visible emissions shall not exceed 5% opacity, based on a 6-minute average.

(h) The Tundish Dryout Stations (TD #1 and TD #2) shall only burn propane as a back-up fuel.

D.29.8 PSD Limit [326 IAC 2-2]

The combined input of propane to emission units TD #3, MD #1, and MD #2, combined with the input of propane to annealing furnace AN-19 (permitted in Section D.19) shall be limited to less than 1,089 thousand gallons of propane (LPG) per twelve consecutive month period, with compliance determined at the end of each month. NOx emissions shall not exceed 0.208 pounds per MMBtu when burning propane. Compliance with this limit will ensure that the potential to emit from the modification performed under SSM 107-23609-00038 is less than forty (40) tons of NOx per year and will render the requirements of 326 IAC 2-2 (PSD) not applicable.

D.29.9 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the emission units identified in (nn), (oo), (pp), (qq), (rr), (ss) and their control devices of Section D.29 except for emission units identified in (nn)(1) through (5) and (ss)(1) through (9). Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.29.10 Meltshop EAF PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), the Permittee shall comply with the following BACT requirements:

(a) Each EAF (EAF #1 and EAF #2) shall be equipped and operated with oxy fuel burners.

(b) Each EAF shall be controlled by a direct shell evacuation (DSE) system and canopy hoods.

(c) VOC emissions shall be controlled through an extensive scrap management program as follows:

(1) All grades of scrap charged to the furnaces shall not contain observable non-ferrous metals or non-metallics.

(2) All grades of scrap shall be free of excessive dirt, oil, and grease.

(3) Heavily oiled scrap shall not be used.

(d) Good work practices shall be observed.

D.29.11 Meltshop EAF Dust Handling System and Dust Transfer System PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 (Control Technology Review Requirements), the Permittee shall comply with the following BACT requirements:

(a) The EAF Dust Handling System (DTF) shall be equipped with bin vents on the silos.

(b) The Dust Transfer System shall incorporate baghouse(s) for evacuation on the truck/rail car loading buildings**.**

(c) EAF Dust transfer shall occur inside buildings located at both Meltshop baghouses.

D.29.12 Particulate Control Equipment Operation [326 IAC 2-2]

(a) Pursuant to 326 IAC 2-2, either or both the Meltshop Baghouses (1 and 2) for particulate control shall be in operation and control emissions at all times that one or all of the EAFs, AOD vessel, Desulfurization station, Meltshop Continuous Casters, three (3) LMFs and three (3) heaters (EAF #1, EAF #2, AODs, DS, CC #1, CC #2 and EU-13 (a), EU-13 (b) and EU-13 (c), LDS#1, LDS#1A and LD#1) are in operation.

(b) Pursuant to 326 IAC 2-2, the following particulate control shall be in operation and control emissions at all times when its corresponding process is in operation:

(1) bin vents for the silos,

(2) baghouse for truck/rail car loading building evacuation.

(c) Pursuant to 326 IAC 2-2, fugitive emissions generated during EAFs and AOD vessel operations (EAF #1, EAF #2, and AODs) shall be captured by the Meltshop roof canopies or contained and collected within the Meltshop EAF building.

D.29.13 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) Within sixty (60) days after achieving maximum capacity but no later than one hundred and eighty (180) days after startup of this modification (PSD/SSM 107-32615-00038) associated with the production of wider strip of steel, the Permittee shall conduct performance tests on the Meltshop EAF Baghouses 1 and 2 (stack and vent), controlling the EAFs, AODs, Desulfurization Station, Continuous Caster and three (3) LMFs EU-13 (a), EU-13 (b) and EU-13 (c) for Lead, VOC, PM, PM10 and PM2.5 to demonstrate compliance with Conditions D.29.1(a)(6) through (8) and D.29.3(a), utilizing EPA Methods or other methods as approved by the Commissioner.

(b) For the Meltshop Baghouse1 and Baghouse2 stacks, the Permittee shall determine either:

(1) the control system fan motor amperes and all damper positions;

(2) the volumetric flow rate through each separately ducted hood; or,

(3) the volumetric flow rate at the control device inlet and all damper positions.

During all compliance demonstration testing.

(c) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct opacity compliance tests on the following emission points to demonstrate

compliance with Conditions D.29.1 and D.29.3, utilizing 40 CFR Part 60, Appendix A, Method 9, or other methods as approved by the Commissioner.

(1) Meltshop Baghouse1 stack and Baghouse2 stack,

(2) Meltshop Roof monitor, and

(3) EAF Dust Handling System,

(d) The PM, PM10, PM2.5, VOC, Mercury, Fluorides, Beryllium and Lead tests shall be repeated at least once every 2.5 years from the date of a valid compliance demonstration.

(e) Compliance with the SO_2, NOx, and CO pounds per ton of steel produced emission limitations in Conditions D.29.1(a)(3) through D.29.1(a)(5) respectively, shall be performed by the use of applicable methods in 40 CFR Part 60, Appendix A or other method approved by the Commissioner. Compliance with the SO_2, NOx, and CO pounds per hour emission limitations in Conditions D.29.1(a)(3) through D.29.1(a)(5) respectively, shall be demonstrated by compliance with Condition D.29.14.

(f) The SO_2, NOx, and CO tests to demonstrate compliance with the pounds per ton of steel produced emission limitations in Conditions D.29.1(a)(3) through D.29.1(a)(5) respectively, shall be repeated at least once every 2.5 years from the date of a valid compliance demonstration.

(g) Any stack which has multiple processes which exhaust to the same stack shall operate all of the processes simultaneously in accordance with 326 IAC 3-6 (Source Sampling Procedures) and 40 CFR 60.275a(b). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

(h) These tests shall be performed using methods as approved by the Commissioner.

D.29.14 CO, SO2, and NOx Continuous Emission Rate Monitoring Requirement [326 IAC 2-2] [326 IAC 3-5]

(a) CO, SO2, and NOx CEMS:

(1) Pursuant to the consent decree in United States v. Nucor Corporation, No. 4-00-3945-24 (D.S.C.) and 326 IAC 2-2 (PSD), the Permittee shall install, calibrate, certify, operate, and maintain continuous emissions monitoring systems (CEMS) for measuring CO, SO2, and NOx emissions rates in pounds per hour from the Meltshop EAFs, in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.

The Permittee shall comply with the PSD BACT CO, SO2, and NOx hourly emission rates by averaging the CEMS readings based on the actual hours of operation in a 24-hour period.

(b) The Permittee shall prepare and submit to IDEM, OAQ a written report of the results of the calibration gas audits and relative accuracy test audits for each calendar quarter within thirty (30) calendar days after the end of each quarter. The report must contain the information required by 326 IAC 3-5-5(e)(2).

(c) The Permittee shall record the output of the systems in pounds per hour and shall perform the required record keeping and reporting, pursuant to 326 IAC 3-5-6 and 326 IAC 3-5-7.

D.29.15 Visible Emissions

(a) To demonstrate compliance with Condition D.29.1(9) and (10), the Permittee shall have a certified visible emissions reader/observer to conduct, perform and record visible observations of the:

(1) Meltshop Baghouse1 roof monitor or stack and Meltshop Baghouse2 stack, and

(2) Meltshop Roof Monitor,

once per day, when either one or both the Meltshop EAFs are operating in the melting and refining period, in accordance with 40 CFR 60, Appendix A, Method 9.

(b) Pursuant to the Approved Alternate Monitoring System requirements for the Meltshop Baghouse 2 stack, the Permittee shall have a certified visible emissions reader/observer to conduct, perform and record visible observations of the stack for at least three (3) six (6)-minute periods during furnace meltdown and refining operations, including periods of simultaneous furnace operation at least, once per day, when either one or both the Meltshop EAFs are operating in the melting and refining period, in accordance with 40 CFR 60, Appendix A, Method 9.

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

D.29.16 Maintenance of CEMS [326 IAC 2-7-5(3)(A)(iii)]

(a) In the event that a breakdown of the SO2, NOx or CO continuous emission monitoring systems (CEMS) occurs, the Permittee shall maintain records of all CEMS malfunctions, out of control periods, calibration and adjustment activities, and repair or maintenance activities.

(b) The continuous emissions monitoring system (CEMS) shall be operated at all times the emissions unit or process is operating except for reasonable periods of monitor system downtime due to necessary calibration or maintenance activities or malfunctions. Calibration and maintenance activities shall be conducted pursuant to the standard operating procedures under 326 IAC 3-5-4(a).

(c) Except as otherwise provided by a rule or provided specifically in this permit, whenever a continuous emission monitor system (CEMS) is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, the Permittee shall perform supplemental monitoring by using calibrated handheld monitors to measure the SO2, NOx and CO emissions on a once per shift basis, unless the CEMS operation is restored prior to the end of the shift.

The handheld monitors shall be approved by the IDEM, OAQ.

(d) The Permittee shall keep records in accordance with 326 IAC 3-5-6(b) that includes the following:

(1) All documentation relating to:

(A) design, installation, and testing of all elements of the monitoring system; and

(B) required corrective action or compliance plan activities.

(2) All maintenance logs, calibration checks, and other required quality assurance activities.

(3) All records of corrective and preventive action.

(4) A log of EAF System operations, including the following:

(A) Date of facility downtime.

(B) Time of commencement and completion of each downtime.

(D) Reason for each downtime.

(e) The Permittee shall keep records that describe the supplemental monitoring implemented during the downtime to assure compliance with applicable emission limitations.

(f) In accordance with 326 IAC 3-5-7(5), the Permittee shall submit reports of continuous monitoring system instrument downtime, except for zero (0) and span checks, which shall be reported separately.

The reports shall include the following:

(1) Date of downtime.

(2) Time of commencement.

(3) Duration of each downtime.

(4) Reasons for each downtime.

(5) Nature of system repairs and adjustments.

D.29.17 Bag Leak Detection System (BLDS) [326 IAC 2-7-5]

(a) The Permittee shall install and operate a continuous bag leak detection system (BLDS) for each Meltshop Baghouse (1 and 2). The BLDS for Meltshop Baghouse1 (BLDS 1) shall be installed according to the provisions of Condition D.29.17(b) and operated according to the conditions in D.29.17(d). The BLDS for Meltshop Baghouse2 (BLDS 2) shall be installed according to the provisions of Condition D.29.17(c) and operated according to the conditions in D.29.17(d).

(b) The BLDS (BLDS 1) for Meltshop Baghouse1 shall be installed according to the conditions in (1) through (7) below.

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentration of 0.0018 grains per actual cubic foot or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loading.

(3) 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 alarm level.

(4) The bag leak detection system shall be installed in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specification and recommendations for installation, and adjustment of the system.

(5) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(6) The bag detector must be installed downstream of the baghouse bags.

(7) The Permittee shall develop and submit to IDEM, OAQ, for approval, a site-specific monitoring plan that addresses the items identified in paragraph (A) through (E) below. For each bag leak detection system that operates based on the triboelectric effect, the monitoring plan shall be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R98-015). The Permittee shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan shall describe the following:

(A) Installation of the bag leak detection system;

(B) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established;

(C) Operation of the bag leak detection system including quality assurance procedures;

(D) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list; and

(E) How the bag leak detection system output shall be recorded and stored.

(c) The BLDS (BLDS 2) for Meltshop Baghouse2 shall be installed according to the conditions in (1) through (4) below.

(1) The bag leak detection system may be of the triboelectric, electrodynamic, light scattering or light transmittance type, and must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0044 grains per actual cubic foot or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings, which shall be continuously recorded.

(3) The bag leak detection system must be equipped with an alarm which shall sound and alert the operator when an increase of particulate loading exceeds a set point established in accordance with the monitoring plan required in Condition D.29.17(d) below.

(4) The Permittee shall develop a monitoring plan for BLDS 2, and shall submit the plan to U.S. EPA Region 5 for review and approval, unless U.S. EPA transfers this responsibility to IDEM, OAQ and written notice of such transfer is provided to Permittee. If BLDS 2 is of the triboelectric type, the plan shall be consistent with the recommendations contained in the U.S. EPA guidance document "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015). BLDS 2 shall be operated and maintained in accordance with the plan. The plan, at a minimum, must discuss the following:

(A) Installation details;

(B) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established;

(C) Day to day operation including quality assurance operations;

(D) Maintenance procedures, including spare parts inventories.

(d) Each bag leak detection system (BLDS 1 and 2) shall be operated at all times the associated baghouse is operating except for reasonable periods of monitor system downtime due to necessary calibration or maintenance activities or malfunctions. Except as otherwise provided by a rule or provided specifically in this permit, whenever a bag leak detection system (BLDS) is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, the Permittee shall perform supplemental monitoring, by conducting visible emission (opacity) readings from the affected baghouse utilizing 40 CFR Part 60, Appendix A, Method 9, or other methods as approved by the Commissioner, once a shift unless the BLDS operation is restored prior to the end of the shift. The system shall continuously monitor relative particulate matter loadings to detect bag leaks and other conditions that result in increases in particulate loadings. Each BLDS shall meet the following requirements:

(1) Following initial adjustment, the Permittee shall not adjust the averaging period, alarm set point, or alarm delay time without approval from IDEM, OAQ except as provided for in paragraphs (A) and (B) below.

(A) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects including temperature and humidity.

(B) If opacities greater than zero percent are observed over four consecutive 15-second observations during daily opacity observations and the alarm on the bag leak detection system does not sound, the owner or operator shall lower the alarm set point on the bag leak detection system to a point where the alarm would have sounded during the period when the opacity observations were made.

(2) In the event of a bag leak detection system alarm:

(A) Within one hour of an alarm, the Permittee shall initiate procedures to determine the cause of the alarm.

(B) Except as provided under Condition D.29.17(d)(3) below, the cause of the alarm must be alleviated within 3 hours of the time the alarm occurred by taking whatever corrective actions(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate emissions;

(ii) Sealing off defective bags or filter media;

(iii) Replacing defective bags or filter media or otherwise repairing the control device;

(iv) Sealing off a defective baghouse compartment;

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system;

(vi) Shutting down the process producing the particulate emissions; and

(vii) Determining that the alarm is a result of a malfunction in the BLDS equipment itself, in which case the compartment may be restored to operation and reasonable corrective action steps shall be taken to restore the BLDS to proper operation.

(viii) Determining whether the alarm is a result of inclement weather, in which case the compartment may be restored to operation.

(3) IDEM, OAQ may allow Permittee more than 3 hours to alleviate specific conditions that cause an alarm if Permittee identifies the condition that led to an alarm, adequately explains why it was not feasible to alleviate the condition within 3 hours of the time the alarm occurred, and demonstrates that the requested additional time will ensure alleviation of the condition as expeditiously as practicable.

D.29.18 Compliance Assurance Monitoring (CAM) [40 CFR Part 64]

Pursuant to 40 CFR Part 64, the Permittee shall comply with the following Compliance Assurance Monitoring requirements for the Meltshop baghouses controlling the EAFs, Argon Oxygen Decarburization vessels, desulfurization station, continuous casters and LMFs:

(a) Monitoring Approach – For EAFs/AODs and LMFs

EAFs/AODs and LMFs				
PARAMETER	INDICATOR NO. 1	INDICATOR NO. 2	INDICATOR NO. 3	INDICATOR NO. 4
I. Indicator Measurement Approach	PM Concentration)	Opacity	Bag Leak Detection System (BLDS)	Bag Condition
	U.S. EPA Method 5, for PM or other Methods approved by the Commissioner – Baghouse1 and Baghouse2	Method 9 visual observations.	Continuous measurement of relative PM loading in the baghouse stack.	Visual inspection.
II. Indicator Range	PM emission limit of 0.0018 grain/dscf	An excursion is defined as an opacity measurement exceeding 3% on a 6-minute average.	Predetermined increases in PM loading sets off an alarm, which the operator will respond to.	An excursion is defined as failure to perform the bi-annual inspection.
III. Performance Criteria				
A. Data Representativeness	U.S. EPA Method 5, for PM or other Methods approved by the	Procedures addressed in Method 9	Monthly operational status inspections of the equipment important to the	Baghouse inspected visually for bag leaks.

EAFs/AODs and LMFs				
PARAMETER	INDICATOR NO. 1	INDICATOR NO. 2	INDICATOR NO. 3	INDICATOR NO. 4
	Commissioner		total capture system.	
B. Verification of Operational Status	Fans amps and damper position.	NA	NA	NA
C. QA/QC Practices and Criteria	U.S. EPA Method 5, for PM or other Methods approved by the Commissioner	Use of a certified visible emission observer.	Periodic maintenance of BLDS.	Trained personnel perform inspections and maintenance.
D. Monitoring Frequency	Once every 2.5 years.	Daily (when the EAF, AODs and LMFs are operating unless inclement weather).	Continuous relative PM loading measurements.	Bi-annual
IV. Data Collection Procedures	U.S. EPA Method 5, for PM or other Methods approved by the Commissioner	Daily visual observations of opacity are recorded on V.E. Form.	Record of alarm instances and maintenance activity.	Results of inspections and maintenance activities performed are recorded in baghouse maintenance log.
Averaging Period	Average of 3 test runs each four (4) hours long	Six-minute average.	NA	NA

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

D.29.19 Record Keeping Requirements

(a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.

(b) To document the compliance status with Condition D.29.1(a)(2), the Permittee shall maintain records of the amount of steel poured/tapped in each consecutive twelve (12) month period and make available upon request to IDEM, OAQ, and the US EPA.

(c) To document the compliance status with Condition D.29.1(a)(3), (4) and (5), The Permittee shall maintain records of the readings of the SO_2, NO_x and CO CEMS in pounds per hour.

(d) To document the compliance status with Condition D.29.15(a), the Permittee shall maintain records of the Method 9 visible emission readings.

(e) To document the compliance status with Condition D.29.1, the Permittee shall maintain and make available upon request to IDEM, OAQ, and the US EPA records of the monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches); shop opacity observations conducted at least once per day; and either:

(1) once-per-shift fan motor amperes and damper position; or

(2) continuous volumetric flow rate through each separately ducted hood; or

(3) continuous volumetric flow rate at the control device inlet and once-per-shift damper positions.

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

(f) The Permittee shall maintain records of the following for the BLDS and make available upon request to IDEM, OAQ, and the US EPA:

(1) Records of the system output.

(2) Records of system adjustments, including the date and time of each adjustment, and initial and final settings.

(3) Records of the date and time of each system alarm, including, but not limited to, the date and time that procedures to determine the cause of the alarm were initiated, if procedures to determine the cause of the alarm were initiated within one (1) hour, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and if the alarm was alleviated within 3 hours of the alarm.

(4) Records of the dates and times that the BLDS was not operational, and the reason(s) why it was not operational.

(g) To document the compliance status with Condition D.29.18 the Permittee shall maintain records of baghouse inspections. These records shall include as a minimum, dates, initials of the person performing the inspections, results, and corrective actions taken in response to excursions as required by the CAM for the EAFs/AOD and LMFs (if any are required).

(h) To document the compliance status with Condition D.29.3(d), the Permittee shall maintain records of the amount of Fluorspar applied at the EAFs and LMFs.

(i) To document the compliance status with Condition D.29.8, the Permittee shall maintain records of the actual quantity of propane (LPG) used in the emission units identified as TD #3, MD #1, and MD #2. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the limit established in Condition D.29.8. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(j) To document the compliance status with Conditions D.29.6(c)(3) and D.29.6(d)(3) , the Permittee shall maintain records of the hours of operation of each of the preheaters when burning propane.

(k) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(l) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition

D.29.20 Reporting Requirements [326 IAC 2-1.1-11]

(a) The Permittee shall submit a quarterly report of excess emissions, using the Quarterly Deviation and Compliance Monitoring Report or equivalent, of the following:

(1) SO_2, NO_x and CO readings from the CEMS,

(2) Opacity readings from the Meltshop Baghouse1 roof monitor, Meltshop Baghouse 2 stack and Meltshop roof monitor; and

This reporting requirement also satisfies the semiannual exceedance reporting required under 40 CFR 60.276a(b) and (g).

(b) These reports shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

(c) The Permittee shall submit a semi-annual report for each BLDS, the following information:

(1) All visible emission data where six minute averages exceeded 3 percent opacity;

(2) The dates and times when the alarm sounded and procedures to initiate corrective action were not initiated within one (1) hour, and the date and time when corrective actions were initiated;

(3) The dates and times when the alarm sounded and the cause of the alarm was not alleviated within three (3) hours, and the dates and times when the cause of the alarms was alleviated, and;

(4) The dates and times that the BLDS was not operational, and the reason(s) why it was not operational.

(d) The Permittee shall submit quarterly report to document compliance with the propane usage limit required in Condition D.29.8.

SECTION D.30 FACILITY OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – MELTSHOP

(n) Activities with emissions equal to or less than the thresholds provided in 326 IAC 2-7-1(21):

(1) Ladle tap hole cleaning and repair.

(2) Ladle/tundish refractory application and curing.

(3) Tundish dumping.

(4) Ladle dumping.

(5) Ladle/tundish refractory loading and removal.

(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.30.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from ladle tap hole cleaning and repair, ladle/tundish refractory application and curing, tundish dumping, and ladle dumping shall not exceed a pound per hour emission rate established as E in the following formula:

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:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

or

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:

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

SECTION D.31 FACILITY OPERATION CONDITIONS

Emission Unit Description:

Steel Technologies Operations:

(a) Slitting operations, 1/4 inch slitter line which includes two (2) shears and one (1) edge trimmer, constructed in 1994; and 1/2 inch slitter line which includes two (2) shears and one (1) edge trimmer, constructed in 2003 both lines re-permitted under Nucor Steel in 2008, each with a maximum design capacity of 300,000 pounds of hot rolled steel coils per hour.

(b) Six (6) natural gas-fired indirect air heaters, with each has a maximum heat input capacity of 0.8 MMBtu/hr, constructed in 1994 and re-permitted under Nucor Steel in 2008.

(c) One (1) leveler/straightener line, permitted for construction in 2009, controlled by one (1) baghouse, AC-01 with maximum design air flow rate of 10,000 actual cubic feet per minute (acfm), exhausting into the atmosphere.

(d) One (1) Cleaner with a mist eliminator for the Leveler/Straightener, with four (4) natural gas-fired burners at maximum total heat input rate of 14 MMBtu/hr approved in 2012 for construction.

(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.31.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limit listed in the table below:

Facility ID	Control ID	Process Weight Rate (ton/hour)	Particulate Emissions Limit (pound/hour)
Leveler/ Straightener	Baghouse- AC-01	300	63.0
Alkaline Cleaning/degreaser	Mist Eliminator AC-02	300	63.0

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:

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

(b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), when the process weight rate exceeds two hundred (200) tons per hour, the allowable emissions may exceed that shown in the table in 326 IAC 6-3-2(e) provided the concentration of particulate in the discharge gases to the atmosphere is less than one tenth (0.10) pound per one thousand (1,000) pounds of gases.

D.31.2 PM and PM10 Emissions Prevention of Significant Deterioration (PSD) Minor Limits [326 IAC 2-2]

The Permittee shall comply with the following particulate emission limits:

Facility ID	Control ID	PM Emissions Limit (pound/hour)	PM10 Emissions Limit (pound/hour)
Leveler/ Straightener	Baghouse- AC-01	1.38	0.97
Alkaline Cleaning/degreaser	Mist Eliminator AC-02	1.38	0.97

Compliance with these limits shall render the requirements of 326 IAC 2-2, not applicable with respect to PM and PM10 emissions.

D.31.3 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the PM emissions from the six (6) indirect air heaters shall each be limited to 0.293 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = 1.09 / Q^{0.26}$$

where Pt = Pounds of PM emitted per million Btu (lb/MMBtu) heat input, and
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu per hour) heat input.

The Q at the source at the time the 6 indirect heaters were permitted: (Q = 34 + 9 +15 + 9.98 + 71.04 + 10.9 + 4.8 = 154.72)

D.31.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the cleaner/degreaser and leveler/straightener and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.31.5 Testing Requirements [326 IAC 2-7-6(1), (6)][326 IAC 2-1.1-11]

Within five (5) years after the most recent valid compliance demonstration, the Permittee shall perform PM and PM10 testing on baghouse AC-01 associated with the Leveler/ Straightener to demonstrate compliance with the limits in Condition D.31.2, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every 5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 includes filterable and condensable PM.

D.31.6 Particulate Control

The baghouse associated with the leveler/straightener and the mist eliminators associated with the cleaner/degreaser for particulate control shall be in operation at all times the straightener/leveler and cleaner/degreaser are in operation.

D.31.7 Visible Emissions Notations [326 IAC 2-7-6(1)][326 IAC 2-7-5(1)]

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

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.31.8 Baghouse Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with leveler/straightener at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between 1.0 and 11.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once annually.

