INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: September 17, 2013

RE: Nucor Steel / 107-32615-00038

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

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot 6/13/13

Mr. David Sulc
Nucor Steel
4357 South Nucor Road
Crawfordsville, Indiana 47933

September 17, 2013

Re: 107-32615-00038
PSD/Significant Source Modification to:
Part 70 Source (TV 107-30293-00038)

Dear Mr. Sulc:

Nucor Steel was issued Part 70 operating permit T107-30293-00038 on June 1, 2012 for a steel mini-mill. An application to modify the Part 70 source was received on December 10, 2012. Pursuant to 326 IAC 2-7-10.5(g), the source modification that will allow the source to process wider strip of steel as described in the TSD is hereby approved for construction at the source:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Revocation of Permits [326 IAC 2-2-8]
Pursuant to 326 IAC 2-2-8(a)(1), this permit to construct shall expire if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is discontinued for a period of eighteen (18) months or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Pursuant to 326 IAC 2-7-10.5(m) the emission units constructed under this approval shall not be placed into operation prior to issuance of the Part 70 Signiifcant Permit Modification to incorporate the required operation conditions.

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

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, and ask for Aida De Guzman or extension (3-4972), or dial (317) 233-4972.

Sincerely,

Matthew Stuckey, Chief
Permits Branch
Office of Air Quality

Attachments
APD

cc: Montgomery County
Montgomery County Health Department
Compliance and Enforcement Branch
Permit Administration Support Section

IDEM

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PREVENTION OF SIGNIFICANT DETERIORATION/ SIGNIFICANT SOURCE MODIFICATION
OFFICE OF AIR QUALITY

Nucor Steel
4537 South Nucor Road
Crawfordsville, Indiana 47933

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

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

PSD/Significant Source Modification No. 107-32615-00038	
Issued by: Matthew Stuckey, Chief Permits Branch Office of Air Quality	Issuance Date: September 17, 2013

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D.22.5 Ammonia Limitations [326 IAC 2-1.1-5]
D.22.6 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Compliance Determination Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]
D.22.7 Nitrogen Oxides (NOx) [326 IAC 2-2-3]
D.22.8 Oxides of Nitrogen NOx (SCR operation) [326 IAC 2-2]

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)]

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D.22.10 Record Keeping Requirements
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D.23 FACILITY OPERATION CONDITIONS - Welding

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.23.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

D.24 FACILITY OPERATION CONDITIONS - Miscellaneous Shears, Side Trimmers, and Scrap Cutting

Emission Limitations and Standards [326 IAC 2-7-5(1)]
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D.25 FACILITY OPERATION CONDITIONS - Hot Strip Mill and Tunnel Furnace System

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.25.1 Hot Strip Mill PSD BACT [326 IAC 2-2]
D.25.2 Tunnel Furnace System PSD BACT [326 IAC 2-2
D.25.3 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

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D.25.4 Record Keeping Requirements

D.26 FACILITY OPERATION CONDITIONS - Annealing Furnaces

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.26.1 Nitrogen Oxides (NOx) [326 IAC 2-7-5]
D.26.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.26.3 Record Keeping Requirements
D.26.4 Reporting Requirements

D.27 FACILITY OPERATION CONDITIONS - Degreasing

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D.28 FACILITY OPERATION CONDITIONS - Material Transfer Station

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.28.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]
D.28.2 Particulate Control Equipment Operation [326 IAC 2-2]

Compliance Determination Requirements
D.28.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]
D.28.4 Particulate Control

D.29 FACILITY OPERATION CONDITIONS - Electric Arc Furnaces, Ladle Metallurgical Furnaces, Argon Oxygen Decarburization (AOD) Vessels, Desulfurization, Continuous Casters, EAF Dust Treatment Facility

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.29.1 Meltshop Baghouses PSD BACT [326 IAC 2-2]
D.29.2 Operational Flexibility [326 IAC 2-2]
D.29.3 Meltshop PSD BACT for Metals [326 IAC 2-2]
D.29.4 Meltshop EAF Dust and Alloy Handling/Transfer System PM and Opacity PSD BACT [326 IAC 2-2]
D.29.5 Ladle Dryers PSD BACT [326 IAC 2-2]
D.29.6 Ladle Preheaters PSD BACT [326 IAC 2-2]
D.29.7 Tundish Dryout Station (TD #1) PSD BACT [326 IAC 2-2]
D.29