D.31.9 Broken or Failed Bag Detection

(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 - 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 (Section B - Emergency Provisions).

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

D.31.10 Record Keeping Requirements

(a) To document the compliance status with Condition D.31.7, the Permittee shall maintain records of the once per day visible emission notations from the leveler/straightener stack

exhaust and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.31.8, the Permittee shall maintain once per day records of the total pressure drop during normal operation and the reason for the lack of pressure drop notation (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.32 FACILITY OPERATION CONDITIONS

Emission Unit Description:

Direct Reduced Iron (DRI) handling system

(a) Rail Unload Hopper, identified as HP1, approved in 2012 for construction, with a designed capacity of 400 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(b) Vibratory Screening Feeder, identified as VF1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(c) Rail Unload Fines Drag Conveyor, identified as DC1, approved in 2012 for construction, with a designed capacity of 10 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(d) Rail Unload Fines Bagging Station, identified as BS1, approved in 2012 for construction, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly, including the following:

(1) BS1 Hopper, identified as HP2, with a designed capacity of 10 tons.

(2) BS1 Bagging Screw, identified as SC5, with a designed capacity of 15 tons per hour.

(e) Rail Unload Bucket Elevator, identified as BE1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(f) Two (2) Recirculating Conveyors, identified as SC1 and SC2, approved in 2012 for construction, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(g) Discharge Diverter, identified as DV1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(h) Hot Material Discharge Chute, identified as CH1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, exhausting uncontrolled to the atmosphere.

(i) Rail Unload Belt Conveyor, identified as BC1, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(j) Discharge Diverter, identified as DV2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(k) Silo Loading Belt Conveyor, identified as BC2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(l) Iron Carbide Silo, identified as ICS1, constructed in 1994 and approved in 2012 for modification,

SECTION D.32 FACILITY OPERATION CONDITIONS

with a designed capacity of 250 tons per hour and a designed storage capacity of 3585 tons, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(m) Vibratory Screening Feeder, identified as VF2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(n) Silo Fines Bagging Station, identified as BS2, approved in 2012 for construction, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly, including the following:

(1) BS2 Hopper, identified as HP3, with a designed capacity of 4 tons.

(2) BS2 Bagging Screw, identified as SC6, with a designed capacity of 4 tons per hour.

(o) Silo Bucket Elevator, identified as BE2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(p) Two (2) Recirculating Conveyors, identified as SC3 and SC4, approved in 2012 for construction, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(q) Discharge Diverter, identified as DV3, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(r) Hot Material Discharge Chute, identified as CH2, approved in 2012 for construction, with a designed capacity of 250 tons per hour, exhausting uncontrolled to the atmosphere.

(s) Silo Unloading Belt Conveyor, identified as BC3, approved in 2012 for construction, with a designed capacity of 250 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(t) Day Bin, identified as DB1, approved in 2012 for construction, with a designed capacity of 250 tons per hour and a designed storage capacity of 200 tons, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(u) Weigh Belt Feeder, identified as WB1, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(v) South Scrap Bay Belt Conveyor, identified as BC4, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(w) South Furnace Belt Conveyor, identified as BC10, constructed in 2005 and approved in 2012 for modification, with a designed capacity of 265 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(x) Weigh Belt Feeder, identified as WB2, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

SECTION D.32 FACILITY OPERATION CONDITIONS

(y) North Scrap Bay Belt Conveyor, identified as BC5, approved in 2012 for construction, with a designed capacity of 225 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(z) Belt Conveyor, identified as BC7, constructed in 2005 and approved in 2012 for modification, with a designed capacity of 265 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(aa) North Furnace Belt Conveyor, identified as BC9, constructed in 2005 and approved in 2012 for modification, with a designed capacity of 265 tons per hour, using Meltshop Baghouse1 or Meltshop Baghouse2 as control, exhausting to stack BH1 or BH2 accordingly.

(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.32.1 PM and PM10 Emissions Prevention of Significant Deterioration (PSD) Minor Limits [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) The PM emission rate from each DRI handling point other than the screening processes, when handling direct reduced iron, shall not exceed 0.0024 lb/ton.

(b) The PM emission rate from each screening process shall not exceed 0.025 lb/ton.

(c) The PM_{10} emission rate from each DRI handling point other than the screening processes, when handling direct reduced iron, shall not exceed 0.0011 lb/ton.

(d) The PM_{10} emission rate from each screening process shall not exceed 0.0087 lb/ton.

(e) The amount of direct reduced iron processed by the Direct Reduced Iron (DRI) Handling System shall be limited to 800,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with these emission limits will ensure that the potential to emit from this modification is less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM10 per year and therefore will render the requirements of 326 IAC 2-2 not applicable to the DRI handling system.

D.32.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limit listed in the table below:

Facility ID	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Rail Unload Hopper (HP1)	400	66.3
Vibratory Screening Feeder (VF1)	250	61.0
Rail Unload Bucket Elevator (BE1)	250	61.0
Discharge Diverter (DV1)	250	61.0

Facility ID	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Hot Material Discharge Chute (CH1)	250	61.0
Rail Unload Belt Conveyor (BC1)	250	61.0
Discharge Diverter (DV2)	250	61.0
Silo Loading Belt Conveyor (BC2)	250	61.0
Iron Carbide Silo (ICS1)	250	61.0
Vibratory Screening Feeder (VF2)	250	61.0
Silo Bucket Elevator (BE2)	250	61.0
Discharge Diverter (DV3)	250	61.0
Hot Material Discharge Chute (CH2)	250	61.0
Silo Unloading Belt Conveyor (BC3)	250	61.0
Day Bin (DB1)	250	61.0
South Furnace Belt Conveyor (BC10)	265	61.6
Belt Conveyor (BC7)	265	61.6
North Furnace Belt Conveyor (BC9)	265	61.6

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:

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

(b) Pursuant to 326 IAC 6-3-2, when the process weight rate exceeds two hundred (200) tons per hour, the allowable emissions may exceed that shown in the table in 326 IAC 6-3-2(e) provided the concentration of particulate in the discharge gases to the atmosphere is less than one tenth (0.10) pound per one thousand (1,000) pounds of gases.

D.32.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the DRI handling system and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition

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

D.32.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.32.1(e), the Permittee shall maintain records of the throughput of the Direct Reduced Iron (DRI) Handling System.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.32.5 Reporting Requirements

A quarterly report of the throughput of the Direct Reduced Iron (DRI) Handling System to document the compliance status with Condition D.32.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

SECTION E.1 NSPS

Emission Unit Description:

CASTRIP – LOW NOx BOILER

(b) One (1) natural gas fueled low-NO_x boiler, identified as Boiler ID No. 501, constructed in 2004, a heat input capacity of 71.04 MMBtu/hour, utilizing low-NOx burners, and exhausting to Stack 501. This boiler provides steam to the vacuum degasser. Propane will be used as back up fuel.

Under 40 CFR Part 60, Subpart Dc, this unit is considered steam generating units.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1][40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR Part 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart Dc.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports 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

E.1.2 Small Industrial-Commercial-Institutional Steam Generating Units NSPS [326 IAC 12] [40 CFR Part 60, Subpart Dc]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart Dc, (included as Attachment B to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

(1) 40 CFR § 60.40c(a)
(2) 40 CFR § 60.41c
(3) 40 CFR § 60.48c(g)(1)

SECTION E.2 NESHAP

Emission Unit Description:

COLD MILL – PICKLE LINES 1 AND 2

(x) Both Pickle Lines use enhanced HCl pickling solution and rinse water and are equipped with process tanks.

(1) Pickle Line 1, identified as PL1, constructed in 1988, with a maximum capacity of 250 tons/hr, controlled by a counter flow-packed scrubber and mist eliminators, and exhausting to stack S-17. The Pickle Line 1 scrubber has a design flow rate of 12,000 acf/min and a loading of 0.01 gr/dscf. Each pickle line has an electric static oiler.

Under 40 CFR Part 63, Subpart CCC, Pickle Line 1 is considered an existing continuous pickle line.

(2) Pickle Line 2, consisting of the following units:

(A) One (1) Pickle Line, identified as PL2, constructed in 1997, approved in 2013 for modification to allow processing of wider strip of steel with a maximum capacity of 250 tons/hr, controlled by a tray scrubber and mist eliminators, and exhausting to stack S-18. The Pickle Line 2 scrubber has a design flow rate of 9,000 acf/min and a loading of 0.01 gr/dscf. Each pickle line has an electric static oiler.

Under 40 CFR Part 63, Subpart CCC, Pickle Line 2 is considered an existing continuous pickle line.

(3) The tank farm treats the rinse water from Pickle Line 1 and Pickle Line 2. These tanks also store spent acid, raw acid, regenerated acid, oily wastewater treated waters for reuse, treatment process wastewater, and other process and treated waters.

COLD MILL – ACID REGENERATION

(ee) Acid Regeneration system, identified as EU-04, constructed in 1989, consisting of two natural gas fueled tangentially fired burners with a maximum rating of 5.6 MMBtu per hour, and an absorber and cyclone with emissions controlled by its own counter flow packed scrubber (identified as AR scrubber) with mist eliminator exhausting to stack S-31. The counter flow-packed scrubber has a design flow rate of 4,269 acf/min and loading of 0.04 gr/dscf. Propane is used as back up fuel.

Under 40 CFR Part 63, Subpart CCC, this unit is considered an existing acid regeneration plant.

WASTEWATER TREATMENT PLANT

(m) Three (3) raw acid/regenerated acid tanks, identified as T-867, T-868 and T-869, constructed in September 2002, with a maximum capacity of 33,000 gallons each, with emissions controlled by the pickle line scrubber, and exhausting to S-17.

(n) Four (4) spent pickle liquor tanks, identified as T-863, T-864, T-865 and T-866, constructed in September 2002, each with a maximum capacity of 33,000 gallons each, with emissions controlled by the pickle line scrubber, and exhausting to S-17.

Under 40 CFR Part 63, Subpart CCC, these units are considered new hydrochloric acid storage vessels.

(The information describing the process contained in this facility description box is descriptive information

and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart CCC.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports 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

E.2.2 Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants NESHAP [40 CFR Part 63, Subpart CCC] [326 IAC 20-29]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart CCC (included as Attachment D to the operating permit), which are incorporated by reference as 326 IAC 20-29, for the emission unit(s) listed above:

(1) 40 CFR § 63.1155(a)(1) through (3), (b), (c)
(2) 40 CFR § 63.1156
(3) 40 CFR § 63.1157(a)(1), (2), (b)(1) & (2)
(4) 40 CFR § 63.1159(a), (b), (c) - Except that the spent pickle liquor tanks (T-863, T-864, T-865 and T-866) are not subject to 40 CFR 63.1159(b)
(5) 40 CFR § 63.1160 (a)(1), (b)(1)(i) through (vii), (2)(i) through (iii)
(6) 40 CFR § 63.1161 (a), (b), (c)(1), (d)(1)(i) through (iv), (2)
(7) 40 CFR § 63.1162(a)(1) through (6), (b)(1) through (4), (c)
(8) 40 CFR § 63.1163(a)(2), (5), (d), (e),
(9) 40 CFR § 63.1164(a), (c)
(10) 40 CFR § 63.1165 (a)(1) through (10), (b)(i) through (iii), (2), (3), (c)
(11) 40 CFR § 63.1166
(12) Table 1 to Subpart CCC of Part 63– Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart CCC

SECTION E.3 NSPS

Emission Unit Description:

MELTSHOP– ELECTRIC ARC FURNACES, ARGON OXYGEN DECARBURIZATION (AOD) VESSELS, DESULFURIZATION, CONTINUOUS CASTERS, EAF DUST TREATMENT FACILITY, LMFs, PREHEATERS AND DRYERS

(nn) Two (2) Meltshop Electric Arc Furnaces (EAFs), identified as EAF #1 and EAF #2, constructed in 1989, approved for modification in 2007 to replace the furnace bottoms. EAF #1 consists of three (3) co-jet oxyfuel burner/lance, each has a rated capacity of 6 megawatt constructed in 1996, approved for modification in 2003 using oxygen, natural gas and propane as backup fuels. EAF #2 consists of three (3) co-jet oxyfuel burner/lance, each has a rated capacity of 6 megawatt constructed in 1996, approved for modification in 2003 using oxygen, natural gas and propane as backup fuels. EAF #1 consists of three (3) carbon injectors with total maximum rated capacity of 1000 pounds per minute and EAF #2 consists of three (3) carbon injectors with total maximum rated capacity of 1000 pounds per minute constructed in 1996, approved for modification in 2003, and approved in 2013 for modification by installing six (6) additional new oxy-fuel burners/lances, each with a designed capacity of 5.5 megawatt per hour (MW/hr) for a total of 33 MW/hr to each EAF, install hearth bottom stirring to each EAF, installation of three (3) additional carbon injectors to each EAF with total designed capacity of 1,000 pounds of carbon per minute per EAF. Together the EAFs and the Argon Oxygen Decarburization (AOD) have a maximum capacity of 502 tons/hour, with emissions controlled by multi compartment reverse air type baghouses (identified as Meltshop Baghouse1 and Meltshop Baghouse2). In addition the EAFs have the following associated equipment:

(1) Charge buckets for single charge operation, approved for in 2013 for construction.

(2) Enhancements to scrap bay cranes and Melt Shop overhead cranes, approved in 2013 for construction.

(3) Modifications, upgrades, repairs or additions to EAF, yard and LMF transformers to increase output, approved in 2013 for construction.

(4) Switching to a one (1) bucket charge operation at the EAFs, approved in 2013 for construction.

(5) Modifications to fans at both Melt Shop baghouse for increased energy efficiency, approved in 2013 for construction.

(6) Modifications to existing carbon injection systems, approved in 2013 for construction

(7) Seven (7) small charge buckets, five (5) buckets constructed in 1989 and two (2) charge buckets approved for construction in 2007.

(8) Three (3) additional large charge buckets used for single furnace charges on both EAFs, approved for construction in 2007.

(9) Twenty-five (25) EAFs ladles, twenty-one (21) constructed in 1989, four (4) ladles approved for construction in 2007.

(10) EAF charge handling currently utilizing two (2) overhead cranes with magnets and a conveyor to load charge buckets constructed in 1989 and approved for modification in 2007 with the addition of 2 new scrap cranes with magnetics, enhancement of existing cranes and/or magnetics, use of rail and/or truck dump and loader operations and the use of

SECTION E.3 **NSPS**

mobile cranes to load charge buckets in the scrap yard.

(11) Flux and alloy material handling system (top feed)for direct feeding of alloys, lime, carbon, scrap substitutes and other related materials to the EAFs constructed in 1989 and approved for modification in 2007 with the addition of bulk loading of material to the system in a three-sided building.

A continuous emission monitor (CEM) is used to monitor NOx, CO, and SO_2 emissions from the EAFs.

Under 40 CFR Part 60, Subpart AAa, these units are considered electric arc furnaces.

(1) The EAFs also utilize the following technologies:

(A) A direct shell evacuation (DSE) control system ("a fourth hole duct"),

(B) An overhead roof exhaust system consisting of canopy hoods,

(C) Oxy fuel burners, and

(2) Each or any combination of the Meltshop EAFs and AOD can independently produce the maximum capacity of 502 tons/hour of steel. Each Meltshop EAF can operate concurrently or independently to achieve this maximum capacity.

(3) The use of all types of scrap metal, scrap substitutes, including HBI, pig iron, DRI, Iron Carbide, various alloys, multiple grades of lime, charge and injection carbons, oxygen and argon to produce all grades of steel. These include, but are not limited to: ultra-low carbon, low carbon, medium carbon, high carbon, specialty, stainless and alloy steel products.

(4) Both the Meltshop Baghouse1 and Meltshop Baghouse2 capture the emissions from the Meltshop EAFs, AOD vessel, Desulfurization, Meltshop Continuous Casters, the three (3) Ladle Metallurgy Furnaces (EU-13 (a), EU-13 (b) and EU-13 (c)) LD#1, LDS#1, LDS#1a and other miscellaneous sources. Each Meltshop Baghouse can sufficiently control emissions independently.

(A) The Meltshop Baghouse1 is a multi compartment positive pressure baghouse, has a design air flow rate of 1,527,960 actual cubic foot/min (acf/min) and an outlet PM loading of 0.0018 grains/dry standard cubic foot (gr/dscf). This Meltshop Baghouse1 exhausts to a stack identified as BH1.

(B) The Meltshop Baghouse2 is a multi compartment positive pressure baghouse, has a design flow rate of 915,000 dscf/min and 1,200,000 acf/min and an outlet PM loading of 0.0018 gr/dscf. This Meltshop Baghouse2 exhausts to a stack identified as BH2.

A continuous emission monitor (CEM) for CO2 is used to monitor CO2 emissions from each Meltshop Baghouse.

(5) The fugitive emissions generated during the EAF furnace operations are captured by the Meltshop Roof Canopies or contained within the Meltshop Building.

(6) The Meltshop roof monitors include exhausts from the ladle preheaters, ladle dryers, tundish preheaters, tundish dryers, ladle lancing station, tundish dumping, fugitive

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emissions from the LMFs, fugitive emissions from the Meltshop Casters and other Meltshop operations.

(oo) One (1) Argon oxygen decarburization (AOD) vessel, identified as AOD1, constructed in 1995. One (1) top lance for AOD1 rated at 300,000 cubic feet/hour of oxygen. Together the AOD and the Meltshop EAFs have a total maximum capacity of 502 tons/hour, with emissions controlled by the Meltshop Baghouse1 which exhausts to a stack identified as BH1, and Meltshop Baghouse2 which exhausts to stack BH2. One Argon-Oxygen Decarburization Dryout and Preheat Burner, constructed pursuant to CP 107-3599-00038, as revised by A107-4631-00038, September 28, 1995.

Under 40 CFR Part 60, Subpart AAa, AOD1 is considered an argon-oxygen decarburization vessel.

(pp) Desulfurization (DS) is an additional step in the Meltshop operations that remove sulfur. It has a maximum capacity of 502 tons of metal per hour.

(qq) Two (2) Meltshop Continuous Casters, identified as CC #1 and CC #2, CC #1 was constructed in 1989, CC #2 was constructed in 1994, with total maximum capacity of 502 tons/hour, with emissions controlled by the Meltshop EAF Baghouse1 identified as vent BH1 which exhausts to stack BH1 or Meltshop EAF Baghouse2 which exhausts to stack BH2. Approved in 2012 to add a quench/descale system at both Meltshop Continuous Casters. The air flow rate from the existing caster steam vent, stack S-11 will increase by approximately 30,000 cubic feet per minute (cfm). Approved in 2013 for modification to allow casting of wider strip of steel. Casters can receive liquid steel from the EAF's, LMF's, AOD and the Castrip LMS or VTD.

(rr) An EAF dust transfer facilities, identified as DTF, constructed in 2004, with emission control by bin vents for the silos, and baghouse for truck/rail car loading. Dust transfer will also occur inside the building at both Meltshop baghouses.

Under 40 CFR Part 60, Subpart AAa, this unit is considered a dust handling system. Options for the dust transfer are:

(1) from silo to truck/railcar through a loading spout for offsite dust disposal,

(2) from silo to railcar through a loading spout for offsite dust disposal,

(ss) Three (3) Meltshop Ladle Metallurgy Furnaces (LMFs)/Stirring Station, two (2) identified as EU-13 (a) and (b), constructed in 1988, and approved for modification in 2009 by ducting the exhaust to the Meltshop Baghouses 1 and 2; and one (1) LMF identified as EU-13 (c) approved for construction in 2007 with a maximum capacity of 502 tons/hour each. All three LMFs are controlled by the meltshop Baghouses 1 and 2.

In addition the EAFs, AOD and LMFs have the following associated equipment:

(1) Ladle Preheaters, identified as LP #1a through LP #6a and LD-1, consisting of:

(A) Three (3) natural gas-fired ladle preheaters, identified as LP #1a, LP #2a, and LP #3a, approved for construction in 2007, each with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(B) One (1) natural gas-fired AOD ladle preheater, identified as LP #4a, approved for construction in 2007, with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and

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8.

(C) One (1) natural gas-fired ladle preheater, identified as LP #5a, approved for construction in 2007, with a heat input capacity of 10 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(D) One (1) natural gas-fired ladle preheater, identified as LP #6, approved for construction in 2006, with a heat input capacity of 12 MMBtu/hour, utilizing low-NOx burners, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8.

(E) One (1) natural gas-fired ladle preheater/dryer, identified as LD-1, approved for modification in 2007, with a heat input capacity of 10 MMBtu/hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stacks 7 and 8**,** or the Melt Shop baghouses.

(2a) Ladle Dryer, identified as LDS #1, constructed in 1989 and approved in 2011 for replacement, consisting of a low NOx natural gas fired burner, with a heat input capacity of 5 MMBtu per hour. Emissions are uncontrolled and exhausting to stack 12, or the Melt Shop baghouses.

(2b) One (1) natural gas-fired Ladle Dryer, identified as LDS #1a, approved for construction in 2007 and approved in 2011 for replacement, with a heat input capacity of 5 MMBtu per hour, with uncontrolled emissions exhausting to stack S-12, or the Melt Shop baghouses.

(3) Five (5) Tundish Preheaters, identified as TP1 - TP5, constructed in 1995, each with a heat input capacity of 6 MMBtu per hour, using propane as a backup fuel. Approved in 2013 for modification to increase their heat input from six (6) MMBtu per hour to twelve (12) MMBtu per hour each.

(4) Two (2) Tundish Dryout Stations, identified as TD #1 and TD #2. TD #1 was constructed in 1989, and TD#2 was constructed in 1990, each with a heat input capacity of 9 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(5) Eight (8) Tundish Nozzle Preheaters, identified as TNP #1-#8. Four (4) were constructed in 1995 and four (4) were constructed through the years and were permitted in 2013, consisting of a low NOx natural gas fired Preheaters, each with a heat input capacity of 0.8 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(6) One (1) natural gas-fired tundish dryout station, identified as TD #3, approved for construction in 2007, with a maximum heat input capacity of 2.4 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(7) Two (2) natural gas-fired mandrel dryers, identified as MD #1 and MD #2, approved for construction in 2007, each with a heat input capacity of 1.5 MMBtu per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to stack S-10.

(8) Fifteen (15) belt conveyors and 20 weight hoppers, with a maximum throughput of 200 tons per hour, approved for construction in 2007. These conveyors will supply lime, carbon and alloys to the new LMF EU-13(c)).

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(9) Flux and alloy material handling system for direct feeding of alloys, lime, carbon, scrap substitutes and other related materials to the LMFs, constructed in 1988 and approved for modification in 2007 with the addition of a three-sided building for bulk loading of material to the system.

(10) Two (2) natural gas-fired Ladle Warmer Burners, identified as LWB #1 and LWB #2, approved in 2011 for construction, each with a maximum heat input capacity of 3 MMBtu/hr to warm ladles at the Melt Shop.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.3.1 General Provisions Relating to NSPS [326 IAC 12-1-1][40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the requirements of 40 CFR 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart AAa.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports 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

E.3.2 Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 NSPS [326 IAC 12] [40 CFR Part 60, Subpart AAa]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart AAa (included as Attachment C to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

(1) 40 CFR § 60.270a(a), (b)
(2) 40 CFR § 60.271a
(3) 40 CFR § 60.272a(a)(1) through (3), (b)
(4) 40 CFR § 60.273a(b) through (d), (e)(1) through (3), (4)(i) through (v), (5), (6)(i), (ii), (7), (8), (f)(1) through (6), (g), except as modified by the approved Alternative Monitoring Program for Baghouse2, dated September 4, 2004.
(5) 40 CFR § 60.274a(a)(1), (2), (b) through (e), (h)(1) through (4)
(6) 40 CFR § 60.275a(a), (b)(1), (2), (c), (d), (e)(1) through (4), (f), (g), (h)(1) through (3), (i), (j)
(7) 40 CFR § 60.276a(a) through (e), (f)(1) through (5), (6)(i) through (iv), (7) through (22), (g), (h)(1) through (3)

SECTION E.4 NESHAP

Emission Unit Description:

EMERGENCY GENERATORS

(w1) Diesel fired generators and air compressors for power outages and emergencies.

(1) Cold Mill emergency generator, identified as GEN #3, constructed in 1997, with a capacity of 280 HP, with emissions uncontrolled.

(2) Hot Mill NC Cooling Tower emergency generator, identified as GEN #1, constructed in 1989, with a capacity of 2,100 HP, with emissions uncontrolled.

(3) Galv Line Pot emergency generator, identified as GEN #4, constructed in 1992, with a capacity of 890 HP, with emissions uncontrolled.

(4) MS Cooling Tower Cold Well emergency generator, identified as GEN #2, constructed in 1996, with a capacity of 2,520 HP, with emissions uncontrolled.

(5) Lip Seal emergency generator, identified as GEN #5, constructed in 1988, permitted in 2013, with a capacity of 30 HP with emissions uncontrolled

(6) Guard House emergency generator, identified as GEN #6, constructed in 2005, permitted in 2013, with a capacity of 67 HP with emissions uncontrolled

(7) VTD emergency generator, identified as GEN #7 with a capacity of 134 HP, constructed in 2003, permitted in 2013, with emissions uncontrolled,

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.4.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1,for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports 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

E.4.2 Stationary Reciprocating Internal Combustion Engine NESHAP [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ, (included as Attachment E to the operating permit), which are incorporated by reference as 326 IAC 20-82, for the emission unit(s) listed above:

(a)

Emergency Generators/ID	Capacity (HP)
Hot Mill NC Cooling Tower generator, identified as GEN #1,	2,100
Galv Line Pot generator, identified as GEN #4	890
MS Cooling Tower Cold Well generator, identified as GEN #2	2,520

(1) 40 CFR § 63.6580
(2) 40 CFR § 63.6585
(3) 40 CFR § 63.6590**(**a)(1)(i), (b)(3)(iii)
(4) 40 CFR § 63.6595(a)(1), (c)
(5) 40 CFR § 63.6640(f)(2)(i) through (iii), (3)
(6) 40 CFR § 63.6645(f)
(7) 40 CFR § 63.6660
(8) 40 CFR § 63.6665

(b)

Emergency Generators ID	Site Rating (HP)	Model/Manufactured/ Constructed Year
Lip Seal Generator, GEN #5	30	1988
Guard House Generator GEN #6	67	2005
VTD Generator GEN #7	134	2003
Cold Mill GEN#3	280	1997

(1) 40 CFR § 63.6580
(2) 40 CFR § 63.6585
(3) 40 CFR § 63.6590(a)(1)(ii)
(4) 40 CFR § 63.6602
(5) 40 CFR § 63.6605
(6) 40 CFR § 63.6625(e)(2), (f), (h), (i)
(7) 40 CFR § 63.6640(a), (b), (e), (f)(1), (2)(i), (3)
(8) 40 CFR § 63.6645(a)(5)
(9) 40 CFR § 63.6655(a)(1), (d), (f)(1)
(10) 40 CFR § 63.6660
(11) 40 CFR § 63.6665
Table 2c to Subpart ZZZZ, item (1)
Table 6 to Subpart ZZZZ, item 9
Table 8 (General Provisions (40 CFR Part 63)) - except per § 63.6645(a)(5), the following do not apply: § 63.7(b) and (c), § 63.8(e), (f)(4) and (f)(6), and § 63.9(b) through (e), (g) and (h)

SECTION E.5 NESHAP

Emission Unit Description:

D.2 – CASTRIP – LOW NOx BOILER

(b) One (1) natural gas fueled low-NO_x boiler, identified as Boiler ID No. 501, constructed in 2004, a heat input capacity of 71.04 MMBtu/hour, utilizing low-NOx burners, and exhausting to Stack 501. This boiler provides steam to the vacuum degasser. Propane will be used as back up fuel.

D.8 – LINDE GASES PLANT

(r) The Gases Plant is operated by LINDE Gases

(1) One (1) natural gas-fired boiler identified as ID No. 1, constructed in 1989, with a heat input capacity of 7 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-36. This boiler uses propane as a backup fuel.

(2) One (1) natural gas-fired boiler, identified as ID No. 2, constructed in 1994, with a heat input capacity of 15.0 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-37. This boiler uses propane as a backup fuel.

(3) One (1) natural gas-fired boiler, identified as the hydrogen plant boiler, constructed in 1996, with a heat input capacity of 9.98 MMBtu per hour, with emissions uncontrolled, and exhausting to stack S-30. This boiler uses propane as a backup fuel.

D.16 – COLD MILL – COLD REVERSING MILL 1 AND COLD MILL BOILER (CMB #1)

(z) One (1) natural gas fueled Cold Mill Boiler, identified as CMB#1, constructed in 1988, with a heat input capacity of 34 MMBtu per hour, with emissions uncontrolled and exhausting to stack S-19. The boiler uses propane as a backup fuel.

D.19– COLD MILL – ANNEALING FURNACES

(dd1) Eighteen (18) natural gas-fueled batch Annealing Furnaces, identified as EU-03, constructed in 2001. Each has a heat input capacity of 4.8 MMBtu per hour and a maximum throughput capacity of 200 tons of steel per hour. Emissions are uncontrolled and exhaust to roof vent (S-26).

(dd2) One (1) natural gas-fired annealing furnace, identified as AN-19, approved for construction in 2007, with a heat input capacity of 4.8 MMBtu per hour and a maximum throughput capacity of 200 tons of steel per hour, using propane as a backup fuel, with uncontrolled emissions exhausting to roof vent (S-26).

D.22 – COLD MILL – GALVANIZING LINE/GALVANNEAL, CONTINUOUS ANNEALLING, PHOSPHATE AND CHROMATE APPLICATION

(gg) Additional burners as follows:

(1) Forty four (44) Burners, identified as RB#1 – RB#44, constructed in 2002, each with a heat input capacity of 0.323 MMBtu per hour in radiant tube section with a maximum total capacity of 14.2 MMBtu per hour and option to replace nonconforming burners. The NOx emissions are controlled by a SCR System. The SCR/SNCR and SCR systems shall be referred to collectively as the SCR/SNCR system. The burners use natural gas as primary fuel and propane as backup fuel and exhaust to stack S-27.

SECTION E.5 NESHAP

(2) One (1) auxiliary burner with a maximum heat input of 3.2 MMBtu/hr in the Alkaline Cleaning Section. Emissions are uncontrolled and exhausting outside the building. The burner is natural gas fired and uses propane as backup.

D.26 – HOT STRIP MILL – ANNEALING FURNACES

(kk) Two (2) natural gas-fired annealing furnaces using propane as a backup fuel, identified as HM #1 and HM #2, each with a maximum heat input capacity of 14.505 MMBtu per hour, both constructed in 2006. Emissions are controlled by low NOx burners and exhaust to the atmosphere.

D.31 - Steel Technologies Operations

(d) One (1) Cleaner with a mist eliminator for the Leveler/Straightener, with four (4) natural gas-fired burners at maximum total heat input rate of 14 MMBtu/hr approved in 2012 for construction.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.5.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1 for the emission units listed above, except as otherwise specified in 40 CFR 63 Subpart DDDDD.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.5.2 Industrial, Commercial, and Institutional Boilers and Process Heaters Requirements NESHAP [40 CFR Part 63, Subpart DDDDD] [326 IAC 20-95]

The Permittee shall comply with the provisions of 40 CFR Part 63, Subpart DDDDD (included as Attachment F to the operating permit), which are incorporated by reference as 326 IAC 20-95, for the emission unit(s) listed above:

(1) 40 CFR § 63.7485
(2) 40 CFR § 63.7490
(3) 40 CFR § 63.7495(b)
(4) 40 CFR § 63.7499(l), (n)
(5) 40 CFR § 63.7500(a)(1)
(6) 40 CFR § 63.7510(e)
(7) 40 CFR § 63.7515(d)
(8) 40 CFR § 63.7540(a)(10), (11), (13)
(9) 40 CFR § 63.7545(a), (b), (f)

(10) 40 CFR § 63.7550(b)(1) through (4), (c)(1), (5)(i) through (iv), (xiv), (xvii)
(11) 40 CFR § 63.7555(a)(1)
(12) 40 CFR § 63.7560
(13) 40 CFR § 63.7565
(14) 40 CFR§ 63.7570
(15) 40 CFR§ 63.7575
Table 3 to Subpart DDDDD of Part 63, items (1) through (3)
Table 9 to Subpart DDDDD of Part 63, item (1)
Table 10 to Subpart DDDDD of Part 63

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT

CERTIFICATION

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038

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: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038

This form consists of 2 pages

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), 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 any of 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
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, 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: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

PART 70 OPERATING PERMIT
SEMI-ANNUAL NATURAL GAS FIRED BOILER CERTIFICATION

(Applicable for boilers > or = 10 MMBtu per hour that can burn both natural gas and other fuels. The natural gas fired boiler certification is not required for boilers that can physically only burn natural gas.)

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038

☐ Natural Gas Only
☐ Alternate Fuel burned
From:_____ To:_____

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

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Meltshop Electric Arc Furnaces
Parameter: Steel Production – tons of steel poured/tapped per twelve (12) consecutive month period
Limit: 4,397,520 tons of steel

QUARTER: _____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Strip Caster Line
Parameter: Steel Throughput/Production Limitation
Limit: 2,365,200 tons steel processing per year, based on a twelve (12) consecutive month period

QUARTER:_____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Cold Reversing Mill 1
Parameter: Mill steel throughput
Limit: 2,190,000 tons per 12 consecutive month period.

QUARTER: _____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Reversing and Tempering (R/T) Mill (a.k.a. Cold Reversing Mill 2)
Parameter: Mill steel throughput
Limit: 2,190,000 tons per twelve (12) consecutive month period.

QUARTER: _____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Two (2) annealing furnaces identified as HM #1 and HM #2
Parameter: Total Natural Gas Equivalent Usage
Limit: 484 million cubic feet of natural gas per twelve (12) consecutive month period.

NG equivalent conversion factor:
1 million cubic feet of natural gas = 5.42 thousand gallons propane

QUARTER:_____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Natural Gas Usage			
Propane Usage			
Natural Gas Equivalent Usage			
Natural Gas Usage			
Propane Usage			
Natural Gas Equivalent Usage			
Natural Gas Usage			
Propane Usage			
Natural Gas Equivalent Usage			

☐ No deviation occurred in this quarter.

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

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

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report - KELLY

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: AN-19, TD #3, MD #1, and MD #2
Parameter: Propane combusted
Limit: 1,089 thousand gallons per twelve consecutive month period.

QUARTER:_____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Replacement Crusher, TSP-6; Conveying Process with 10 drop points[1]
Parameter: Throughput
Limits:

Unit Description	Throughput Limit (tons/yr)
Replacement Crusher, TSP-6	2,671,800
*Conveying Process with 10 drop points[1]	2,671,800 each drop point 2,000,000 drop points #5-#10

Note: * Drop points #5 through #10 in Conveying Process with 10 drop points[1] have more stringent throughput limit in EU-10 Slag 25 Drop Points[5]. Therefore, #5 through #10 drop points shall each have a throughput limit of 2,000,000 tons/yr.

QUARTER:_____ YEAR:_____

Month	Column 1 Throughput This Month		Column 2 Throughput 11 Months		Column 1+2 Throughput 12 Month Total	
	Replacement Crusher, TSP-6	Conveying Process each 10 drop points[1]	Replacement Crusher, TSP-6	Conveying Process each 10 drop points[1]	Replacement Crusher, TSP-6	Conveying Process each 10 drop points[1]

[1] Ten Drop Points
#1 Existing conveyor (C) to new replacement crusher (TSP-6)
#2 New replacement crusher (TSP-6) to existing conveyor belt (D)
#3 Existing conveyor (D) to existing conveyor (B)
#4 Existing conveyor (B) to existing screen (TSP-2)
#5 Existing screen (TSP-8) to existing Shute (F)
#6 Existing screen (TSP-8) to existing Shute (G)
#7 Existing screen (TSP-8) to existing Shutes (H & I)
#8 Existing conveyor (K) to storage pile (SP-1)
#9 Existing conveyor (M) to storage pile (SP-2)
#10 Existing conveyor (S) to storage pile (SP-3)

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____.

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

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Screening Process, TSP-8; EU-10 Slag 25 Drop Points[5]
Parameter: Throughput
Limits:

Unit Description	Throughput Limit (tons/yr)
Screening Process, TSP-8	2,000,000
EU-10 Slag 25 Drop Points[5]	2,000,000 each drop point

QUARTER:_____ YEAR:_____

Month	Column 1 Throughput This Month		Column 2 Throughput 11 Months		Column 1+2 Throughput 12 Month Total	
	Screening Process, TSP-8	EU-10 Slag 25 Drop Points[5]	Screening Process, TSP-8	EU-10 Slag 25 Drop Points[5]	Screening Process, TSP-8	EU-10 Slag 25 Drop Points[5]

[5] Twenty-Five EU-10 Slag Drop Points
#1 TSP-8 to Shute F
#2 TSP- 8 to Shute G
#3 TSP-8 to Shute H
#4 TSP-8 to Shute I
#5 Shute F to Conveyor J
#6 Conveyor J to Conveyor K
#7 Conveyor K to Storage Pile #1
#8 Shute G to Conveyor L
#9 Magnetic Separator #3 to Storage Pile 7
#10 Conveyor L to Conveyor M
#11 Conveyor M to Storage Pile #2
#12 Shute H to Conveyor N
#13 Shute I to Conveyor N
#14 Magnetic Separator #4 and #5 to Storage Pile #8
#15 Conveyor N to Conveyor O
#16 Conveyor O to Cone Crusher
#17 Cone Crusher
#18 Cone Crusher to Conveyor P
#19 Conveyor P to Conveyor Q
#20 Conveyor Q to Screen TSP-8
#21 Shute H to Conveyor R
#22 Shute I to Conveyor R
#23 Conveyor R to Conveyor S
#24 Conveyor S to Storage Pile #3
#25 Magnetic Separator #6 to Storage Pile #9

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

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

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Blend Plant - Material handling Front-End Loader, BP-1; Blend Plant Conveying Process (6 Drop Points)[2]
Parameter: Throughput
Limits:

Unit Description	Throughput Limit (tons/yr)
Blend Plant Material handling Front-End Loader, BP-1	1,500,000
Blend Plant Conveying Process (6 Drop Points)[2]	1,500,000 each drop point

QUARTER:_____ YEAR:_____

Month	Column 1 Throughput This Month		Column 2 Throughput 11 Months		Column 1+2 Throughput 12 Months Total	
	Blend Plant Material handling Front-End Loader, BP-1	Blend Plant Conveying Process (6 Drop Points)[2]	Blend Plant Material handling Front-End Loader, BP-1	Blend Plant Conveying Process (6 Drop Points)[2]	Blend Plant Material handling Front-End Loader, BP-1	Blend Plant Conveying Process (6 Drop Points)[2]

[2] Six Drop Points:

#1 - #4 Hoppers drop slag into conveyor
#5 conveyor into stacker conveyor
#6 stacker conveyor to 3 piles

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____.

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Permanent Screening Plant -Screen, PS1/PS2 and Permanent Screening Conveying Process (8 drop points, including the front end loaders)[3]
Parameter: Throughput
Limits:

Unit Description	Throughput Limit (tons/yr)
Permanent Screening Plant -Screen, PS1	300,000
Permanent Screening Plant -Screen, PS2	300,000
Permanent Conveying Process (8 drop points)[3]	300,000each drop point
Permanent Screening Plant- Front End Loaders	300,000 each

QUARTER:_____ YEAR:_____

Month	Column 1 Throughput This Month				Column 2 Trhoguhput 11 Months			
	Permanent Screening Plant-Screen, PS1	Permanent Screening Plant-Screen, PS2	Permanent Screening Conveying Process (8 Drop Points)[3]	Front End Loaders	Permanent Screening Plant-Screen, PS1	Permanent Screening Plant-Screen, PS2	Permanent Screening Conveying Process (8 Drop Points)[3]	Front End Loaders

Month	Column 1 + 2 Throughput 12 Months Total			
	Permanent Screening Plant-Screen, PS1	Permanent Screening Plant-Screen, PS2	Permanent Screening Conveying Process (8 Drop Points)[3]	Front End Loaders

[3] Fourteen Drop Points:
#1 Front end loader or Stacker Conveyor from Blend Plant to grizzly feed hopper/Conveyor #1
#2 Conveyor #1 to Conveyor #2
#3 Conveyor #2 to Screens (PS1 / PS2)
#4 Screens (PS1 / PS2) to Conveyor #3
#5 Screens (PS1 / PS2) to Conveyor #4
#6 Screens (PS1 / PS2) to Conveyor #7
#7 Conveyor #3 to Pile #3
#8 Conveyor #4 to Pile #4
#9 Conveyor #7 to Pile #5
#10 Screens (PS1 / PS2) to Pile #6
#11 Magnetic Separator to Pile #1
#12 Front end loader or Conveyor #4 to crusher
#13 Crusher to conveyor #5
#14 Conveyor #5 to hopper

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____.

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Replacement Screen, TSP-2; Conveying Process (5 drop points)[4]
Parameter: Throughput
Limits:

Unit Description	Throughput Limit (tons/yr)
Replacement Screen, TSP-2	2,000,000
Conveying Process (5 drop points)[4]	2,671,800 each drop point

QUARTER: _____ YEAR:_____

Month	Column 1 Throughput This Month		Column 2 Throughput 11 Months		Column 1+2 Throughput 12 Month Total	
	Replacement Screen, TSP-2	Conveying Process (each 5 drop points)[4]	Replacement Screen, TSP-2	Conveying Process (each 5 drop points)[4]	Replacement Screen, TSP-2	Conveying Process (each 5 drop points)[4]

[4] Five drop points:
#1 metal separated by the new magnetic separator into pile #5
#4 slag that passed through the new magnetic separator
will be transferred via either 1 of the new conveyors TSP-1 or TSP-5 one of which
will be routed to the 305 tons/hour replacement crusher, TSP-6 and existing magnetic separator #2 to pile #6
#5 from crusher, TSP-6 back to the new replacement screen TSP-2
2 from new conveyor TSP-1 into new replacement screen, TSP-2
#3 from new replacement screen, TSP-2 to existing screening process,

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____.

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Meltshop, Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2, Tunnel Furnace Snub, and the Castrip/strip caster line ladle metallurgy station (LMS-2) and Castrip Vacuum Tank Degasser (VTD)
Parameter: GHG (CO2e) Emissions
Limit: Shall not exceed 544,917 tons per 12 consecutive month period.

QUARTER:_____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: DRI handling system
Parameter: Direct reduced iron (DRI) throughput
Limit: Less than 800,000 tons per 12 consecutive month period.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

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

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

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, 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".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ 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:_____
Title / Position: _____
Date:_____
Phone: _____

Attachment A

Fugitive Dust Control Plan
Approved March 28, 1999

NUCOR Steel
4537 South Nucor Road
Crawfordsville, Indiana 47933

SECTION 1 — INTRODUCTION

The following control plan, when implemented is designed to reduce uncontrolled fugitive dust, based on a PM10 mass emission rate basis. From paved roadways and parking lots by at least 50 percent and down to 16.8 pounds of silt per mile, unpaved roadways and traveled open areas by at least 90 percent instantaneous control, and storage piles and slag processing operations by 97 percent.

The plan shall be implemented on a year-round basis until such time as another plan is approved or ordered by the Indiana Department of Environmental Management (IDEM).

The person on site who is responsible for implementing the plan is:

NUCOR Steel
Environmental Manager
4537 South Nucor Road
Crawfordsville, Indiana 47933-9450
Telephone: (765) 361-2659

Whitesville Mill Service (Slag Processing)
Plant Manager
4537 South Nucor Road
Crawfordsville, Indiana 47933-9450
Telephone: (765) 364-9251

SECTION 2 — PAVED ROADS AND PARKING LOTS

Paved roads and parking lots are indicated on the attached site plan. Dust from these sources shall be controlled by the use of a vehicular sweeper or by water applications and shall be performed at least once every 14 days to achieve the limit of 16.8 pounds of silt per mile. The average daily traffic on these roads is anticipated up to 350 trucks per day and 400 automobiles' per day.

On request of the Assistant Commissioner, NUCOR shall sample and provide to IDEM surface material silt content and surface dust loadings in accordance with field and laboratory procedures given in Reference 1. IDEM will have the right to specify road segments to be sampled. NUCOR shall provide supplemental cleaning of paved road sections found to exceed the controlled silt surface loading of 16.8 pounds of silt per mile.

Exceptions — Cleaning of paved road segments and parking lots may be delayed by one day when:

(a) 0.1 or more inches of rain have accumulated during the 24-hour period prior to the scheduled cleaning.

(b) The road segment is closed or abandoned. Abandoned roads will be barricaded to prevent vehicle access.

(c) It is raining at the time of the scheduled cleaning.

(d) Roads are covered in snow or ice or temperature prohibits cleaning (freezing temperature)

SECTION 3 — UNPAVED ROADS

Unpaved roads at the slag processing facility shall be treated with an asphaltic emulsion petroleum resin, chemical dust suppressant, or water application. Unpaved roads outside of the slag processing area are maintenance roads that will be tarred-and-chipped, treated with asphaltic emulsion, petroleum resin chemical dust suppressant, or watered as needed for dust control due to moderate or light usage.

Control Requirements

1. Slag Processing Facility Unpaved Roads - All roads in the slag processing facility shall be unpaved and treated with an asphaltic emulsion, petroleum resin, chemical dust suppressant, or watered as needed. The program shall be implemented at the following rate:

Table 3-1

Material	Rate	Frequency
Asphaltic Emulsion	0.14 gal/yd^2	Once/Month (see below)
Petroleum Resin	0.14 gal/yd^2	Once/Month (see below)
Chemical Dust Suppressant	As Specified	Once/Month
Water	As Necessary	As Necessary

As an alternative, NUCOR may pave previously unpaved road sections and apply paved road cleaning measures to these newly paved roads at frequencies similar to existing paved roads in the immediate area.

2. Moderate Use of Roads - Fugitive dust emissions from unpaved roads receiving moderate usage shall be controlled to at least 90 percent instantaneous control, based on a PM10 mass emission basis, by tarring-and-chipping, treatment with an asphaltic emulsion, petroleum resin, chemical dust suppressant, or water application as specified below:

Table 3-2

Material	Rate	Frequency
Tarring-and-Chipping	As Necessary	Once/Month
Asphaltic Emulsion	0.14 gal/yd^2	Once/Month (see below)
Petroleum Resin	0.14 gal/yd^2 initial 0.14 gal/yd^2 subsequent	Once/Month (see below)
Chemical Dust Suppressant	As Specified	Once/Month (see below)
Water	As Necessary	As Necessary

As an alternative, NUCOR may pave previously unpaved road sections and apply paved road cleaning measures to these newly paved roads at frequencies similar to existing paved roads in the immediate area.

3. Light Use Maintenance Roads - Fugitive dust emissions from unpaved roads receiving light usage shall be controlled by an asphaltic emulsion, petroleum resin, chemical dust suppressant, or water as necessary to prevent excessive visible fugitive emissions.

Exceptions - Treating of unpaved road segments may be delayed by one day when:

(a) 0.1 or more inches of rain have accumulated during the 24-hour period prior to the scheduled treatment.

(b) The road segments are saturated with water such that the asphaltic emulsion, petroleum resin, or chemical dust suppressant cannot be accepted by the surface.

(c) The road segments are frozen or covered by ice, snow, or standing water.

(d) The road segment or area is closed or abandoned. Abandoned roads shall be barricaded.

(e) It is raining at the time of the scheduled treatment. Approved Control Methods

Approved Control Methods

The asphaltic emulsion, petroleum resin, and chemical dust suppressant products currently approved by IDEM for the use at NUCOR are as follows:

(a) Soil Cement

(b) Calcium Chloride

(c) Road Pro

(d) Petrotac

(e) Coherex

(f) Hydro_Pine

Application rates and frequencies of the approved product, approved equivalent or water shall be sufficient to provide at least 90 percent instantaneous dust control.

2. Tarring-and-Chipping —Tarring-and-chipping shall be applied once to any road segment consistent with good engineering practice and maintained as necessary to ensure fugitive dust control.

3. Asphaltic Emulsion — An asphalt emulsion product shall be applied at the frequency stated in Tables 3-1 or 3-2 from April through October, unless conditions require increase frequency or as required by IDEM or EPA to ensure fugitive dust control. Asphalt emulsion products shall be applied at a rate of 0.14 gallons per square yard per treatment.

4. Petroleum Resin — Petroleum resin products shall be applied at the frequency stated in Tables 3-1 or 3-2 from April through October, unless conditions require increased frequency or as required by IDEM or EPA to ensure fugitive dust control. Petroleum resin products shall be applied at a rate of 0.14 gallons per square yard for the initial treatment and 0.12 gallons per square yard for all subsequent treatments, with the second treatment immediately following the initial treatment.

5. Chemical Dust Suppressant — Commercially produced chemical dust suppressants specifically manufactured for that purpose shall be applied at the rate and frequency specified in the manufacturer's instructions or the IDEM written approval from April through October.

6. Approved Equivalents — No asphaltic emulsion product, petroleum resin product, or chemical dust suppressant shall be used as an equivalent to those listed above without the prior written approval of IDEM.

SECTION 4 – UNPAVED AREAS

Unpaved areas traveled about stockpiles shall be treated with chemical dust suppressant, asphaltic emulsion, or watered. Fugitive dust emissions shall be reduced by at least 90 percent instantaneous control on a PM10 mass emission basis.

Material	Rate	Avg. Daily Travel	Frequency
Asphaltic Emulsion	0.14 gal/yd^2	25-35 Vehicles	Once/Month (see below)
Chemical Dust Suppression	--		
Water	As Necessary		As Necessary

Exceptions — Treatment of unpaved areas may be delayed by one day when:

(a) 0.1 or more inches of rain have accumulated during the 24-hour period prior to the scheduled treatment.

(b) Unpaved areas are saturated with water such that chemical dust suppressant cannot be accepted by the surface.

(c) Unpaved areas are frozen or covered by ice, snow, or standing water.

(d) The area is closed or abandoned.

(e) It is raining at the time of the scheduled treatment.

SECTION 5 - OPEN AGGREGATE PILES

Open aggregate piles consist of slag in various stages of processing. To maintain product quality and chemical stability, watering the stockpiles shall be the primary means of dust control. Water must be limited so as to keep the moisture content of the product within standards. The total acres of piled material is 10 acres.

Pile Material	Moisture %	Silt %
Raw	2-5	1
Plus 4 inches	1-5	<1
5/8” x 2”	1-5	<1
0’ x ½”	1-5	<1
Mill Scale	1-5	1-3
Debris	2-5	4-6
AOD Slag	1-5	5-10
Refractory	0-1	1-3

Wind Erosion — Visible emissions from the storage piles shall be controlled by the application of water. Water added to the product during processing provides added control. Visible emissions shall be

determined in accordance with the procedure specified in Method 9. These limitations may not apply during periods when application of fugitive particulate control measures are either ineffective or unreasonable due to sustained very high wind speeds. During such periods, the Permittee must continue to implement all reasonable fugitive particulate control measures.

SECTION 6 — SLAG PROCESSING

The following individual operations make up the slag processing operations:

1. Transfer of Cushion Material to Slag Pot — Visible emissions shall be controlled by minimizing the drop height of the bucket and by dumping the bucket slowly.

2. Transfer of Liquid Slag from EAF to Slag Pot — Visible emissions shall be controlled by the EAF shop building. The visible emissions associated with the slag that is dug out of the slag pits located beneath each EAF shall be controlled by minimizing the drop height of the bucket and by dumping the bucket slowly.

3. Transfer of Liquid Slag to Slag Pit — Visible emissions shall be controlled by limiting the rate of pouring and by applying water to the slag pit after the molten slag has been completely dumped from the slag pot to the slag pit.

4. Slag Pit Transfer Activities — Visible emissions shall be controlled by watering of the slag pit.

5. Skull Pit Activities — Application of water to the skull pit activities, including removal of skull and transfer of skull, is prohibitive due to safety reasons because the materials are reused.

6. Screening and Crushing Operation — Visible emissions shall be controlled through the application of water via spray bars.

7. Processed Slag Transfer Activities — Visible emissions shall be controlled by limiting the drop height and rate the material is dumped, and controlling the rate at which the material is picked up.

8. Material Transportation Activities — Visible emissions from the material during inplant transportation shall be controlled by limiting the speed of the hauling equipment, covering the material if necessary, and limiting the bucket height during transport of the material if necessary.

SECTION 7 — VEHICLE SPEED CONTROL

Speed limits on paved roads shall be posted to be 20 miles per hour. Speed limits on unpaved roads shall be 10 miles per hour.

Compliance with these speed limits shall be monitored by plant guards and safety department. Upon violation, employees shall receive written warning, followed by a one-day suspension if continued violations occur. Visitors to the plant shall be denied access if repeated violations occur.

SECTION 8 — MATERIAL SPILL CONTROL

Incidents of material spillage on plant property shall be investigated by the person responsible for implementing the plan. That person shall arrange for prompt cleanup and shall contact the party responsible for the spill to insure that corrective action has been taken.

SECTION 9 - MONITORING AND RECORD KEEPING

Records shall be kept within a journal which will be updated on a regular basis by the environmental engineer of his/her designs. The journals shall include sweeping and spill control activities, and dust

suppressant application frequency. Also, the journal shall contain the total amount of water sprayed on the aggregate piles, and the slag processing spray bars. The journals shall be kept in storage for a minimum of three (3) years and shall be available for inspection or copying upon reasonable prior notice.

SECTION 10 - COMPLIANCE SCHEDULE

This plan shall be fully implemented when construction is completed. Until that time, the plan shall be implemented within portions of the site where construction is considered complete. Where construction is incomplete, appropriate control measures shall be implemented, but cannot be comprehensively addressed. These activities shall be included in the engineering journal.

SECTION 11 - UNPAVED ROADWAY AND UNPAVED AREA OPACITY LIMITS

Visible emissions from any unpaved road segment or unpaved area shall not exceed 5 percent opacity as averaged over any consecutive 3-minute period. All visible emission observations shall be determined in accordance with 40 CFR 60, Appendix A, Method 9, except as otherwise provided below:

1. In viewing fugitive emissions generated by vehicular traffic, the observer shall be positioned in accordance with the provisions of paragraph 2.1 of Method 9 except that if it is an overcast day the observer need not position himself with his back to the sun.

2. The observer shall begin reading when a vehicle crosses his line of sight which shall be approximately perpendicular to the trajectory of that vehicle. The observer shall continue to observe and record visible emission opacities at 15-second intervals along that same line of sight until no less than twelve consecutive opacity readings have been obtained. If, during the 3-minute evaluation period, another vehicle passes the observers line of sight on the roadway being evaluated, the observer shall terminate the evaluation for that 3-minute period and disregard the incomplete set of readings.

3. If IDEM inspectors note opacity readings greater than 3 percent, NUCOR shall provide supplemental dust suppressant treatment of unpaved roads and parking lots within 24 hours except as provided for in Sections 3 and 4.

SECTION 12 - REFERENCES

1. C. Cowherd, Jr., et al., Iron and Steel Plant Open Dust Source Fugitive Emission Evaluation, EPA 600/2-79-103, U.S. Environmental Protection Agency Cincinnati. OH, May 1979.

Indiana Department of Environmental Management
Office of Air Quality

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

Source Description and Location

Source Name:	Nucor Steel
Source Location:	4537 S. Nucor Road, Crawfordsville, IN 47933
County:	Montgomery
SIC Code:	3312 (Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills)
Operation Permit No.:	T107-30293-00038
Operation Permit Issuance Date:	June 1, 2012
PSD/SSM No.:	107-36834-00038
Significant Permit Modification No.:	107-37019-00038
Permit Reviewer:	Heath Hartley

Source Definition

This steel mini-mill consists of a source with on-site contractors:

(a) Nucor Steel, the primary operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933;

(b) Steel Technologies – Plant ID 107-00046, is located at 3560 South Nucor Road, Crawfordsville, Indiana, 47933;

(c) Whitesville Mill Processing, the supporting operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933;

(d) Linde Gases, the supporting operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933;

IDEM has determined that Nucor Steel and each of the on-site contractors are still under the common control of Nucor Corporation. Nucor Steel is a division of Nucor Corporation. These plants are considered one major source, as defined by 326 IAC 2-7-1(22), based on this contractual control. Therefore, the term “source” in the Part 70 documents refers to both Nucor Steel and the on-site contractors as one source. This conclusion was initially determined under Part 70 Operating Permit (T107-7172-00038) on December 29, 2006.

Only one combined Part 70 permit will continue to be issued to Nucor Steel, Steel Technologies, Whitesville Mill Processing, and LINDE Gases. The plant ID for the combined source is 107-00038.

Existing Approvals

The source was issued Part 70 Operating Permit No. 107-30293-00038 on June 1, 2012. The source has since received the following approvals:

Permit Type	Permit Number	Issuance Date
Significant Permit Modification	107-31578-00038	August 30, 2012
Review Request	107-32334-00038	September 27, 2012

Permit Type	Permit Number	Issuance Date
Administrative Amendment	107-32565-00038	December 18, 2012
Significant Source Modification	107-32615-00038	September 17, 2013
Review Request	107-33631-00038	September 26, 2013
Significant Permit Modification	107-32627-00038	October 4, 2013
Review Request	107-34255-00038	March 27, 2014
Administrative Amendment	107-35305-00038	March 5, 2015
Significant Source Modification	107-35918-00038	August 20, 2015
Significant Permit Modification	107-35939-00038	September 10, 2015
Significant Source Modification	107-36491-00038	January 26, 2016
Significant Permit Modification	107-36536-00038	February 19, 2016

County Attainment Status

The source is located in Montgomery County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]
$PM_{2.5}$	Unclassifiable or attainment effective April 5, 2005, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(a) Ozone Standards
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 ozone. Montgomery County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Montgomery County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

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

Fugitive Emissions

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, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status - Existing Source

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	>100
PM_{10}	>100
$PM_{2.5}$	>100
SO_2	>100
NO_X	>100
VOC	>100
CO	>100
Single HAP	>10
Total HAPs	>25

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant, excluding GHGs, 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(ff)(1).

(b) These emissions are based upon Significant Permit Modification No.: 107-36536-00038.

(c) This existing source is a major source of HAPs, as defined in 40 CFR 63.2, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed an application, submitted by Nucor Steel on February 15, 2016, relating to the increase in water capacity to the Hot Mill Contact Cooling Tower. The following is a list of the amended emission units and pollution control device(s):

Cooling Towers	No. of Cells	Average Capacity (gal/min)
Hot Mill Contact	~~4~~**5**	~~16,383~~**25,000**
~~Hot Mill Contact (expansion)~~	~~1~~	~~4,000~~

The Nucor plant went through a modification in 2013 in which several changes were made (see PSD/Significant Source Modification permit No.: 107-32615-00038, issued September 17, 2013. The modification was a major PSD modification, and therefore, was subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)). As part of that modification, the Hot Mill Contact Cooling Tower was an affected emissions unit with an increase in actual water recirculation rate.

The source is now proposing to increase the flow rate of water for the Hot Mill Contact Cooling Tower above the rate permitted as part of PSD/SSM No. 107-32615-00038. This increase is aggregated with the 2013 project (PSD/SSM 107-32615-00038), and therefore, this permitting action is subject to the requirements of 326 IAC 2-2 (PSD).

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

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

Permit Level Determination – Part 70 Modification to an Existing Source

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. If the control equipment has been determined to be integral, the table reflects the PTE after consideration of the integral control device.

PTE Change of the Modified Process			
Pollutant	**PTE Before Modification** (ton/yr)	**PTE After Modification** (ton/yr)	**Increase from Modification** (ton/yr)
PM	6.70	1.64	0
PM_{10}	3.35	0.82	0
$PM_{2.5}$	1.37E-02	3.35E-03	0
SO_2	0	0	0
VOC	0	0	0
CO	0	0	0
NO_X	0	0	0
HAPs	0	0	0

Appendix A of this TSD reflects the unrestricted potential emissions of the modification.

This source modification is subject 326 IAC 2-7-10.5(g) for significant source modifications because it is subject to 326 IAC 2-2 (PSD).

Permit Level Determination – PSD or Emission Offset or Nonattainment NSR

(a) The Nucor plant went through a modification in 2013 in which several changes were made (see PSD/Significant Source Modification permit No.: 107-32615-00038, issued September 17, 2013. The modification was a major PSD modification, and therefore, was subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)). As part of that modification, the Hot Mill Contact Cooling Tower was an affected emissions unit with an increase in actual water recirculation rate.

The source is now proposing to increase the flow rate of water for the Hot Mill Contact Cooling Tower above the rate permitted as part of PSD/SSM No. 107-32615-00038. This increase is aggregated with the 2013 project (PSD/SSM 107-32615-00038).

Therefore, the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) apply.

326 IAC 2-2-3 (Control Technology Review Requirements)

Pursuant to 326 IAC 2-2-3, the Permittee shall comply with the following BACT requirements:

(a) PM, PM_{10}, and $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall be controlled by the use of drift eliminators with a maximum designed drift rate not to exceed 0.001%.

(b) PM emissions from the Hot Mill contact cooling tower shall not exceed 0.38 lb/hr.

(c) PM_{10} emissions from the Hot Mill contact cooling tower shall not exceed 0.19 lb/hr.

(d) $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall not exceed 0.001 lb/hr.

326 IAC 2-2-4 (Air Quality Analysis Requirements)
Modeling was performed to determine if the small PM_{10} and $PM_{2.5}$ emission increases from the proposed modification would warrant a refined air quality analysis. Nucor's previous modeling was used as a starting point to perform a significant impact modeling analysis. All parameters used in this proposed modification modeling exercise are identical to the previous modeling analysis except for the meteorological data set with the Office of Air Quality (OAQ) using the latest version of AERMOD version 15181. OAQ used 2010-2014 meteorological data for this analysis. The surface data was taken from Indianapolis, Indiana and upper air measurements are taken at Lincoln, Illinois.

A significant impact analysis was conducted despite the fact that the source modification did not exceed PSD significant emission rates. Modeling was performed to determine if the source would exceed PSD significant impact levels (SILs). If the modeled concentrations exceed these levels, further air quality analysis is required. Refined modeling for $PM_{2.5}$ and PM_{10} was not required because the maximum modeled results did exceed SILs for $PM_{2.5}$ and PM_{10}. The SILs are defined by the following time averaging periods in Table 1 below and are compared to the maximum-modeled concentrations.

Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (µg/m^3)	SIGNIFICANT IMPACT LEVEL (µg/m^3)	REFINED AQ ANALYSIS REQUIRED
PM_{10}	Annual	0.0054	1	No
PM_{10}	24 hour	0.066	5	No
$PM_{2.5}$	Annual	0.0001	0.3	No
$PM_{2.5}$	24 hour	0.001	1.2	No

Based on the modeling results, no further modeling is needed. The modeled concentrations for the source modification fall below significance levels and will not cause any adverse air quality impacts.

Federal Rule Applicability Determination

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

NSPS:

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

NESHAP:

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial Process Cooling Towers, Subpart Q, which is incorporated by reference as 326 IAC 20-4, are not included in the permit because the Hot Mill Contact Cooling Tower is not operated with chromium-based water treatment chemicals

(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 requirements of 40 CFR Part 64, CAM are not applicable to the Hot Mill Contact Cooling Tower because it has a potential to emit before controls less than than the Part 70 major source threshold.

State Rule Applicability Determination

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

326 IAC 2-2 and 2-3 (PSD and Emission Offset)
PSD and Emission Offset applicability is discussed under the Permit Level Determination – PSD and Emission Offset section.

326 IAC 2-7-6(5) (Annual Compliance Cerification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certification that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The Hot Mill Contact Cooling Tower contains a particulate emissions limit under 326 IAC 2-2-3, therefore, it is not subject to 326 IAC 6-3-2, pursuant to 326 IAC 6-3-2(c)(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.

There are no changes to the compliance determination or compliance monitoring requirements as a result of this modification. Operation of the drift eliminators at all times will ensure compliance with PM/PM10/PM2.5 limits for the hot mill cooling tower. Therefore, no testing is required for this unit.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 107-30293-00038. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Revisions

Change 1: The permit has been revised to show the increase in water capacity to the Hot Mill Contact Cooling Tower.

Change 2: The permit has been revised to clarify which individual cooling towers are subject to BACT.

Additional Changes:

IDEM, OAQ has made additional revisions to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

Change 1: A correction was made to the condition regarding 326 IAC 6-4-2(4).

Change 2: On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule sites listed in the permit. These changes are not changes to the underlining provisions. The change is only to site of these rules in Section C - Risk Management Plan.

Change 3: IDEM revised Sections E.1 to E.5 for clarity.

Change 4: The Quarterly Report forms have been modified to remove the numbered months. The Permittee should state which months are being reported.

The permit has been revised as follows:

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

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

D.11 – COOLING TOWERS

(v) The contact and noncontact cooling towers are equipped with drift eliminators. Each cooling tower exhausts to the atmosphere.

(1) The cooling towers listed in the table below are subject to BACT:

Cooling Towers	No. of Cells	Average Capacity (gal/min)
Castrip Contact*	**4**	**12,000**
Castrip Non Contact*	**7**	**14,400**
Vacuum Degasser Contact*	**1**	**8,000**
Vacuum Degasser Non Contact*	**1**	**8,000**
Hot Mill Contact**	**5**	**25,000**

***Note: The cooling towers that are subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.**
****The Hot Mill Contact cooling tower is subject to BACT per SSM 107-36834-00038.**

(2) The cooling towers listed in the table below are not subject to BACT[2]:

Cooling Towers	No. of Cells	Average Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Meltshop Non Contact	9	60,000	Galvanizing/Annealing Non Contact	2	6,500
[1]Meltshop Caster Contact	2	5,000	Annealing Non Contact	2	5,000
[1]Meltshop Caster Contact(expansion)	2	5,000	~~Castrip Contact~~	~~4~~	~~12,000~~
~~Hot Mill Contact~~	~~4~~	~~16,383~~	~~Castrip Non Contact~~	~~7~~	~~14,400~~
~~Hot Mill Contact (expansion)~~	~~1~~	~~4,000~~			
Hot Mill Non Contact	4	25,319			
Laminar Contact	3	11,600	LINDE Non Contact (CT-91B)	2	3,200
Cold Mill Non Contact	2	10,000			
Cold Mill Non Contact (expansion)	1	5,000			
~~Vacuum Degasser Contact~~	~~1~~	~~8,000~~	~~Vacuum Degasser Non Contact~~	~~1~~	~~8,000~~
(a) One (1) Cooling Tower, approved in 2012 for construction, with average capacity of 1,840 gallons per minute (gpm), located at LINDE GASES PLANT.					

[2]**Note: The cooling towers that are not subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.**

*****

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 the attached plan as in Attachment A. The provisions of 326 IAC 6-5 are not federally enforceable. ~~326 IAC 6-4-2(4) is not federally enforceable.~~

*****

C.15 Risk Management Plan [326 IAC 2-7-5(1~~2~~**1**)][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.

*****

SECTION D.11 FACILITY OPERATION CONDITIONS

Emission Unit Description:

COOLING TOWERS

(v) The contact and noncontact cooling towers are equipped with drift eliminators. Each cooling tower exhausts to the atmosphere.

(1) The cooling towers listed in the table below are subject to BACT:

Cooling Towers	**No. of Cells**	**Average Capacity (gal/min)**
Castrip Contact*	**4**	**12,000**
Castrip Non Contact*	**7**	**14,400**
Vacuum Degasser Contact*	**1**	**8,000**
Vacuum Degasser Non Contact*	**1**	**8,000**
Hot Mill Contact**	**5**	**25,000**

***Note: The cooling towers that are subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.**
****The Hot Mill Contact cooling tower is subject to BACT per SSM 107-36834-00038.**

(2) The cooling towers listed in the table below are not subject to BACT[2]:

Cooling Towers	No. of Cells	**Average** Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Meltshop Non Contact	9	60,000	Galvanizing/Annealing Non Contact	2	6,500
[1]Meltshop Caster Contact	2	5,000	Annealing Non Contact	2	5,000
[1]Meltshop Caster Contact (expansion)	2	5,000	~~Castrip Contact~~	~~4~~	~~12,000~~
~~Hot Mill Contact~~	~~4~~	~~16,383~~	~~Castrip Non Contact~~	~~7~~	~~14,400~~
~~Hot Mill Contact (expansion)~~	~~1~~	~~4,000~~			
Hot Mill Non Contact	4	25,319			
Laminar Contact	3	11,600	LINDE Non Contact (CT-91B)	2	3,200
Cold Mill Non Contact	2	10,000			
Cold Mill Non Contact (expansion)	1	5,000			

~~Vacuum Degasser Contact~~	~~1~~	~~8,000~~	~~Vacuum Degasser Non Contact~~	~~1~~	~~8,000~~

(a) One (1) Cooling Tower, approved in 2012 for construction, with average capacity of 1,840 gallons per minute (gpm), located at LINDE GASES PLANT.

[2]**Note: The cooling towers that are not subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.**

INSIGNIFICANT ACTIVITIES – COOLING TOWERS

(b) One (1) Non-Contact Cooling Tower, identified as CT-91A, approved in 2010 for construction, with an average capacity of 900 gallons per minute (gpm), located at LINDE GASES PLANT.

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

*****

D.11.2 Cooling Towers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 and PSD/SSM 107-36834-00038, the Permittee shall comply with the following BACT requirements:

(a) PM, PM_{10}, and $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall be controlled by the use of drift eliminators with a maximum designed drift rate not to exceed 0.001%.

(b) PM emissions from the Hot Mill contact cooling tower shall not exceed 0.38 lb/hr.

(c) PM_{10} emissions from the Hot Mill contact cooling tower shall not exceed 0.19 lb/hr.

(d) $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall not exceed 0.001 lb/hr.

D.11.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

*****

SECTION E.1 ~~FACILITY OPERATION CONDITIONS~~ **NSPS**

*****

E.1.1 General Provisions Relating to **New Source Performance Standards** ~~NSPS~~ [326 IAC 12-1-1][40 CFR Part 60, Subpart A]

(a) ~~The Permittee shall comply with the provisions of~~ **Pursuant to** 40 CFR Part 60**.1**, **the Permittee shall comply with the provisions of 40 CFR Part 60** Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1~~-1~~, for ~~this boiler, in accordance with schedule in~~ **the emission unit(s) listed above, except as otherwise specified in** 40 CFR Part 60, Subpart ~~A~~**Dc**.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports 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

E.1.2 ~~Standards of Performance for~~ Small Industrial-Commercial-Institutional Steam Generating Units **NSPS [326 IAC 12]** [40 CFR Part 60, Subpart Dc]

~~Pursuant to~~ **The Permittee shall comply with the following provisions of** 40 CFR Part 60, Subpart Dc, **(included as Attachment B to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:** ~~this boiler shall comply with the following provisions:~~

SECTION E.2 **~~FACILITY OPERATION CONDITIONS~~ NESHAP**

*****

E.2.1 General Provisions Relating to ~~NESHAP~~ **National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63** [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1~~155~~, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1~~-1~~, for the ~~Pickle Line 1, identified as PL1, Pickle Line 2, identified as PL2, and the tanks in the tank farm that store virgin or regenerated hydrochloric acid for Pickle Line 1 and Pickle Line 2, Acid Regeneration system, identified as EU-04, HCl storage tanks (T-867, T-868 and T-869) and spent pickle liquor tanks (T-863, T-864, T-865 and T-866) in accordance with schedule~~ **emission unit(s) listed above, except as otherwise specified** in 40 CFR Part 63, Subpart CCC.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports 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

E.2.2 ~~National Emissions Standards for Hazardous Air Pollutants for~~ Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants **NESHAP** [40 CFR Part 63, Subpart CCC] **[326 IAC 20-29]**

~~Pursuant to~~ **The Permittee shall comply with the following provisions of** 40 CFR Part 63, Subpart CCC **(included as Attachment D to the operating permit)**, ~~Pickle Line 1, identified as PL1, Pickle Line 2, identified as PL2, and the tanks in the tank farm that store virgin or regenerated hydrochloric acid tank farm for Pickle Line 1 and Pickle Line 2, Acid Regeneration system, identified as EU-04, HCl storage tanks (T-867, T-868 and T-869) and spent pickle liquor tanks (T-863, T-864, T-865 and T-866)~~ **which are incorporated by reference as 326 IAC 20-29, for the emission unit(s) listed above**~~shall comply with the following provisions~~:

*****

SECTION E.3 ~~FACILITY OPERATION CONDITIONS~~ NSPS

E.3.1 General Provisions Relating to NSPS [326 IAC 12-1-1][40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, t~~T~~he Permittee shall comply with the requirements of 40 CFR 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1~~-1~~, for the~~ two (2) Meltshop Electric Arc Furnaces (EAFs), identified as EAF #1 and EAF #2, the Argon oxygen decarburization (AOD) vessels, identified as AODs, and the EAF dust transfer facility, identified as DTF, in accordance with schedule~~ **emission unit(s) listed above, except as otherwise specified** in 40 CFR Part 60, Subpart ~~A~~**AAa**.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and

reports 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

E.3.2 ~~New Source Performance Standards for~~ Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 **NSPS [326 IAC 12]** [40 CFR Part 60, Subpart AAa]

~~Pursuant to~~ **The Permittee shall comply with the following provisions of** 40 CFR Part 60, Subpart AAa **(included as Attachment C to the operating permit)**, ~~the two (2) Meltshop Electric Arc Furnaces (EAFs), identified as EAF #1 and EAF #2, the Argon oxygen decarburization (AOD) vessels, identified as AODs, and the EAF dust transfer facility, identified as DTF, shall comply with the following provisions~~ **which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above**:

*****

SECTION E.4 ~~FACILITY OPERATION CONDITIONS~~NESHAP

*****

E.4.1 General Provisions Relating to ~~NESHAP~~ **National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63** [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) **Pursuant to 40 CFR 63.1 t**~~T~~he Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1~~-1~~,for the ~~generators except when otherwise specified~~ **emission unit(s) listed above, except as otherwise specified** in 40 CFR Part 63, Subpart ZZZZ.

(b) **Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports 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

E.4.2 ~~National Emissions Standards for Hazardous Air Pollutants for~~ Stationary Reciprocating Internal Combustion Engine **NESHAP** [40 CFR Part 63, Subpart ZZZZ~~- Emission Units > 500 HP capacities constructed before December 19, 2002~~] **[326 IAC 20-82]**

~~Pursuant to~~ **The Permittee shall comply with the following provisions of** 40 CFR Part 63, Subpart ZZZZ, **(included as Attachment E to the operating permit), which are incorporated by reference as 326 IAC 20-82, for the emission unit(s) listed above** ~~the following existing stationary engines with > 500 HP capacities constructed before December 19, 2002 shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ no later than June 15, 2007~~:

(a)

Emergency Generators/ID	Capacity (HP)
Hot Mill NC Cooling Tower generator, identified as GEN #1,	2,100
Galv Line Pot generator, identified as GEN #4	890
MS Cooling Tower Cold Well generator, identified as GEN #2	2,520

(1) 40 CFR § 63.6580
(2) 40 CFR § 63.6585
(3) 40 CFR § 63.6590**(**a)(1)(i), (b)(3)(iii)
(4) 40 CFR § 63.6595(a)(1), (c)
(5) 40 CFR § 63.6640(f)(2)(i) through (iii), (3)
(6) 40 CFR § 63.6645(f)
(7) 40 CFR § 63.6660
(8) 40 CFR § 63.6665

~~E.4.3 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units equal to or less than 500 brake HP located at a major source with commencement of construction before June 12, 2006~~

~~Pursuant to 40 CFR Part 63, Subpart ZZZZ, the emergency generators with < 500 HP capacities constructed before June 12, 2006 shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ no later than May 3, 2013:~~

(b)

Emergency Generators ID	Site Rating (HP)	Model/Manufactured/ Constructed Year
Lip Seal Generator, GEN #5	30	1988
Guard House Generator GEN #6	67	2005
VTD Generator GEN #7	134	2003
Cold Mill GEN#3	280	1997

(1) 40 CFR § 63.6580
(2) 40 CFR § 63.6585
(3) 40 CFR § 63.6590(a)(1)(ii)
(4) 40 CFR § 63.6602
(5) 40 CFR § 63.6605
(6) 40 CFR § 63.6625(e)(2), (f), (h), (i)
(7) 40 CFR § 63.6640(a), (b), (e), (f)(1), (2)(i), (3)
(8) 40 CFR § 63.6645(a)(5)
(9) 40 CFR § 63.6655(a)(1), (d), (f)(1)
(10) 40 CFR § 63.6660
(11) 40 CFR § 63.6665
Table 2c to Subpart ZZZZ, item (1)
Table 6 to Subpart ZZZZ, item 9
Table 8 (General Provisions (40 CFR Part 63)) - except per § 63.6645(a)(5), the following do not apply: § 63.7(b) and (c), § 63.8(e), (f)(4) and (f)(6), and § 63.9(b) through (e), (g) and (h)

SECTION E.5 **~~FACILITY OPERATION CONDITIONS~~NESHAP**

*****

E.5.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.~~7565~~**1**, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1~~-1~~ for the ~~above affected~~ emission units **listed above,** ~~as specified in Table 10 of 40 CFR 63, Subpart DDDDD in accordance with schedule~~ **except as otherwise specified** in 40 CFR 63 Subpart DDDDD.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

~~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~~

E.5.2 ~~National Emission Standards for Hazardous Air Pollutants for~~ Industrial, Commercial, and Institutional Boilers and Process Heaters Requirements **NESHAP** [40 CFR Part 63, Subpart DDDDD] **[326 IAC 20-95]**

The Permittee shall comply with t~~T~~he provisions of 40 CFR Part 63, Subpart DDDDD ~~(National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters) apply to the above affected emission units and shall comply with the following provisions no later than January 31, 2016~~ **(included as Attachment F to the operating permit), which are incorporated by reference as 326 IAC 20-95, for the emission unit(s) listed above**:

*****

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-30293-00038
Facility: Meltshop Electric Arc Furnaces
Parameter: Steel Production – tons of steel poured/tapped per twelve (12) consecutive month period
Limit: 4,397,520 tons of steel

QUARTER: _____YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
~~Month 1~~			
~~Month 2~~			

~~Month 3~~			

☐ No deviation occurred in this quarter.

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

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

*****

Note: this change has been made to all reporting forms.

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 107-36834-00038 and Significant Permit Modification 107-37019-00038. The staff recommend to the Commissioner that this Part 70 Significant Source Modification and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Heath Hartley at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8217 or toll free at 1-800-451-6027 extension 2-8217.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A: Emission Calculations

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Uncontrolled Potential to Emit (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**HAPs**
Generator Lip Seal (30 HP)	0.02	0.02	0.02	0.02	0.23	0.02	0.05	2.03E-04
Generator Guard Shack (67 HP)	0.04	0.04	0.04	0.03	0.52	0.04	0.11	4.54E-04
Generator Transfer Car (99 HP)	0.95	0.95	0.95	0.89	13.44	1.09	2.90	1.18E-02
Generator VTD (134 HP)	0.07	0.07	0.07	0.07	1.04	0.08	0.22	9.08E-04
Tundish Preheaters	0.49	1.96	1.96	0.15	25.76	1.42	21.64	0.49
Melt Shop Baghouse	>100	>100	>100	>100	>100	>100	>100	>10
Melt Shop & Caster Fugitives	-	-	-	-	-	-	-	-
Castrip Caster	NA	NA	NA	-	-	-	-	NA
Tunnel Furnace 1 & 2	0.82	3.26	3.26	0.26	42.94	2.36	36.07	0.81
Tundish Nozzle Preheaters	0.03	0.10	0.10	0.01	1.37	0.08	1.15	0.03
Shuttle Furnaces 1,2	0.21	0.85	0.85	0.07	11.16	0.61	9.38	0.21
Snub Furnace	0.05	0.20	0.20	0.02	2.58	0.14	2.16	0.05
2 Hot Mill Annealing Furnaces	0.24	0.95	0.95	0.07	12.46	0.69	10.46	0.24
Hot Strip Rolling Mill	-	-	-	-	-	131.93	-	-
Pickle Line No 2	NA	NA	NA	-	-	-	-	NA
Slag Operations	508.17	187.57	180.35	-	-	-	-	-
Coil Cutting	20.27	20.27	20.27	0.03	4.82	0.26	4.05	0.09
Storage Piles - Wind Erosion	71.47	35.73	5.36	-	-	-	-	-
Storage Piles - Loading/Unloading	0.89	0.42	0.06	-	-	-	-	-
Slag Roads	80.00	22.12	2.10	-	-	-	-	-
New Storage Piles - Wind Erosion	21.44	10.72	1.61	-	-	-	-	-
New Storage Piles - Loading/Unloading	1.06	0.50	0.08	-	-	-	-	-
New Slag Roads	54.82	14.51	1.49	-	-	-	-	-
Hot Mill Contact Cooling Tower	1.64	0.82	0.00	-	-	-	-	-
Total	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>25**

** PM2.5 listed is direct PM2.5*
NA - Not Avaliable
The above table is not a complete account of all emissions at this source.

Potential to Emit after Control (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**HAPs**
Generator Lip Seal (30 HP)	0.02	0.02	0.02	0.02	0.23	0.02	0.05	2.03E-04
Generator Guard Shack (67 HP)	0.04	0.04	0.04	0.03	0.52	0.04	0.11	4.54E-04
Generator Transfer Car (99 HP)	0.95	0.95	0.95	0.89	13.44	1.09	2.90	1.18E-02
Generator VTD (134 HP)	0.07	0.07	0.07	0.07	1.04	0.08	0.22	9.08E-04
Tundish Preheaters	0.49	1.96	1.96	0.15	25.76	1.42	21.64	4.86E-01
Melt Shop Baghouse	388.16	398.66	398.66	725.59	769.57	197.89	4397.52	1.05
Melt Shop & Caster Fugitives	0.92	0.92	0.68	-	-	-	-	-
Castrip Caster	1.78	1.78	1.78	-	-	-	-	1.78
Tunnel Furnace 1 & 2	0.82	3.26	3.26	0.26	42.94	2.36	36.07	0.81
Tundish Nozzle Preheaters	0.03	0.10	0.10	0.01	1.37	0.08	1.15	0.03
Shuttle Furnaces 1,2	0.21	0.85	0.85	0.07	11.16	0.61	9.38	0.21
Snub Furnace	0.05	0.20	0.20	0.02	2.58	0.14	2.16	0.05
2 Hot Mill Annealing Furnaces	0.24	0.95	0.95	0.07	12.46	0.69	10.46	0.24
Hot Strip Rolling Mill	-	-	-	-	-	131.93	-	-
Pickle Line No 2	3.38	3.38	3.38	-	-	-	-	3.92
Slag Operations	15.23	5.62	5.40	-	-	-	-	-
Coil Cutting	2.03	2.03	2.03	0.03	4.82	0.26	4.05	0.09
Storage Piles - Wind Erosion	2.14	1.07	0.16	-	-	-	-	-
Storage Piles - Loading/Unloading	0.03	0.01	1.90E-03	-	-	-	-	-
Slag Roads	8.00	2.21	0.21	-	-	-	-	-
New Storage Piles - Wind Erosion	0.64	0.32	0.05	-	-	-	-	-
New Storage Piles - Loading/Unloading	3.19E-02	1.51E-02	2.28E-03	-	-	-	-	-
New Slag Roads	3.64	0.96	0.10	-	-	-	-	-
Hot Mill Contact Cooling Tower	1.64	0.82	3.35E-03	-	-	-	-	-
Total	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>25**

** PM2.5 listed is direct PM2.5*
The above table is not a complete account of all emissions at this source.

Appendix A: D.11 Hot Mill Contact Cooling Tower

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Emission Source	Circulation Rate (gal/min)	Circulation Rate (gal/hr)	TDS Content (average mg/l)	Drift Loss (gal/gal of circulation)	Operating Hours (hr/yr)
Cooling Tower EXISTING	20,383	1,222,980	3,000	0.005%	8760
Cooling Tower AFTER MOD	25,000	1,500,000	3,000	0.001%	8760

Circulating Water TDS = (CC) (TDS)

Circulating Water TDS = $\frac{[(1)\ (3000\ mg/l)]\ (1.0g/1000\ mg)\ (3.785\ L/gal)}{(453.6\ g/lb)}$

Circulating Water TDS =	EXISTING	2.503E-02	lb/gal
	AFTER MOD	2.503E-02	lb/gal

Drift = (DR) (CW) = (0.00005) (1222980 gal/hr) (8760 hr/yr)	EXISTING	535,665	gal/year
Drift = (DR) (CW) = (0.00001) (1500000 gal/hr) (8760 hr/yr)	AFTER MOD	131,400	gal/year

Drift Particulate = (Drift) (Circulating Water TDS)
Drift Particulate = (535665.24 gal/yr) (0.02503 lb/gal) =

	PM	PM10*	PM2.5*	
EXISTING PTE	6.70	3.35	1.37E-02	ton/yr
PTE AFTER MOD	1.64	0.82	3.35E-03	ton/yr
PTE AFTER MOD	0.38	0.19	0.001	lb/hr
INCREASE (Per SSM 107-36834-00038)	-5.06	-2.53	-1.03E-02	ton/yr

*See Cooling Tower Particle Size Distribution below

Note: Cooling Towers will not use VOC/HAP-containing chemicals

Appendix A: D.11 Hot Mill Contact Cooling Tower

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Cooling Tower Particle Size Distribution

EPRI Droplet Diameter (µm)	Droplet Volume (μm^3)	Droplet Mass (µg)	Particle Mass (solids) (µg)	Solid Particle Volumne (μm^3)	Solid Particle Diameter (µm)	EPRI % Mass Smaller	
10	524	5.24E-04	1.57E-06	0.71	1.11	0.00	
20	4189	4.19E-03	1.26E-05	5.71	2.22	0.20	
				Interpolation --->	**2.50**	**0.204**	% of PM is PM2.5
30	14137	1.41E-02	4.24E-05	19.28	3.33	0.23	
40	33510	3.35E-02	1.01E-04	45.70	4.44	0.51	
50	65450	6.54E-02	1.96E-04	89.25	5.54	1.82	
60	113097	1.13E-01	3.39E-04	154.22	6.65	5.70	
70	179594	1.80E-01	5.39E-04	244.90	7.76	21.35	
90	381704	3.82E-01	1.15E-03	520.50	9.98	49.81	
				Interpolation --->	**10.00**	**49.996**	% of PM is PM10
110	696910	6.97E-01	2.09E-03	950.33	12.20	70.51	
130	1150347	1.15E+00	3.45E-03	1568.65	14.42	82.02	
150	1767146	1.77E+00	5.30E-03	2409.74	16.63	88.01	
180	3053628	3.05E+00	9.16E-03	4164.04	19.96	91.03	
210	4849048	4.85E+00	1.45E-02	6612.34	23.29	92.47	
240	7238229	7.24E+00	2.17E-02	9870.31	26.61	94.09	
270	10305995	1.03E+01	3.09E-02	14053.63	29.94	94.69	
300	14137167	1.41E+01	4.24E-02	19277.95	33.27	96.29	
350	22449298	2.24E+01	6.73E-02	30612.68	38.81	97.01	
400	33510322	3.35E+01	1.01E-01	45695.89	44.36	98.34	
450	47712938	4.77E+01	1.43E-01	65063.10	49.90	99.07	
500	65449847	6.54E+01	1.96E-01	89249.79	55.45	99.07	
600	113097336	1.13E+02	3.39E-01	154223.64	66.54	100.00	

Particle Size Distribution based on approach presented in: *Calculating Realistic PM10 Emissions from Cooling Towers* Joel Reisman and Gordon Frisbie, Environmental Progress (Vol 21, No 2), July 2002

Appendix A: Emissions Calculations
Modification Summary 36491

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Part 70 Determination Uncontrolled Potential to Emit (tons/yr) - Modification								
Emission Unit	**PM**	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**
New Storage Piles - Wind Erosion	21.44	10.72	1.61	-	-	-	-	-
New Storage Piles - Loading/Unloading	1.06	0.50	0.08	-	-	-	-	-
New Slag Roads	54.82	14.51	1.49	-	-	-	-	-
Total	**77.33**	**25.74**	**3.18**	-	-	-	-	-

Part 70 Determination Controlled Potential to Emit (tons/yr) - Modification								
Emission Unit	**PM**	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**
New Storage Piles - Wind Erosion	0.64	0.32	0.05	-	-	-	-	-
New Storage Piles - Loading/Unloading	0.03	0.02	2.28E-03	-	-	-	-	-
New Slag Roads	3.64	0.96	0.10	-	-	-	-	-
Total	**4.32**	**1.30**	**0.15**	-	-	-	-	-

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Road

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Long North Unpaved Road at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Tri Axle Dump Transport (entering plant) (one-way trip)	1.0	17.2	17.2	14.0	240.8	4079	0.773	13.3	4850.0
Tri Axle Dump Transport (leaving plant) (one-way trip)	1.0	17.2	17.2	54.0	928.8	4079	0.773	13.3	4850.0
		Totals	**34.4**		**1169.6**			**26.6**	**9700.0**

Average Vehicle Weight Per Trip = 34.0 tons/trip
Average Miles Per Trip = 0.77 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	34.0	34.0	34.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	8.99	2.40	0.24	lb/mile
Mitigated Emission Factor, Eext =	5.91	1.58	0.16	lb/mile
Dust Control Efficiency =	90%	90%	90%	

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Tri Axle Dump Transport (entering plant) (one-way trip)	21.81	5.81	0.58	14.34	3.82	0.38	1.434	0.382	0.038
Tri Axle Dump Transport (leaving plant) (one-way trip)	21.81	5.81	0.58	14.34	3.82	0.38	1.434	0.382	0.038
Totals	**43.62**	**11.62**	**1.16**	**28.68**	**7.64**	**0.76**	**2.87**	**0.76**	**0.08**

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Road

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Unpaved Road at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	1.0	1.7	1.7	1.8	3.0	475	0.090	0.2	55.8
Pick Up Truck Transport (leaving plant) (one-way trip)	1.0	1.7	1.7	2.3	3.8	475	0.090	0.2	55.8
Quad Axle Dump Transport (entering plant) (one-way trip	1.0	6.5	6.5	15.5	100.2	475	0.090	0.6	212.3
Quad Axle Dump Transport (leaving plant) (one-way trip)	1.0	6.5	6.5	36.6	236.6	475	0.090	0.6	212.3
Semi Truck Transport (entering plant) (one-way trip)	1.0	11.0	11.0	17.5	191.8	475	0.090	1.0	359.8
Semi Truck Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	40.0	438.4	475	0.090	1.0	359.8
Single Axle Dump Transport (entering plant) (one-way tri	1.0	3.4	3.4	6.5	22.1	475	0.090	0.3	111.6
Single Axle Dump Transport (leaving plant) (one-way trip	1.0	3.4	3.4	12.5	42.5	475	0.090	0.3	111.6
Tandem Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	12.9	43.8	475	0.090	0.3	111.6
Tandem Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	28.0	95.1	475	0.090	0.3	111.6
Tri Axle Transport (entering plant) (one-way trip)	1.0	11.0	11.0	14.0	153.4	475	0.090	1.0	359.8
Tri Axle Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	34.0	372.6	475	0.090	1.0	359.8
Truck with Trailer Transport (entering plant) (one-way trip	1.0	3.4	3.4	5.5	18.7	475	0.090	0.3	111.6
Truck with Trailer Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	10.5	35.7	475	0.090	0.3	111.6
		Totals	**80.5**		**1757.7**			**7.2**	**2644.9**

Average Vehicle Weight Per Trip = 21.8 tons/trip
Average Miles Per Trip = 0.09 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	21.8	21.8	21.8	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	7.37	1.96	0.20	lb/mile
	4.84	1.29	0.13	lb/mile
Dust Control Efficiency =	90%	90%	90%	

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	0.21	0.05	0.01	0.14	0.04	0.00	0.014	0.004	0.000
Pick Up Truck Transport (leaving plant) (one-way trip)	0.21	0.05	0.01	0.14	0.04	0.00	0.014	0.004	0.000
Quad Axle Dump Transport (entering plant) (one-way trip	0.78	0.21	0.02	0.51	0.14	0.01	0.051	0.014	0.001
Quad Axle Dump Transport (leaving plant) (one-way trip)	0.78	0.21	0.02	0.51	0.14	0.01	0.051	0.014	0.001
Semi Truck Transport (entering plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Semi Truck Transport (leaving plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Single Axle Dump Transport (entering plant) (one-way tri	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Single Axle Dump Transport (leaving plant) (one-way trip	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Tandem Dump Transport (entering plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Tandem Dump Transport (leaving plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Tri Axle Transport (entering plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Tri Axle Transport (leaving plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Truck with Trailer Transport (entering plant) (one-way trip	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Truck with Trailer Transport (leaving plant) (one-way trip	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Totals	**9.74**	**2.60**	**0.26**	**6.41**	**1.71**	**0.17**	**0.64**	**0.17**	**0.02**

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Road

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Paved Road at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	1.0	1.7	1.7	1.8	3.0	260	0.049	0.1	30.5
Pick Up Truck Transport (leaving plant) (one-way trip)	1.0	1.7	1.7	2.3	3.8	260	0.049	0.1	30.5
Quad Axle Dump Transport (entering plant) (one-way trip)	1.0	6.5	6.5	15.5	100.2	260	0.049	0.3	116.2
Quad Axle Dump Transport (leaving plant) (one-way trip)	1.0	6.5	6.5	36.6	236.8	260	0.049	0.3	116.2
Semi Truck Transport (entering plant) (one-way trip)	1.0	11.0	11.0	17.5	191.8	260	0.049	0.5	197.0
Semi Truck Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	40.0	438.4	260	0.049	0.5	197.0
Single Axle Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	6.5	22.1	260	0.049	0.2	61.1
Single Axle Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	12.5	42.5	260	0.049	0.2	61.1
Tandem Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	12.9	43.8	260	0.049	0.2	61.1
Tandem Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	28.0	95.1	260	0.049	0.2	61.1
Tri Axle Dump Transport (entering plant) (one-way trip)	1.0	11.0	11.0	14.0	153.4	260	0.049	0.5	197.0
Tri Axle Dump Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	34.0	372.6	260	0.049	0.5	197.0
Truck with Trailer Transport (entering plant) (one-way trip)	1.0	3.4	3.4	5.5	18.7	260	0.049	0.2	61.1
Truck with Trailer Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	10.5	35.7	260	0.049	0.2	61.1
		Totals	**80.5**	**237.5**	**1757.8**			**4.0**	**1447.7**

Average Vehicle Weight Per Trip = 21.8 tons/trip
Average Miles Per Trip = 0.05 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	21.8	21.8	21.8	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.019	0.404	0.0991	lb/mile
Mitigated Emission Factor, Eext =	1.846	0.369	0.0906	lb/mile
Dust Control Efficiency =	90%	90%	90%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00
Pick Up Truck Transport (leaving plant) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00
Quad Axle Dump Transport (entering plant) (one-way trip)	0.12	0.02	0.01	0.11	0.02	0.01	0.01	0.00	0.00
Quad Axle Dump Transport (leaving plant) (one-way trip)	0.12	0.02	0.01	0.11	0.02	0.01	0.01	0.00	0.00
Semi Truck Transport (entering plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Semi Truck Transport (leaving plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Single Axle Dump Transport (entering plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Single Axle Dump Transport (leaving plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Tandem Dump Transport (entering plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Tandem Dump Transport (leaving plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Tri Axle Dump Transport (entering plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Tri Axle Dump Transport (leaving plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Truck with Trailer Transport (entering plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Truck with Trailer Transport (leaving plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Totals	**1.46**	**0.29**	**0.07**	**1.34**	**0.27**	**0.07**	**0.13**	**0.03**	**0.01**

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: D.7 -15 Slag Storage Piles PTE

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

		NEW BLEND PLANT FUGITIVE EMISSIONS FROM SLAG HANDLING - Load-in and Load-out Slag to 15 Slag Storage Open Piles, SS-1												
		EMISSION FACTORS							POTENTIAL TO EMIT					
		UNCONTROLLED			CONTROLLED				UNCONTROLLED			CONTROLLED		
Description	m	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 -EF (lbs/ton)	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 -EF (lbs/ton)	PROD.* (ton/year)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)
15 slag storage piles	1.50	0.003542	0.001675	0.000254	0.000106	0.000050	0.000008	600,000	1.06	0.50	0.08	0.0319	0.0151	0.0023

PROD* - is based upon 300,000 tons/yr of slag loaded into 15 slag storage piles + 300,000 tons/yr loaded out from the storage piles.

1) Reference AP-42, 13.2.4.3, Eq 1, 1/95.

EF=k*(0.0032)*((u/5)^1.3)/((m/2)^1.4)
(batch and continuous loading)

Varb.	Value	Units	Comments
k	0.74		Particle Size multiplier < 30 um (AP-42, Table 13.2.4.3, 11/96)
k'	0.35		Particle Size multiplier < 10 um (AP-42, Table 13.2.4.3, 11/96)
k^2	0.053		Particle Size multiplier < 2.5 um (AP-42, Table 13.2.4.3, 11/96)
u	5	MPH	mean wind speed, meters per second (m/s) (miles per hour [mph])
m	1.50	%	Unprocessed Material Moisture Content of Slag Stockpiles (Submitted by Nucor)

2) Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

PTE tons/year = {EF (lbs/ton) X Prod. (tons/yr)} / (2000 lbs/ 1 ton)

Appendix A: D.7 -15 Slag Storage Piles PTE

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

WIND EROSION FROM 15 SLAG STORAGE OPEN PILES

Nucor will have 65 slag piles total. This sheet is for the 15 new piles. Each pile will be square-shaped with a side of approximately 66 feet (20.12 m) and a height of 8 feet (2.44 m).
Wind erosion was calculated according to the procedure in AP-42, Section 13.2.5, Industrial Wind Erosion.

Step 1:
The threshold friction velocity is taken from AP-42, Table 13.2.5-2, page 13.2.5-5.
The threshold velocity for overburden (crushed stone) is 1.02 m/s.

Step 2:
The slag piles are assumed to closely resemble Pile "A" in AP-42, Figure 13.2.5-2, page 13.2.5-7. Pile "A" is divided into 3 areas in Figure 13.2.5-3, page 13.2.5-10 as follows:

$u^+ = \frac{\ln(10/0.005)}{\ln(z/0.005)}$

Area A: $= \frac{(u_s)}{u_r} = 0.9$, 12% of pile surface area

Area B: $= \frac{(u_s)}{u_r} = 0.6$, 48% of pile surface area

Area C: $= \frac{(u_s)}{u_r}$ 0.2, 40% of pile surface area

$u_s^+ = \frac{(u_s)}{u_r} u_{10}^+$

where: u_s = surface wind speed and u_r = approach wind speed

Area A is assumed to be the only disturbed area of the pile. This area will be disturbed every other day; therefore N = 183 where N = number of disturbances per year.

Step 3:
$u^* = \frac{0.4u^+}{\ln 0.5} = 0.10u^+$

The maximum 2-minute wind speed at the Indianapolis, IN National Weather Service station in 2009 was 60 mph. The anemometer height is 20 ft. This must be corrected to 10 m (32.8 ft). Equation 5 from AP-42, page 13.2.5-6:

Where: U^+_{10} = fastest mile value correct for 10-m anemometer height

u^+ = fastest mile value at actual anemometer height (60 mph)

$P = 58(u^* - u_t^*)^2 + 25(u^* - u_t^*)$

z = anemometer height (20 ft = 6.096 m)

Therefore, $U^+_{10} = \frac{60 \ln(10/0.005)}{\ln(6.096/0.005)} = 64.18$ mph

Appendix A: D.7 -15 Slag Storage Piles PTE

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

Step 4:
The surface wind speed distribution is calculated using Equation 6 from AP-42, page 13.2.5-6:

Where: U^+_s = surface wind speed distribution in m/s
$\frac{(u_s)}{u_r}$ = ratio of surface wind speed to approach wind speed (see Step 2)
U^+_{10} = fastest mile value corrected for 10-m anemometer height (see Step 3)

Therefore, = (0.9)(64.18)(0.44704) = 25.82 m/s.

The surface friction velocity is then calculated using Equation 7 from AP-42, page 13.2.5-8:

Where: u* = surface friction velocity in m/s
U^+_s = surface wind speed distribution in m/s

Therefore, U^+_s = 0.10(25.82) = 2.582 m/s. Since Area A is the only disturbed area on the pile, this is the only surface friction velocity necessary.

Step 5:
The size of Area A is calculated as follows:

A = ∏rl × 12%

Therefore, the surface area of Area A is A = ∏(10.06)(10.35)(12%) = 39.23 m2.

Step 6:
The erosion potential is calculated using Equation 3, AP-42, page 13.2.5-3:

P = 0 for u* ≤ u^*_t
u* = surface friction velocity in m/s
= threshold friction velocity in m/s

Therefore, for Area A, the erosion potential is P = 58(2.582 - 1.02)2 + 25(2.582 - 1.02)
= 180.59 g/m2.

Appendix A: D.7 -15 Slag Storage Piles PTE

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

Step 7:
Particulate matter (PM) emissions are calculated by multiplying the erosion potential P by the surface area of Area A.

Uncontrolled PM = (39.23 m2)(180.59 g/m2) = 7,084.5 g/day
Controlled PM = (39.23 m2)(180.59 g/m2)(1 - 90%) = 708.5 g/day

Multiply PM emissions by N to determine annual emissions:

Uncontrolled **PM** = 7,084.5 g/day * N = (7,084.5)183 = 1,296,463.5 g/year
*lb/453.5 grams * ton/2000 lbs * 15 piles = 21.44 tons/yr
Controlled **PM** = 71. 5 tons/yr *(1-97%) = **0.64** tons/yr

From AP-42, page 13.2.5-3, calculate PM10 emissions using particle size multiplier k = 0.5:

Uncontrolled **PM10** = k(PM) = 0.5 * (21.44 tons/year) = 10.72 tons/yr
Controlled **PM10**= 0.5 * (0.64 tons/yr) = **0.32** tons/yr

From AP-42, page 13.2.5-3, calculate PM2.5 emissions using particle size multiplier k = 0.075:

Uncontrolled **PM2.5** = k(PM) = 0.075 * (21.44 tons/year) = 1.61 tons/yr
Controlled **PM2.5** = 0.075 * (0.64 tons/year) = **0.05** ton/yr

Appendix A - D.7 - Slag Project Summary

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

	CONTROLLED/LIMITED PTE (TONS/YEAR)							
Process/Facility	PM	PM10	PM2.5	CO	SO2	VOC	NOx	HAPs
~~*New B-Scrap Beneficiation Process (Melt Solution LLC)~~								
~~Material Handling (Front End Loader - BSBP-1)~~	~~0.66~~	~~0.32~~	~~0.12~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~
~~Conveyor, BSBP-2 (4 drop points)~~	~~0.9~~	~~0.33~~	~~0.33~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~
~~Screen, BSBP-4~~	~~1.88~~	~~0.65~~	~~0.65~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~
~~Crusher, BSBP-3~~	~~1.62~~	~~0.72~~	~~0.72~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~
~~Generator, BSBP-5~~	~~0.70~~	~~0.70~~	~~0.70~~	~~2.12~~	~~0.65~~	~~0.80~~	~~9.88~~	~~Formaldehyde~~
New Blend Plant and Magnetic Separator								
Front Loader, BP-1	0.20	0.10	0.04	0.00	0.00	0.00	0.00	0.00
Blend Plant - 6 Conveyor Drop Points	0.41	0.15	0.15	0.00	0.00	0.00	0.00	0.00
Fugitive Emissions -Load-In and Load-Out Slag to 50 Slag Storage Open Piles	0.03	0.01	1.90E-03	0.00	0.00	0.00	0.00	0.00
Erosion from 50 Slag Storage Open Piles	2.14	1.07	0.16	0.00	0.00	0.00	0.00	0.00
Fugitive Emissions - New Blend Plant Vehicular Traffic	8.00	2.21	0.21	0.00	0.00	0.00	0.00	0.00
~~Temporary~~ **Permanent** Screening Plant								
~~Temporary Screening Plant~~	~~0.20~~	~~0.07~~	~~0.07~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~
Permanent Screening Plant	**0.23**	**0.08**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
~~Temporary Screening Plant - 6 Conveyor Drop Points~~	~~0.14~~	~~0.05~~	~~0.05~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~
Permanent Screening Plant - 8 Conveyor Drop Points	**0.11**	**0.04**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
~~Generator, TSP-3~~	~~0.93~~	~~0.93~~	~~0.93~~	~~2.84~~	~~0.87~~	~~1.07~~	~~13.17~~	~~Formaldehyde~~
Permanent Screening Plant - 1 Crusher	**0.02**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Permanent Screening Plant - 2 Front End Loaders	**0.08**	**0.04**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Coil Cutter	2.03	2.03	2.03	4.05	0.00	0.26	4.82	0.09
2	0.75	0.26	0.26	0.00	0.00	0.00	0.00	0
#1-#5 Conveyor Drop Points #5 Drop Point (Crusher back to Screen, TSP-2)	0.60	0.22	0.22	0.00	0.00	0.00	0.00	0.00
Replacement Crusher, TSP-6	0.22	0.10	0.10	0.00	0.00	0.00	0.00	0.00
Group 1, Five Conveyers, Four Shutes, One Hopper with Vibrating Feeder, and Associated Drop Points (total 11 drop points)	**0.21**	**0.10**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
~~TOTAL Controlled PTE~~	~~21.41~~	~~9.93~~	~~6.74~~	~~8.96~~	~~1.52~~	~~2.17~~	~~27.85~~	~~0.11~~
Revised TOTAL Controlled	**15.02**	**6.41**	**3.40**	**4.05**	**0.00**	**0.26**	**4.82**	**0.09**
ACTUAL TO POTENTIAL (ATP) TEST								
and EU-10 Slag #1-#25 drop points	2.64	0.97	0.97	0.00	0.00	0.00	0.00	0.00
~~TOTAL PROJECT EMISSIONS CHANGE~~	~~24.05~~	~~10.90~~	~~7.71~~	~~8.96~~	~~1.52~~	~~2.17~~	~~27.85~~	~~0.087 Hexane 0.11 Total~~
REVISED TOTAL PROJECT EMISSIONS CHANGE	**17.66**	**7.38**	**4.37**	**4.05**	**0.00**	**0.26**	**4.82**	**0.09 Total**
PSD SIGNIFICANT LEVELS	25	15	10	100	40	40	40	--

Note - The changes to the above table reflect every change since the issuance of SSM 107-29766-00038.

Appendix A: Part 70 Permit Level Determintation

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

POTENTIAL TO EMIT FROM THE NEW UNITS IN THE SLAG OPERATIONS								
					UNCONTROLLED PTE (TONS/YEAR)			
Process/Facility	Maximum Throughput Rate (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor	PM2.5 Emission Factor	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Permanent Screening Plant[3] - Screen, PS1	200	2.50E-02	8.70E-03	5.88E-04	21.90	7.62	0.51	Table 11.19-2-2
Permanent Screening Plant[3] - Screen, PS2	200	2.50E-02	8.70E-03	5.88E-04	21.90	7.62	0.51	Table 11.19-2-2
Permanent Screening Plant[3] - Conveyor #7	200	3.00E-03	1.10E-03	3.11E-04	2.63	0.96	0.27	Table 11.19-2-2
Permanent Screening Plant[3] - Front-End Loader	200	8.80E-03	4.30E-03	1.60E-03	7.71	3.77	1.40	Table 12.5-4
TOTAL PTE					**54.14**	**19.97**	**2.70**	

Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emiossion Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Conrtolled PM2.5 Emission Factor (tons/yr)

Appendix A: Emission Calculations

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

1. PTE of UNPERMITTED UNITS (326 IAC 2-7-10.5 Applicability)

	PM	PM10	PM2.5	VOC	CO	SO2	NOx	GHGs (CO2e)	Pb
UNPERMITTED EMISSION UNITS									
Generator Lip Seal (30 HP)	0.02	0.02	0.02	0.02	0.05	0.02	0.23	8.65	-
Generator Guard Shack (67 HP)	0.04	0.04	0.04	0.04	0.11	0.03	0.52	19.33	-
Generator Transfer Car (99 HP)	0.95	0.95	0.95	1.09	2.90	0.89	13.44	500.33	-
Generator VTD (134 HP)	0.07	0.07	0.07	0.08	0.22	0.07	1.04	38.65	-
Total PTE from Unpermitted Emission Units	**1.08**	**1.08**	**1.08**	**1.24**	**3.28**	**1.01**	**15.23**	**566.96**	

2. PTE of New Emission Units	NEW EMISSION UNITS								
Sect. D.29-4 Tundish Nozzle Preheaters	0.03	0.10	0.10	0.08	1.15	0.01	1.37	1,658.98	6.87059E-06

3. PTE INCREASE of PHYSICALLY MODIFIED UNITS (326 IAC 2-7-10.5 Applicability)

	PM	PM10	PM2.5	VOC	CO	SO2	NOx	GHGs (CO2e)	Pb
PTE BEFORE MODIFICATION									
Sect D.29-Tundish Preheaters (TP1-TP5) @ 30 MMBtu/HR	0.24	0.98	0.98	0.71	10.82	0.08	12.88	15,552.90	6.44118E-05
Sect D.7-Slag Operation	527.25	194.13	186.98	-	-	-	-	-	-
TOTAL PTE BEFORE MODIFICATION	**527.49**	**195.11**	**187.96**	**0.71**	**10.82**	**0.08**	**12.88**	**15,552.90**	
PTE AFTER MODIFICATION									
Sect D.29-Tundish Preheaters (TP1-TP5) @ 30 MMBtu/HR	0.49	1.96	1.96	1.42	21.64	0.15	25.76	31,105.81	1.28824E-04
Sect D.7-Slag Operation	508.17	187.57	180.35	-	-	-	-	-	-
TOTAL PTE AFTER MODIFICATION	508.66	189.53	182.31	1.42	21.64	0.15	25.76	31,105.81	0.00
PTE INCREASE FROM MODIFIED UNITS	**-18.83**	**-5.58**	**-5.64**	**0.71**	**10.82**	**0.08**	**12.88**	**15,553**	**1.28824E-04**
PROJECT TOTAL PTE CHANGE	**-17.73**	**-4.40**	**-4.46**	**2.02**	**15.26**	**1.09**	**29.49**	**31,672.77**	**0.00**

4. PTE - PSD (326 IAC 2-2-) APPLICABILITY

	PM	**PM10**	**PM2.5**	**VOC**	**CO**	**SO2**	**NOx**	**GHGs (CO2e)**	**Lead**
ACTUAL TO POTENTIAL (ATP) TEST (ton/yr) - MODIFIED UNITS/INCREASE UTILIZATION									
BASELINE ACTUAL EMISSIONS									
MELTSHOP									
Section D.29 -[1]Meltshop	112.90	112.90	110.00	20.00	1,135.30	195.80	173.40	232,881	0.035
Section D.29 -Tundish Preheaters @ 30 MMBtu/hr total	0.24	0.98	0.98	0.71	10.82	0.08	12.88	15,552.90	0.00
Section D.29 Meltshop Fugitive Emissions	0.40	0.40	0.29	-	-	-	-	-	0.00
Section D.15 - Pickle Line No.2	0.14	0.14	0.14	-	-	-	-	-	0.00
Section D.25 -Tunnel Furnace No. 1 and No.2	2.20	2.20	2.20	1.70	24.50	0.18	29.10	34,734.82	--
Section D.25 -Tunnel Furnace Shuttles 1 and 2	0.30	0.30	0.30	0.25	3.75	0.03	4.50	13,479	--
Section D.25-Tunnel Snub Furnace	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Section D.25 - Hot Strip Rolling Mill Process	-	-	-	47.48	-	-	-		--
Section D.7 -Slag Operations	4.63	4.63	0.9125	-	-	-	-	-	--
Section D.26 Hot Strip Mill Annealing Furnaces	0.03	0.03	0.03	0.02	0.30	0.0021	0.35	15,040	--
CASTRIP MILL									
VTD	-	-	-	-	-	-	-	63.7	
LMS	0.044	0.044	0.044	-	-	-	-	74.7	0.044
Total Baseline Actual	**120.88**	**121.62**	**114.89**	**70.16**	**1,174.67**	**196.09**	**220.23**	**311,825.54**	0.079
POTENTIAL EMISSIONS									
MELTSHOP									
Section D.29 -[1]Meltshop	398.66	398.66	388.16	197.89	4,397.52	725.59	769.57	454,043.94	1.05
Section D.29 -Tundish Preheaters @ 60 MMBtu/hr total	0.49	1.96	1.96	1.42	21.64	0.15	25.76	31,106	1.2882E-04
Section D.29 Meltshop Fugitive Emissions	0.92	0.92	0.68	-	-	-	-	-	--
Section D.15 - Pickle Line No.2	3.38	3.38	3.38	-	-	-	-		--
Section D.25 -Tunnel Furnace No. 1 and No.2	1.6	6.5	6.5	4.7	72.1	0.5	85.9	51,843.0	2.14706E-04
Section D.25 -Tunnel Furnace Shuttles 1 and 2	0.21	0.85	0.85	0.61	9.38	0.07	11.16	13,479	5.58235E-05
Section D.25-Tunnel Snub Furnace	0.05	0.20	0.20	0.14	2.16	0.02	2.58	3,111	1.28824E-05
Section D.25 - Hot Strip Rolling Mill Process	-	-	-	131.93	-	-	-	-	--
Section D.7 -Slag Operations	7.26	2.69	2.56	-	-	-	-	-	--
Section D.26 Hot Strip Mill Annealing Furnaces	0.24	0.95	0.95	0.69	10.46	0.07	12.46	15,040	6.22862E-05
CASTRIP MILL									
VTD	-	-	-	-	-	-	-	4,340	-
Castrip Caster	0.122	0.122	0.122	-	-	-	-	473	0.12
Total PTE	**412.96**	**416.25**	**405.39**	**337.40**	**4,513.31**	**726.42**	**907.41**	**573,435.36**	**1.17**
Emissions Increase from Modified Emission Units (ATP)	**292.08**	**294.63**	**290.50**	**267.24**	**3,338.64**	**530.33**	**687.18**	**261,609.82**	**1.09**
Total Emission Increase From Project (Hybrid Test)	**820.65**	**490.82**	**479.53**	**269.18**	**3,352.74**	**531.41**	**715.29**	**263,835.76**	**1.09**
PSD Significant Levels	**25**	**15**	**10**	**40**	**100**	**40**	**40**	**75,000**	**0.6**

[1] - includes emissions from the 2 EAFs, 3 LMFs, 2 Casters, AOD and Desulfurization all venting into the Meltshop baghouses No. 1 and No. 2.

[2] - includes emissions from the LMS-2, since Castrip Caster and LMS-2 are both controlled by the LMS-2 baghouse.

Tunnel Furnaces 1 and 2 actual emissions from each pollutant are 67% of the corresponding PTE. Therefore, this % was used in calculating their actul GHG emissions.

The Snub furnace is not operated very often, therefore, the actual emissions were conservatively estimated to be zero for each pollutant.

Appendix A: D.7 - Slag ATP SSM 107-29766-00038

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038

SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

ACTUAL TO POTENTIAL (ATP) TEST

					Uncontrolled Potential			Controlled Potential			
Process/Facility	Maximum Throughput Rate (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor	PM2.5 Emission Factor	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Existing Screening Process, TSP-8	600	0.0250	0.0087	0.0087	65.70	22.86	22.86	1.97	0.69	0.69	Table 11.19.2-2
EU-10 Slag Conveying drop points (#1- #24)	600	0.0030	0.0011	0.0011	189.22	69.38	69.38	5.68	2.08	2.08	Table 11.19.2-2
Cone Crusher *	447	0.0050	0.0024	0.0024	9.79	4.70	4.70	0.29	0.14	0.14	Table 11.19.2-2
TOTAL POTENTIAL EMISSION					***264.71***	***96.94***	***96.94***	***7.94***	***2.91***	***2.91***	

BASELINE ACTUAL EMISSIONS

					Baseline Actual Uncontrolled Emissions			Baseline Actual Controlled Emissions			
	Throughput Rate (tons/hr)	PM Emission Factor	PM10 Emission Factor	PM2.5 Emission Factor	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	**Actual Hours of Operations**
Existing Screening Process, TSP-8	190	0.0250	0.0087	0.0087	3.44	1.20	1.20	0.10	0.04	0.04	1,448
EU-10 Slag Conveying drop points (#1- #24)	190	0.0030	0.0011	0.0011	9.90	3.63	3.63	0.30	0.11	0.11	1,448
Cone Crusher *	190	0.0050	0.0024	0.0024	0.69	0.33	0.33	0.02	0.01	0.01	1,448
TOTAL BASELINE ACTUAL EMISSIONS					***14.03***	***5.16***	***5.16***	***0.42***	***0.15***	***0.15***	
PTE NET INCREASE					***250.67***	***91.78***	***91.78***	***7.52***	***2.75***	***2.75***	

Note: see detailed actual production rates and actual hours of operation on page 15 of 16 of this APP A to the TSD.
Existing 305 ton/hr screening process, TSP-8 capacity will be increased to 447 tons/hr. Downstream 25 conveying drop points will be debottlenecked from 305 tons/hr to 447 tons/hr.
All conveying drop points will assume the worst case throughput of 447 tons/hr, although there are instances when the 447 tons/hr slag material is split among 3 or 4 conveying drop points.

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

ACTUAL TO POTENTIAL (ATP) TEST

					Uncontrolled PTE			Controlled/Limited PTE			
Process/Facility	Limited Throughput (tons/yr)	PM Emission Factor	PM10 Emission Factor	PM2.5 Emission Factor	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Existing Screening Process, TSP-8	2,000,000	0.0250	0.0087	0.0087	25.00	8.70	8.70	0.75	0.26	0.26	Table 11.19.2-2
EU-10 Slag Conveying drop points (#1- #24)	2,000,000	0.0030	0.0011	0.0011	72.00	26.40	26.40	2.16	0.79	0.79	Table 11.19.2-2
Cone Crusher *	2,000,000	0.0050	0.0024	0.0024	5.00	2.40	2.40	0.15	0.07	0.07	Table 11.19.2-2
TOTAL POTENTIAL EMISSION					***102.00***	***37.50***	***37.50***	***3.06***	***1.13***	***1.13***	

BASELINE ACTUAL EMISSIONS

					Baseline Actual Uncontrolled Emissions			Baseline Actual Controlled Emissions			
	Throughput Rate (tons/hr)	PM Emission Factor	PM10 Emission Factor	PM2.5 Emission Factor	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	**Actual Hours of Operations**
Existing Screening Process, TSP-8	190	0.0250	0.0087	0.0087	3.44	1.20	1.20	0.10	0.04	0.04	1,448
EU-10 Slag Conveying drop points (#1- #24)	190	0.0030	0.0011	0.0011	9.90	3.63	3.63	0.30	0.11	0.11	1,448
Cone Crusher *	190	0.0050	0.0024	0.0024	0.69	0.33	0.33	0.02	0.01	0.01	1,448
TOTAL BASELINE ACTUAL EMISSIONS					**14.03**	**5.16**	**5.16**	**0.42**	**0.15**	**0.15**	
PTE NET INCREASE					**87.97**	**32.34**	**32.34**	**2.64**	**0.97**	**0.97**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

Emergency Generator (Lip Seal):

Output Horsepower Rating (hp)	30.0	Generator Lip Seal
Maximum Hours Operated per Year	500	
Potential Throughput (hp-hr/yr)	15,000	

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.02	0.02	0.02	0.02	0.23	0.02	0.05

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	4.90E-05	2.15E-05	1.50E-05	2.05E-06	6.20E-05	4.03E-05	4.86E-06	8.82E-06
				Worst HAP (Formaldehyde)		6.20E-05		
				Combined HAPs		2.03E-04		

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**2.03E-04**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	8.63E+00	3.47E-04	6.94E-05

Summed Potential Emissions in tons/yr	**8.63E+00**
CO2e Total in tons/yr	**8.65E+00**

Note: Generator will be used for pumping water during power outage.

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Methodology:
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

Emergency Generator for the Guard House :

Output Horsepower Rating (hp)	67.0	Generator Lip Seal
Maximum Hours Operated per Year	500	
Potential Throughput (hp-hr/yr)	33,500	

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.04	0.04	0.04	0.03	0.52	0.04	0.11

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	1.09E-04	4.80E-05	3.34E-05	4.58E-06	1.38E-04	8.99E-05	1.08E-05	1.97E-05
				Worst HAP (Formaldehyde)		1.38E-04		
				Combined HAPs		4.54E-04		

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**4.54E-04**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	1.93E+01	7.75E-04	1.55E-04

Summed Potential Emissions in tons/yr	**1.93E+01**
CO2e Total in tons/yr	**1.93E+01**

Note: Generator will be used to power the gurad house during power outage.

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Methodology:
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

Non- Emergency Generator:

Output Horsepower Rating (hp)	99.0	Generator Transfer car
Maximum Hours Operated per Year	8760	
Potential Throughput (hp-hr/yr)	867,240	

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.95	0.95	0.95	0.89	13.44	1.09	2.90

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	2.83E-03	1.24E-03	8.65E-04	1.19E-04	3.58E-03	2.33E-03	2.81E-04	5.10E-04
				Worst HAP (Formaldehyde)		3.58E-03		
				Combined HAPs		1.18E-02		

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**1.18E-02**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	4.99E+02	2.01E-02	4.02E-03

Summed Potential Emissions in tons/yr	**4.99E+02**
CO2e Total in tons/yr	**5.00E+02**

Note: This generator will be used to power a mobile unit that goes back and forth the facility.

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Methodology:
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

Emergency Generator for the VTD During Power Outage:

Output Horsepower Rating (hp)	134.0	Generator (VTD)
Maximum Hours Operated per Year	500	
Potential Throughput (hp-hr/yr)	67,000	

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.07	0.07	0.07	0.07	1.04	0.08	0.22

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	2.19E-04	9.59E-05	6.68E-05	9.17E-06	2.77E-04	1.80E-04	2.17E-05	3.94E-05
				Worst HAP (Formaldehyde)		2.77E-04		
				Combined HAPs		9.08E-04		

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**9.08E-04**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	3.85E+01	1.55E-03	3.10E-04

Summed Potential Emissions in tons/yr	**3.85E+01**
CO2e Total in tons/yr	**3.87E+01**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Methodology:
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

PTE to Modified Existing Tundish Preheaters by Adding New Burners (Section D.29):

Heat Input Capacity MMBtu/hr		HHV mmBtu/mmscf	Potential Throughput MMCF/yr
30.0	Tundish Pre-	1020	257.6
60.0	Heaters (TP1-TP5)	1020	515.3

	Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	direct PM2.5* 7.6	SO2 0.6	NOx 100 **see below	VOC 5.5	CO 84
PTE at 30 MMBtu/hr (5 heaters @ 6 MMBtu/hr each)	0.2	1.0	1.0	0.1	12.9	0.7	10.8
PTE at 60 MMBtu/hr (5 heaters @ 12 MMBtu/hr each)	0.5	2.0	2.0	0.2	25.8	1.4	21.6
PTE Increase	**0.2**	**1.0**	**1.0**	**0.1**	**12.9**	**0.7**	**10.8**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

	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
PTE at 30 MMBtu/hr 5 heaters @ 6 MMBtu/hr each	2.705E-04	1.546E-04	9.662E-03	2.319E-01	4.380E-04
PTE at 60 MMBtu/hr 5 heaters @ 12 MMBtu/hr each	5.411E-04	3.092E-04	1.932E-02	4.638E-01	8.760E-04
PTE Increase	**2.705E-04**	**1.546E-04**	**9.662E-03**	**2.319E-01**	**4.380E-04**

	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
PTE at 30 MMBtu/hr 5 heaters @ 6 MMBtu/hr each	6.441E-05	1.417E-04	1.804E-04	4.895E-05	2.705E-04
PTE at 60 MMBtu/hr 5 heaters @ 12 MMBtu/hr each	1.288E-04	2.834E-04	3.607E-04	9.791E-05	5.411E-04
PTE Increase	**6.441E-05**	**1.417E-04**	**1.804E-04**	**4.895E-05**	**2.705E-04**
				Worst Single HAP (Hexane) Increase	**2.319E-01**
				Combined HAPs Increase	**2.427E-01**

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
PTE at 30 MMBtu/hr (5 heaters @ 6 MMBtu/hr each)	15,459	0.3	0.3
PTE at 60 MMBtu/hr (5 heaters @ 12 MMBtu/hr each)	30,918	0.6	0.6
PTE Increase	15,459	0.3	0.3
Summed PTE at 30 MMBtu/hr (5 heaters @ 6 MMBtu/hr	15,459		
Summed PTE at 60 MMBtu/hr (5 heaters @ 12 MMBtu/hr	30,919		
PTE Increase	15,459		
CO2e Total in tons/yr at 30 MMBtu/hr (5 heaters @ 6 MMBtu/hr each)	15,553		
CO2e Total in tons/yr at 60 MMBtu/hr (5 heaters @ 6 MMBtu/hr each)	31,106		
CO2e Total Increase	**15,553**		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Melt Shop Baghouses
Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

POTENTIAL TO EMIT - [1]MELT SHOP BAGHOUSES (Section D.29)

EMISSION FACTORS

POLLUTANT	EMISSION FACTOR (lb/ton)
NO_X	0.35
SO_2	0.33
CO	2.0
VOC	0.09
Pb	0.000478

POLLUTANT	EMISSION FACTOR (gr/dscf)
PM/PM_{10}	0.0052
$PM_{2.5}$	0.00506

*$PM_{2.5}$ emission factor from AP-42, Table 12.5-2

MAXIMUM EMISSIONS

Production Rate: 502 tons/hour
Flow Rate: 2,042,055 dscfm

POLLUTANT	EMISSION RATE (pounds/hour)	EMISSION RATE (tons/year)
NO_X	175.7	769.6
PM/PM_{10}	91.02	398.7
$PM_{2.5}$	88.62	388.2
SO_2	165.7	725.6
CO	1,004	4,397.5
VOC	45.2	197.9
Pb	0.24	1.05

[1] - includes emissions from the EAFs, LMFs and Casters, all venting into the EAF baghouses.

Appendix A: Emissions Calculations
Melt Shop Fugtives
Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

[1]MELT SHOP CASTER FUGITIVE EMISSIONS (Section D.29)

EMISSION FACTOR

POLLUTANT	EMISSION FACTOR (lb/ton)
PM_{10}	0.07
$PM_{2.5}$	0.052

*$PM_{2.5}$ emission factor from AP-42, Table 12.5-2

98% capture, captured emissions to melt shop baghouse, 99.85% control
70% building control

MAXIMUM EMISSIONS

Production Rate: 502 tons/hour

POLLUTANT	EMISSION RATE (pounds/hour)	EMISSION RATE (tons/year)[1]
PM_{10}	0.21	0.92
$PM_{2.5}$	0.16	0.68

[1] fugitive emissions exhaust to roof monitor that did not get controlled by the Meltshop baghouses

Appendix A: Emissions Calculations
Castrip Casters
Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

[1] CASTRIP CASTER FUGITIVE EMISSIONS (Section D.4)

EMISSION FACTOR

POLLUTANT	EMISSION FACTOR (lb/ton)
$PM_{10}/PM_{2.5}$/Pb	0.07

98% Captured and controlled by the LMS-2 baghouse with 99.85 % control efficiency

MAXIMUM EMISSIONS

Production Rate: 270 tons/hour

Fugitive Emissions

POLLUTANT	EMISSION RATE (pounds/hour)	EMISSION RATE (tons/year)[1]
$PM_{10}/PM_{2.5}$/Pb	0.378	1.66

[1] fugitive emissions exhaust to roof monitor that did not get controlled by the LMS-2 baghouse

POLLUTANT	CONTROLLED EMISSION RATE (pounds/hour)	CONTROLLED EMISSION RATE (tons/year)[1]
$PM_{10}/PM_{2.5}$/Pb	0.028	0.12

Pb was assumed at worst case

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

POTENTIAL TO EMIT - (Section D.25) TUNNEL FURNACE 1 and 2

Heat Input Capacity MMBtu/hr		HHV mmBtu/mmscf	Potential Throughput MMCF/yr
50.0	each	1020	858.8

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.8	3.3	3.3	0.3	42.9	2.4	36.1

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

50 MMBtu/hr each

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	9.018E-04	5.153E-04	3.221E-02	7.729E-01	1.460E-03

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.147E-04	4.724E-04	6.012E-04	1.632E-04	9.018E-04

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**

POTENTIAL TO EMIT - TUNNEL FURNACE 1 and 2

50 MMBtu/hr each

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	51,529	1.0	0.9
Summed Potential Emissions in tons/yr	51,531		
CO2e Total in tons/yr	51,843		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

POTENTIAL TO EMIT - (Section D.29) Tundish Nozzle Preheaters from 4 units at 0.8 MMBtu/hr each (3.2 MMBtu/hr total) to 8 units at 6.4 MMBtu/hr total heat input

Heat Input Capacity MMBtu/hr		HHV mmBtu / mmscf	Potential Throughput MMCF/yr
3.2	MMBtu/hr	1020	27.5

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission @ 3.2 MMBtu/h	0.0	0.1	0.1	0.0	1.4	0.1	1.2

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

3.2	MMBtu/hr		27.5

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission @ 3.2 MMBtu/h	2.886E-05	1.649E-05	1.031E-03	2.473E-02	4.672E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission @ 3.2 MMBtu/h	6.871E-06	1.512E-05	1.924E-05	5.222E-06	2.886E-05
				Worst HAP (Hexane)	2.473E-02
				Combined HAPs	2.593E-02

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley

POTENTIAL TO EMIT - (Section D.29) Tundish Nozzle Preheaters from 4 units at 0.8 MMBtu/hr each (3.2 MMBtu/hr total) to 8 units at 6.4 MMBtu/hr total heat input

3.2	MMBtu/hr		27.5

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission @ 3.2 MMBtu/hr (tons/yr)	1,649	0.0	0.0
Summed Potential Emissions @ 3.2 MMBtu/hr (tons/yr)	1,649		
CO2e Total @ 3.2 MMBtu/hr (tons/yr)	1,659		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

POTENTIAL TO EMIT - (Section D.25) SHUTTLE FURNACES 1 AND 2

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
26.0	1020	223.3

13 MMBtu/hr each shuttle furnace

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.2	0.8	0.8	0.1	11.2	0.6	9.4

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

26 MMBtu/hr

13 MMBtu/hr each shuttle furnace

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.345E-04	1.340E-04	8.374E-03	2.010E-01	3.796E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	5.582E-05	1.228E-04	1.563E-04	4.243E-05	2.345E-04

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**

POTENTIAL TO EMIT - (Section D.25) SHUTTLE FURNACES 1 AND 2

26 MMBtu/hr

13 MMBtu/hr each shuttle furnace	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	13,398	0.3	0.2
Summed Potential Emissions in tons/yr	13,398		
CO2e Total in tons/yr	13,479		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

POTENTIAL TO EMIT - (Section D.25) SNUB FURNACE

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
6.0	1020	51.5

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.0	0.2	0.2	0.0	2.6	0.1	2.2

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

6 MMBtu/hr

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	5.411E-05	3.092E-05	1.932E-03	4.638E-02	8.760E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.288E-05	2.834E-05	3.607E-05	9.791E-06	5.411E-05

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**

POTENTIAL TO EMIT - (Section D.25) SNUB FURNACE

6 MMBtu/hr

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	3,092	0.1	0.1
Summed Potential Emissions in tons/yr	3,092		
CO2e Total in tons/yr	3,111		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**
Date: **March 2016**

POTENTIAL TO EMIT - (Section D.26) 2 HOT STRIP ANNEALING FURNACES (HM #1 AND HM 32)

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
29.01	1020	249.1

14.505 MMBtu/hr each anneal furnace

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.2	0.9	0.9	0.1	12.5	0.7	10.5

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

29.01
14.505 MMBtu/hr each anneal furnace

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.616E-04	1.495E-04	9.343E-03	2.242E-01	4.235E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	6.229E-05	1.370E-04	1.744E-04	4.734E-05	2.616E-04

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Nucor Steel**
Address, City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-36834-00038**
SPM No.: **107-37019-00038**
Plt ID.: **107-00038**
Reviewer: **Heath Hartley**

29.01

14.505 MMBtu/hr each anneal furnace	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	14,949	0.3	0.3
Summed Potential Emissions in tons/yr	14,949		
CO2e Total in tons/yr	15,040		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Hot Strip Rolling Mill
Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

POTENTIAL TO EMIT - HOT STRIP ROLLING MILL PROCESS

EMISSION FACTOR

POLLUTANT	EMISSION FACTOR (lb/ton)
VOC	0.06

MAXIMUM EMISSIONS

Production Rate: 4,397,520 tons/year

POLLUTANT	EMISSION RATE (tons/year)
VOC	131.9

Appendix A: Emissions Calculations
Pickle line No 2
Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

POTENTIAL TO EMIT - PICKLE LINE NO. 2

EMISSION FACTOR

POLLUTANT	FLOW RATE (dscfm)
$PM/PM_{10}/PM_{2.5}$	9,000

0.01 grain/dscf

MAXIMUM EMISSIONS

POLLUTANT	EMISSION RATE (pounds/hour)	EMISSION RATE (tons/year)
$PM_{10}/PM_{2.5}$	0.77	3.4

POLLUTANT	STACK TEST DATA (pounds/hour)	FUGITIVES (pounds/hour)	EMISSION RATE (tons/year)
HCl	0.832	0.063	3.92

ıdix A: Emissions Calcul
GHG Calculations

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MELTSHOP GREENHOUSE GAS CALCULATIONS
MELT SHOP BAGHOUSES

Production Rate: 502 tons/hour

POLLUTANT	EMISSION RATE (lb/ton)*
CO_2	207

*from CEMS

YEAR	STEEL PRODUCTION (tons/year)
2010	2,256,062
2011	2,254,942
Average	2,255,502

Baseline Actual (ton/yr)	
VTD	63.7
LMS	74.7

Based on mass balance

YEAR	CO2e EMISSION RATE (tons/year)
Actual	232,880.6
Maximum PTE	454,043.9
PTE - actual:	**221,163.4**

Sourcewide GHG PTE

	CO2 t/yr	N2O t/yr	CH4 t/yr	Throughput			
Plant Wide Natural gas (8760 hr/yr)	466,896	9	9	7,937,239	MMBtu/yr	7,782 MMCF/yr	5% safety factor
includes Steel Tech**				9,443,872	MMBtu/yr	9,259 MMCF/yr	
35% NG increase in future to EAF	5,042	0.09	0.10	85,718	MMBtu/yr	84 MMCF/yr	35% 0f 244909200 ft3
House Propane (8760 hr/yr)	479	0.03	0.01	7,008	MMBtu/yr	77 kgal/yr	
Whitesville Propane (8760 hr/yr)	413	0.03	0.01	66,000	Gallon/yea	66 kgal/yr	ratio up to 502 t/yr production rate
Generators #2 fuel 100 hrs/yr each)	30	0.00	0.00	2750	Gallon/yea	2.75	based on 100 hr/yr /generator
**EAF and AOD (502 t/hr)	454,044			206.5	lb/ton	502 tons/hr	ratio up to 502 t/hr
							5% safety factor
***VTD (270 t/hr)	4,340			3.67	lb/ton	270 tons/hr	ratio up to 270 t/hr
***LMS (270t/hr)	473			0.4	lb/ton	270 tons/hr	ratio up to 270 t/hr
Totals (tons/year)	931,717	9	9				
CO2e Total (tons/yr)	934,721						

Notes: * includes N.G. at the EAFs, the CEMS already accounted for the fuel combustion emissions. Therefore, the N.G. used at the EAFs has been deducted from the plantwide N. G. usage.
** Emission factor was based upon CEMS data and production data.
*** Emission Factor were based upon mass balance, carbon added in the steel melt at the VTD and carbon out at the LMS.

	GHG Emission Factor		
Fuel Type	CO2	CH4	N20
Global Warming Potentials	1	21	310
Natural Gas (lb/MM	120000	2.3	2.2
Fuel Oil #2 (lb/kgal)	21500	0.216	0.26
Propane (lb/kgal)	12,500	0.2	0.9

Appendix A: D.7 - Slag PTE

Company Name: Nucor Steel
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PSD/SSM No.: 107-36834-00038
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POTENTIAL TO EMIT FROM THE SLAG OPERATIONS AFTER THE MODIFICATION

						CONTROLLED PTE (TONS/YEAR)			UNCONTROLLED PTE (TONS/YEAR)			LIMITED PTE (TONS/YEAR)		
Process/Facility	Maximum Throughput Rate (tons/hr)	Limited Throughput	PM Emission Factor (lb/ton)	PM10 Emission	PM2.5 Emission	PM Emissions (tons/yr)	PM10 Emissions	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions	PM2.5 Emissions	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
Crusher, TSP-6 (Grizzly)	305	2,671,800	0.00016	0.000072	0.000072	0.21	0.10	0.10	7.21	3.21	3.21	0.21	0.10	0.10
Group 1, Five Conveyers, Four Shutes, One Hopper with Vibrating Feeder, and Associated Drop Points (total 11 drop points)	305	29,389,800	0.00009	0.000033	0.000033	1.32	0.48	0.48	44.08	16.16	16.16	1.32	0.48	0.48
Group 1, One Conveyer and Associated Drop Point (total 1 drop point)	610	2,671,800	0.00009	0.000033	0.000033	0.24	0.09	0.09	8.02	2.94	2.94	0.12	0.04	0.04
Group 4, Two Conveyers, Two Magnetic Seperataros, and Associated Drop Points (total 5 drop points)	305	13,359,000	0.00009	0.000033	0.000033	0.60	0.22	0.22	20.04	7.35	7.35	0.60	0.22	0.22
Screen, TSP-8	600	2,000,000	0.00075	0.00026	0.00026	1.97	0.68	0.68	65.70	22.86	22.86	0.75	0.26	0.26
Screen, TSP-2	341	2,000,000	0.00075	0.00026	0.00026	1.12	0.39	0.39	37.34	12.99	12.99	0.75	0.26	0.26
Group 5, Twenty-five EU-10 Drop Points	600	50,000,000	0.00009	0.000033	0.000033	5.91	2.17	2.17	197.10	72.27	72.27	2.25	0.83	0.83
Blend Plant - Material handling Front-End Loader, BP-1	305	1,500,000	0.00026	0.000130	0.000048	0.35	0.17	0.06	11.76	5.74	2.14	0.20	0.10	0.04
Blend Plant - Group 2, Two Conveyers, Four Hoppers, and Associated Drop Points (total 6 drop points)	305	9,000,000	0.00009	0.000033	0.000033	0.72	0.26	0.26	24.05	8.82	8.82	0.41	0.15	0.15
Permanent Screening Plant - Screen, PS1	200	300,000	0.00075	0.000260	0.000260	0.66	0.23	0.23	21.90	7.62	7.62	0.11	0.04	0.04
Permanent Screening Plant - Screen, PS2	200	300,000	0.00075	0.000260	0.000260	0.66	0.23	0.23	21.90	7.62	7.62	0.11	0.04	0.04
Permanent Screening Plant - Crusher	300	300,000	0.00016	0.000072	0.000072	0.21	0.09	0.09	7.10	3.15	3.15	0.02	0.01	0.01
Permanent Screening Plant - Group 3, Five Conveyers, One Magnetic Separator, One Hopper, and Associated Drop Points (total 7 drop points)	300	2,100,000	0.00009	0.000033	0.000033	0.83	0.30	0.30	27.59	10.12	10.12	0.09	0.03	0.03
Permanent Screening Plant - Group 3, One Conveyer and Associated Drop Point (total 1 drop point)	200	300,000	0.00009	0.000033	0.000033	0.08	0.03	0.03	2.63	0.96	0.96	0.01	4.95E-03	4.95E-03
Permanent Screening Plant - Front-End Loader	305	300,000	0.00026	0.000130	0.000048	0.35	0.17	0.06	11.76	5.74	2.14	0.04	0.02	0.01
Permanent Screening Plant - Front-End Loader	200	300,000	0.00026	0.000130	0.000048	0.23	0.11	0.04	7.71	3.77	1.40	0.04	0.02	0.01
TOTAL PTE						**15.23**	**5.62**	**5.40**	**508.17**	**187.57**	**180.35**	**7.00**	**2.58**	**2.51**

* See federally enforceable limits in the permit (D.7.3 and D.7.5).

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

POTENTIAL TO EMIT FROM THE SLAG OPERATIONS BEFORE THE MODIFICATION

					UNCONTROLLED PTE (TONS/YEAR)			
Process/Facility	Maximum Throughput Rate (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor	PM2.5 Emission Factor	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Crusher, TSP-6 (Grizzly)	305	0.0054	0.0024	0.0024	7.21	3.21	3.21	Table 11.19-2-2
Group 1, Eleven Conveyers and Associated Drop Points	305	0.0030	0.0011	0.0011	44.08	16.16	16.16	Table 11.19-2-2
Group 1, One Conveyer and Associated Drop Point	610	0.0030	0.0011	0.0011	8.02	2.94	2.94	Table 11.19-2-2
Group 4, Five Conveying Drop Points	305	0.0030	0.0011	0.0011	20.04	7.35	7.35	Table 11.19-2-2
Screen, TSP-8	600	0.0250	0.0087	0.0087	65.70	22.86	22.86	Table 11.19-2-2
Screen, TSP-2	341	0.0250	0.0087	0.0087	37.34	12.99	12.99	Table 11.19-2-2
Group 5, Twenty-five EU-10 Drop Points	600	0.0030	0.0011	0.0011	197.10	72.27	72.27	Table 11.19-2-2
Blend Plant - Material handling Front-End Loader, BP-1	305	0.0088	0.0043	0.0016	11.76	5.74	2.14	Table 12.5-4
Blend Plant - Group 2, Six Conveying Drop Points	305	0.0030	0.0011	0.0011	24.05	8.82	8.82	Table 11.19-2-2
Permanent Screening Plant[2] - Screen, PS1	300	0.0250	0.0087	0.0087	32.85	11.43	11.43	Table 11.19-2-2
Permanent Screening Plant[3] - Screen, PS1	300	0.0250	0.0087	0.0087	32.85	11.43	11.43	Table 11.19-2-2
Permanent Screening Plant[3] - Crusher	300	0.0054	0.0024	0.0024	7.10	3.15	3.15	Table 11.19-2-2
Permanent Screening Plant[2] - Group 3, Seven Conveyers and Associated Drop Points	300	0.0030	0.0011	0.0011	27.59	10.12	10.12	Table 11.19-2-2
Permanent Screening Plant[2] - Front-End Loader	300	0.0088	0.0043	0.0016	11.56	5.65	2.10	Table 12.5-4
TOTAL PTE					**527.25**	**194.13**	**186.98**	

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ACTUAL EMISSIONS (TPY) FOR SLAG OPERATIONS (SECT. D.7)

YEAR	PM_{10}	$PM_{2.5}$
2010	4.36	0.86
2011	4.9	0.965
AVG.	4.63	0.913

ACTUAL EMISSIONS (TPY) FOR THE MELT SHOP BAGHOUSE (SECT. D.29)

YEAR	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO	VOC	Pb
2010	194.86	134.72	111.7	108.8	1,083.9	20.2	0.035
2011	196.72	212.01	114.1	111.1	1,186.7	19.8	0.035
AVG.	195.8	173.4	112.9	110.0	1,135.3	20.0	0.035

ACTUAL EMISSIONS (TPY) FOR THE CASTRIP CASTER (SECT. D.4)

YEAR	PM_{10}/$PM_{2.5}$/Pb
2010	0.053
2011	0.035
AVG.	0.044

Note: Pb was assumed at worst case

ACTUAL EMISSIONS (TPY) FOR THE MELTSHOP CASTER (SECT. D.29)

YEAR	PM_{10}	$PM_{2.5}$
2010	0.40	0.29
2011	0.40	0.29
AVG.	0.40	0.29

ACTUAL EMISSIONS (TPY) FOR PICKLE NO. 2 (SECT. D.15)

YEAR	PM_{10}/$PM_{2.5}$
2010	0.12
2011	0.15
AVG.	0.14

ACTUAL EMISSIONS (TPY) FOR TUNNEL FURNACE NO. 1 AND NO. 2 (SECT. D.25)

YEAR	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO	VOC	Pb
2010	0.19	30.4	2.3	2.3	25.7	1.7	--
2011	0.17	27.7	2.1	2.1	23.3	1.6	--
AVG.	0.18	29.1	2.2	2.2	24.5	1.7	--

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ACTUAL EMISSIONS (TPY) FOR SLAG OPERATIONS (SECT. D.7)

ACTUAL EMISSIONS (TPY) FOR TUNNEL FURNACE SHUTTLES (SECT. D.25)

YEAR	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO	VOC	Pb
2010	0.03	4.6	0.3	0.3	3.8	0.3	--
2011	0.03	4.4	0.3	0.3	3.7	0.2	--
AVG.	0.03	4.5	0.3	0.3	3.8	0.3	--

ACTUAL EMISSIONS (TPY) FOR THE COLD MILL ANNEALING FURNACES (SECT. D.19)

YEAR	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO	VOC	Pb
2010	0.004	1.4	0.35	0.35	0.0005	0.0044	--
2011	0.004	1.4	0.34	0.34	0.0005	0.0044	--
AVG.	0.004	1.4	0.35	0.35	0.0005	0.0044	--

ACTUAL EMISSIONS (TPY) FOR THE HOT STRIP MILL ANNEALING FURNACES (SECT. D.26)

YEAR	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO	VOC	Pb
2010	0.0022	0.37	0.03	0.03	0.31	0.02	--
2011	0.002	0.33	0.03	0.03	0.29	0.02	--
AVG.	0.0021	0.35	0.03	0.03	0.30	0.02	--

ACTUAL EMISSIONS (TPY) FOR HOT ROLLING MILL PROCESS (SECT. D.25)

YEAR	VOC
2010	47.12
2011	47.84
AVG.	47.48

Appendix A: D.7 - Coil Cutting PTE

Company Name: **Nucor Steel**
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Reviewer: **Heath Hartley**
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Heat Input Capacity MMBtu/hr		Potential Throughput MMCF/yr
11.0	Coil Cutter	96.4

	Pollutant			
	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.0	4.8	0.3	4.0

*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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Facility/Operation	Baghouse Air Flow Rate (dscf/min)	Outlet Grain Loading (grain/dscf)	Baghouse Control Efficiency (%)	Controlled PM/PM10/PM2.5 PTE (tons/yr)	Uncontrolled PM/PM10/PM2.5 PTE (tons/yr)
Coil Cutting	30,000	0.00	90%	2.03	20.3

Methodology:
PM/PM10/PM2.5 = Air flow rate, dscf/min * outlet grain loading, gr/dscf *lb/7000 gr * 60 min/hr * 8760 hrs/yr * ton/2000 lbs

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.012E-04	5.782E-05	3.614E-03	8.672E-02	1.638E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.409E-05	5.300E-05	6.745E-05	1.831E-05	1.012E-04

Worst Single HAP (Hexane)	8.672E-02
Combined HAPs	9.092E-02

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.

Appendix A: D.7 - Blending Plant Storage Piles PTE

Company Name: Nucor Steel
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WIND EROSION FROM 50 SLAG STORAGE OPEN PILES

Nucor will have 50 slag piles. Each pile will be square-shaped with a side of approximately 66 feet (20.12 m) and a height of 8 feet (2.44 m).
Wind erosion was calculated according to the procedure in AP-42, Section 13.2.5, Industrial Wind Erosion.

Step 1:
The threshold friction velocity is taken from AP-42, Table 13.2.5-2, page 13.2.5-5. The threshold velocity for overburden (crushed stone) is 1.02 m/s.

Step 2:
The slag piles are assumed to closely resemble Pile "A" in AP-42, Figure 13.2.5-2, page 13.2.5-7. Pile "A" is divided into 3 areas in Figure 13.2.5-3, page 13.2.5-10 as follows:

Area A: $= \frac{(u_s)}{u_r} = 0.9$, 12% of pile surface area

Area B: $= \frac{(u_s)}{u_r} = 0.6$, 48% of pile surface area

Area C: $= \frac{(u_s)}{u_r}$ 0.2, 40% of pile surface area

where: u_s = surface wind speed and u_r = approach wind speed

$$u_{10}^{+} = u^{+}\frac{\ln(10/0.005)}{\ln(z/0.005)}$$

Area A is assumed to be the only disturbed area of the pile. This area will be disturbed every other day; therefore N = 183 where N = number of disturbances per year.

Step 3: $u_s^{+} = \frac{(u_s)}{u_r}u_{10}^{+}$

The maximum 2-minute wind speed at the Indianapolis, IN National Weather Service station in 2009 was 60 mph. The anemometer height is 20 ft. This must be corrected to 10 m (32.8 ft). Equation 5 from AP-42, page 13.2.5-6:

$$u = u^{*}\frac{1}{k}\ln\left(\frac{z}{z_0}\right) \qquad u_{25}^{+} = 0.10u_{10}^{+}$$

Where: U^{+}_{10} = fastest mile value correct for 10-m anemometer height
u^{+} = fastest mile value at actual anemometer height (60 mph)
z = anemometer height (20 ft = 6.096 m)

Therefore, $U^{+}_{10} = \frac{60\ln(10/0.005)}{\ln(6.096/0.005)} = 64.18$ mph

Appendix A: D.7 - Blending Plant Storage Piles PTE

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Step 4:
The surface wind speed distribution is calculated using Equation 6 from AP-42, page 13.2.5-6:

$$P = 58(u^* - u_t^*)^2 + 25(u^* - u_t^*)$$

Where: U^+_s = surface wind speed distribution in m/s
(u_s) = ratio of surface wind speed to approach wind speed
u_r (see Step 2)
U^+_{10} = fastest mile value corrected for 10-m anemometer height (see Step 3)

Therefore, = (0.9)(64.18)(0.44704) = 25.82 m/s.

The surface friction velocity is then calculated using Equation 7 from AP-42, page 13.2.5-8:

Where: u* = surface friction velocity in m/s
U^+_s = surface wind speed distribution in m/s

Therefore, U^+_s = 0.10(25.82) = 2.582 m/s. Since Area A is the only disturbed area on the pile, this is the only surface friction velocity necessary.

Step 5:
The size of Area A is calculated as follows:

A = ∏rl × 12%

Therefore, the surface area of Area A is A = ∏(10.06)(10.35)(12%) = 39.23 m2.

Step 6:
The erosion potential is calculated using Equation 3, AP-42, page 13.2.5-3:

P = 0 for $u^* \leq u^*_t$
u* = surface friction velocity in m/s
= threshold friction velocity in m/s

Therefore, for Area A, the erosion potential is P = 58(2.582 - 1.02)2 + 25(2.582 - 1.02)
= 180.59 g/m2.

Appendix A: D.7 - Blending Plant Storage Piles PTE

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Step 7:
Particulate matter (PM) emissions are calculated by multiplying the erosion potential P by the surface area of Area A.

Uncontrolled PM = (39.23 m2)(180.59 g/m2) = 7,084.5 g/day
Controlled PM = (39.23 m2)(180.59 g/m2)(1 - 90%) = 708.5 g/day
Multiply PM emissions by N to determine annual emissions:
Uncontrolled **PM** = 7,084.5 g/day * N = (7,084.5)183 = 1,296,463.5 g/year
*lb/453.5 grams * ton/2000 lbs * 50 piles = 71.47 tons/yr
Controlled **PM** = 71. 5 tons/yr *(1-97%) = 2.14 tons/yr

From AP-42, page 13.2.5-3, calculate PM10 emissions using particle size multiplier k = 0.5:

Uncontrolled **PM10** = k(PM) = 0.5 * (71.5 tons/year) = 35.73 tons/yr
Controlled **PM10**= 0.5 * (2.15 tons/yr) = 1.07 tons/yr

From AP-42, page 13.2.5-3, calculate PM2.5 emissions using particle size multiplier k = 0.075:

Uncontrolled **PM2.5** = k(PM) = 0.075 * (71.5 tons/year) = 5.36 tons/yr
Controlled **PM2.5** = 0.075 * (2.15 tons/year) = 0.16 ton/yr

Appendix A: D.7 - Blending Plant Storage Piles PTE

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		NEW BLEND PLANT FUGITIVE EMISSIONS FROM SLAG HANDLING - Load-in and Load-out Slag to 50 Slag Storage Open Piles, SS-1												
		EMISSION FACTORS							POTENTIAL TO EMIT					
		UNCONTROLLED			CONTROLLED				UNCONTROLLED			CONTROLLED		
Description	**m**	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 -EF (lbs/ton)	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 -EF (lbs/ton)	PROD.* (ton/year)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)
New Blend Plant Slag Open Piles	1.50	0.003542	0.001675	0.000254	0.000106	0.000050	0.000008	500,000	0.89	0.42	0.06	0.03	0.01	0.002

PROD* - is based upon 250,000 tons/yr of slag loaded into 50 slag storage piles + 250,000 tons/yr loaded out from the storage piles.

1) Reference AP-42, 13.2.4.3, Eq 1, 1/95.

EF=k*(0.0032)*((u/5)^1.3)/((m/2)^1.4)
(batch and continuous loading)

Varb.	Value	Units	Comments
k	0.74		Particle Size multiplier < 30 um (AP-42, Table 13.2.4.3, 11/96)
k'	0.35		Particle Size multiplier < 10 um (AP-42, Table 13.2.4.3, 11/96)
k^2	0.053		Particle Size multiplier < 2.5 um (AP-42, Table 13.2.4.3, 11/96)
u	5	MPH	mean wind speed, meters per second (m/s) (miles per hour [mph])
m	1.50	%	Unprocessed Material Moisture Content of Slag Stockpiles (Submitted by Nucor)

2) Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

PTE tons/year = {EF (lbs/ton) X Prod. (tons/yr)} / (2000 lbs/ 1 ton)

Appendix A: D.7 - Unpaved Roads Associated with Slag Operations PTE

Company Name: Nucor Steel
Address, City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-36834-00038
SPM No.: 107-37019-00038
Plt ID.: 107-00038
Reviewer: Heath Hartley
Date: March 2016

FUGITIVE PARTICULATE EMISSIONS FROM THE NEW BLENDING PLANT VEHICULAR TRAFFIC

1. Emission Factors: AP-42

Using AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM,PM10 and PM2.5 emission factors for unpaved road: can be estimated from the following equation:

$$E = k \times (s/12)^a \times (w/3)^b$$

where:

E =	emission factor (lb/vehicle mile traveled)		
s =	surface material silt content (%) =	6.0	(%) (AP-42, Table 13.2.2-1)
w =	mean vehicle weight (tons) =	39.0	tons Front -end loaders
		29.0	tons customer haul trucks
		58.0	tons slag haul trucks
a =	empirical constant =	0.7	PM
		0.9	PM and PM10
b =	empirical constant =	0.45	PM, PM10 and PM2.5
k (lb/VMT) =	empirical constant =	4.9	PM
		1.5	PM10 a
		0.15	PM2.5
VMT	vehicle mile travelled	7,531	front end loaders
		4,889	customer haul trucks
		4,123	slag haul trucks

Front End Loaders:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (39/3)^ 0.45 = **9.60** lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (39/3)^ 0.45 = 2.55 lbs/mile **2.55** lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (39/3)^ 0.45 = **0.25** lb/mile

Customer Haul Trucks:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (29/3)^ 0.45 = **8.30** lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (29/3)^ 0.45 = 2.23 lbs/mile **2.55** lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (29/3)^ 0.45 = **0.22** lb/mile

Slag Haul Trucks:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (58/3)^ 0.45 = **11.43** lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (58/3)^ 0.45 = 2.23 lbs/mile **3.05** lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (58/3)^ 0.45 = **0.30** lb/mile

2. Potential to Emit (PTE) of PM, PM10 and PM2.5 Before Control from Paved Roads:

		UNCONTROLLED PTE			CONTROLLED PTE		
Vehicle Type	**Vehicle Mile Traveled (VMT) (miles/yr)**	**PM tons/yr**	**PM10 tons/yr**	**PM2.5 tons/yr**	**PM tons/yr**	**PM10 tons/yr**	**PM2.5 tons/yr**
Front End Loader	7,531	36.15	9.60	0.94	3.6	1.0	0.09
Customer Haul Trucks	4,889	20.29	6.23	0.55	2.0	0.6	0.05
Slag Haul Trucks	4,123	23.56	6.29	0.62	2.4	0.6	0.06
Total		**80.00**	**22.12**	**2.10**	**8.0**	**2.21**	**0.21**

Fugitive Dust Control Plan requires fugitive dust contr 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

Methodology:
PTE, tons/yr = Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs

Indiana Department of Environmental Management
Office of Air Quality

Appendix B – BACT Analysis
Technical Support Document (TSD)
for a Part 70 Prevention of Deterioration (PSD) / Significant Source Modification

Source Description and Location

Source Name:	Nucor Steel
Source Location:	4537 S. Nucor Road, Crawfordsville, IN 47933
County:	Montgomery
SIC Code:	3312 (Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills)
Operation Permit No.:	T107-30293-00038
Operation Permit Issuance Date:	June 1, 2012
PSD/SSM No.:	107-36834-00038
Significant Permit Modification No.:	107-37019-00038
Permit Reviewer:	Heath Hartley

Background Information

On February 15, 2016, the Office of Air Quality (OAQ) received an application from Nucor Steel relating to the increase in water capacity to the Hot Mill Contact Cooling Tower.

Requirement for Best Available Control Technology (BACT)

The Nucor plant went through a modification in 2013 in which several changes were made (see PSD/Significant Source Modification permit No.: 107-32615-00038, issued September 17, 2013. The modification was a major PSD modification, and therefore, was subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)). As part of that modification, the Hot Mill Contact Cooling Tower was an affected emissions unit with an increase in actual water recirculation rate.

The source is now proposing to increase the flow rate of water for the Hot Mill Contact Cooling Tower above the rate permitted as part of PSD/SSM No. 107-32615-00038. This increase is aggregated with the 2013 project (PSD/SSM 107-32615-00038), and therefore, this permitting action is subject to the requirements of 326 IAC 2-2 (PSD).

Modified Emission Units

326 IAC 2-2 (Prevention of Significant Deterioration) requires a BACT analysis for the following emission units:

Cooling Towers	No. of Cells	Average Capacity (gal/min)
Hot Mill Contact	~~4~~**5**	~~16,383~~**25,000**
~~Hot Mill Contact (expansion)~~	~~1~~	~~4,000~~

Summary of the Best Available Control Technology (BACT) Process

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

(1) Identify all potentially available control options;
(2) Eliminate technically infeasible control options;
(3) Rank remaining control technologies;
(4) Evaluate the most effective controls and document the results; and
(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts of the control options. Emission reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment.
The Office of Air Quality (OAQ) makes BACT determinations by following the five steps identified above.

This BACT determination is based on the following information:

(1) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;
(2) EPA and State air quality permits;
(3) Communications with control device equipment manufacturers;
(4) Technical books and articles; and
(5) Guidance documents from state and federal agencies.

Particulate (PM, PM_{10} and $PM_{2.5}$) BACT Analysis
Cooling Tower

Step 1: Identify Potential Control Technologies

Particulate emissions from cooling towers are typically controlled through one of the following mechanisms:

(1) Drift eliminators.
(2) Minimizing total dissolved solids (TDS).

Drift Eliminators
Cooling towers are a source of particulate matter emissions from the small amount of water mist that is entrained with the cooling air as "drift". The cooling water contains small amounts of dissolved solids which become particulate emissions once the water droplet evaporates. To reduce the drift (water loss) from cooling towers, drift eliminators are typically incorporated into the tower design to remove as many droplets as practical from the air stream before exiting the tower.

Particulate matter emissions occur from cooling towers when dissolved solids contained in water used in the cooling tower system become airborne via water droplets that are generated during the cooling process. Drift Eliminators are designed to reduce water loss from the cooling tower by reducing the amount of water droplets which become airborne during the cooling process. As the droplets pass through the eliminator, the droplets in the air stream contact the surface of the eliminator and are removed from the air stream and returned back to the cooling tower system.

Total Dissolved Solids
The minimization of the total dissolved solids (TDS) of the water entering the cooling tower prior to the entrainment of the air reduces the amount of particulate emitted to atmosphere.

Step 2: Eliminate Technically Infeasible Options:

For the cooling tower, the above listed control technologies are considered technically feasible.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The control technologies for cooling towers are ranked as follows:

(1) Drift eliminators.
(2) Minimization of total dissolved solids (TDS).

Step 4: Evaluate the Most Effective Controls and Document the Results

The following tables summarize other BACT determinations at similar sources or for similar processes that were identified in the EPA's RACT/BACT/LAER Clearinghouse (RBLC). The entries listed below are from other similar type industries. Cooling towers from utilities and other types of industries have not been included and will not be evaluated.

Facility - County, State	RBLC ID / Permit # (Issuance Date)	Process	Control	BACT
Nucor Steel	*Proposed*	*Hot Mill Contact Cooling Tower*	*Drift Eliminator*	*0.001% drift* *PM: 0.38 lb/hr* *PM10: 0.19 lb/hr* *PM2.5: 0.001 lb/hr*
SDI - Structural	IN-0156 183-27145-00030 (12/21/12)	Cooling Tower - Rolling Mill/Caster (Non-contact)	Drift Eliminator	PM/PM10: 0.003% drift Do not use chromium based water
		Cooling Tower - Caster Sprays (Contact)	Drift Eliminator	PM/PM10: 0.001% drift Do not use chromium based water
		Cooling Tower - Rolling Mill (Contact)	Drift Eliminator	PM/PM10: 0.001% drift Do not use chromium based water
		Cooling Tower - LVD boiler -(contact)	Drift Eliminator	PM/PM10: 0.005% drift Do not use chromium based water
		Cooling Tower - Rolling Mill (Contact)	Drift Eliminator	PM/PM10: 0.001% drift Do not use chromium based water
		Cooling Tower - Rolling Mill (Non-contact)	Drift Eliminator	PM/PM10: 0.001% drift Do not use chromium based water
		Cooling Tower - #1 cast (contact)	Drift Eliminator	PM/PM10: 0.001% drift Do not use chromium based water
Magnetation	IN-0167 (4/16/13)	Cooling Tower	Drift Eliminator	0.001% drift, 6009 mg/L TDS 0.138 lb/hr
Alcoa	IA-0102 (2/1/12)	Cooling Tower	Limit the amount of VOC in water treatment chemicals	
CONSOLIDATED ENVIRONMENTAL MANAGEMENT INC - Nucor	LA-0248 (5/24/10)	Cooling Tower - DRI Unit 1 process water	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM/PM10: 0.4 tpy
		Cooling Tower - DRI Unit 2 process water	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM/PM10: 0.4 tpy
		Cooling Tower - DRI Unit 1 clean water	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM/PM10: 0.29 tpy

		Cooling Tower - DRI Unit 2 clean water	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM/PM10: 0.29 tpy
		NUCOR Steel (Indiana) is using a contact cooling system to control PM from process water stream. The cooling towers listed here for the Louisiana location do not provide PM control, and therefore, do not operate under similar conditions. Therefore, these are not comparable for the purposes of BACT.		
CONSOLIDATED ENVIRONMENTAL MANAGEMENT INC - Nucor Steel	LA-0239 (5/24/10)	Cooling Tower - blast furnace	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM: 1.41 tpy
		Cooling Tower - iron solidification	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM: 0.18 tpy
		Cooling Tower - air separation plant	Drift Eliminator	0.0005% drift 1,000 mg/L TDS PM: 0.11 tpy
		This is a facility with the same SIC code, however, the processes controlled here are similar to the hot mill process controlled by the contact cooling tower at Nucor (Indiana).		
Osceola Steel	GA-0142 (12/29/10)	Cooling Towers	Drift Eliminator	PM/PM10: 0.0005% drift TDS 1,000 Mg/L
		This facility has not been constructed or operated. Therefore, these limits have not been verified. These cooling towers are not required for control of any processes. Rather, these appear to be non-contact towers. Therefore, these cooling towers are not comparable to the hot mill cooling tower at Nucor.		
Nucor Steel - Marion	OH-0341 (12/23/10)	Cooling Tower - melt shop	Drift Eliminator	0.005% drift, 10% VE as 6-min avg. PM: 0.96 tpy PM10/PM2.5: 0.15 tpy
		Cooling Tower - rolling mill	Drift Eliminator	0.005% drift 10% VE as 6-min avg. PM: 2.01 tpy PM10/PM2.5: 0.32 tpy
V & M Star	OH-0328 (4/10/09)	Melt Shop Cooling Tower	Drift Eliminator	0.005% drift 10% VE as 6-min avg. 5.48 ton/yr
New Steel International	OH-0315 (5/6/08)	Cooling Towers	Drift Eliminators	PM/PM10/PM2.5: 14.99 tpy
Minnesota Steel Industries	MN-0070 (9/7/07)	Cooling Towers	Drift Eliminators	0.005% drift 20% VE as 6-min avg.

A review of the RBLC has found that the most stringent control is to use a drift eliminator with a 0.0005% drift. However, these cooling towers are non-contact towers. The hot mill cooling tower at Nucor is unable to achieve 0.0005% drift, because the Hot Mill cooling tower at Nucor is a contact cooling tower. Nucor has not found a manufacturer that will guarantee a 0.0005% drift rate for this type of system.

Nucor has proposed the use of a drift eliminator with 0.001% drift. Steel Dynamics, Inc. (SDI), is a similar type of facility (with the same SIC code), and it contains a cooling tower for a similar process. The BACT for the rolling mill contact cooling tower at SDI is use of a drift eliminator with 0.001% drift. Therefore, the use of drift eliminators with 0.001% drift is considered top BACT for the hot mill contact cooling tower.

The RBLC shows that other comparable cooling tower drift eliminators have ranges from 0.001% to 0.005% drift. Therefore, the proposed control of 0.001% drift is considered the top BACT for this operation.

Step 5: Select BACT

IDEM, OAQ has established BACT for the cooling towers as:

Pursuant to 326 IAC 2-2 (PSD BACT), IDEM has established the following BACT:

(a) PM, PM10, and PM2.5 emissions from the Hot Mill contact cooling tower shall be controlled by the use of drift eliminators with a maximum designed drift rate not to exceed 0.001%.

(b) PM emissions from the Hot Mill contact cooling tower shall not exceed 0.38 lb/hr.

(c) PM10 emissions from the Hot Mill contact cooling tower shall not exceed 0.19 lb/hr.

(d) PM2.5 emissions from the Hot Mill contact cooling tower shall not exceed 0.001 lb/hr.

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

August 4, 2016

David Sulc
Nucor Steel
4537 S Nucor Rd
Crawfordsville, IN 47933

Re: Public Notice
Nucor Steel
Permit Level: Title V - Significant Source Modification & Title V - Significant Permit Modification
Permit Number: 107 - 36834 - 00038 & 107 - 37019 - 00038

Dear David Sulc:

Enclosed is a copy of your draft Title V - Significant Source Modification & Title V - Significant Permit Modification, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Journal Review in Crawfordsville, Indiana publish the abbreviated version of the public notice no later than August 8, 2016. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Crawfordsville District Public Library, 205 South Washington Street in Crawfordsville IN. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Heath Hartley, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 2-8217 or dial (317) 232-8217.

Sincerely,
Len Pogost

Len Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 2/17/2016

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Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

August 4, 2016

Journal Review
Attn: Classifieds
119 North Green Street
Crawfordsville, Indiana 47933

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Nucor Steel, Montgomery County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than August 8, 2016.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Len Pogost at 800-451-6027 and ask for extension 3-2803 or dial 317-233-2803.

Sincerely,

Len Pogost

Len Pogost
Permit Branch
Office of Air Quality

Permit Level: Title V - Significant Source Modification & Title V - Significant Permit Modification
Permit Number: 107 - 36834 - 00038 & 107 - 37019 - 00038

Enclosure
PN Newspaper.dot 6/13/2013

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

August 4, 2016

To: Crawfordsville District Public Library 205 South Washington Street Crawfordsville IN

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

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Nucor Steel
Permit Number: 107 - 36834 - 00038 & 107 - 37019 - 00038

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

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. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 2/16/2016

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

Notice of Public Comment

August 4, 2016
Nucor Steel
107 - 36834 - 00038 & 107 - 37019 - 00038

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN AAA Cover.dot 2/17/2016

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Governor

Carol S. Comer
Commissioner

AFFECTED STATE NOTIFICATION OF PUBLIC COMMENT PERIOD
DRAFT INDIANA AIR PERMIT

August 4, 2016

A 30-day public comment period has been initiated for:

Permit Number: **Nucor Steel**
Applicant Name: **107 - 36834 - 00038 & 107 - 37019 - 00038**
Location: **Crawfordsville, Montgomery County, Indiana**

The public notice, draft permit and technical support documents can be accessed via the **IDEM Air Permits Online** site at:
http://www.in.gov/ai/appfiles/idem-caats/

Questions or comments on this draft permit should be directed to the person identified in the public notice by telephone or in writing to:

Indiana Department of Environmental Management
Office of Air Quality, Permits Branch
100 North Senate Avenue
Indianapolis, IN 46204

Questions or comments regarding this email notification or access to this information from the EPA Internet site can be directed to Chris Hammack at chammack@idem.IN.gov or (317) 233-2414.

Mail Code 61-53

IDEM Staff	LPOGOST 8/4/2016 Nucor Steel 107 - 36834 - 00038 & 107 - 37019 - 00038 draft			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	Handing 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		David Sulc Nucor Steel 4537 S Nucor Rd Crawfordsville IN 47933 (Source CAATS)									
2		Jeff Powers GM Nucor Steel 4537 S Nucor Rd Crawfordsville IN 47933 *(RO CAATS)*									
3		Crawfordsville City Council and Mayors Office 300 E. Pike St Crawfordsville IN 47933 *(Local Official)*									
4		Myrna Kinney 3225 SR 55 N. Crawfordsville IN 47933 *(Affected Party)*									
5		Mr. Stephen Gintry #22 1715 Lebanon Road Crawfordsville IN 47933 *(Affected Party)*									
6		Mr. Ronald Barnett 4913 Wellington Blvd. Crawfordsville IN 47933 *(Affected Party)*									
7		Montgomery County Health Department 110 W. South Blvd Suite 100 Crawfordsville IN 47933-3351 *(Health Department)*									
8		Mr. Chet Parsons 512 E Main Street Ladoga IN 47954 *(Affected Party)*									
9		Ms. Cheryl Cunningham 512 E Main Street Ladoga IN 47954 *(Affected Party)*									
10		Paul Sutton 9634 E. 150 N. Darlington IN 47940 *(Affected Party)*									
11		June Truax 3750 US 136 E Crawfordsville IN 47933 *(Affected Party)*									
12		Judy Goshorn 6836 South Ladoga Road Ladoga IN 47954 *(Affected Party)*									
13		Ms. Magie Read P.O. Box 248 Battle Ground IN 47920 (Affected Party)									
14		Montgomery County Commissioner 110 West South Boulvard Crawfordsville IN 47933 *(Local Official)*									
15		Crawfordsville District Public Library 205 South Washington Street Crawfordsville IN 47933 *(Library)*									

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Mail Code 61-53

IDEM Staff	LPOGOST 8/4/2016 Nucor Steel 36834 (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	Handing 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		Herbert Environmental Resources Management (ERM) 1701 Golf Road, Suite 1-1000 Rolling Meadows IL 60008-4242 (Consultant)									
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Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

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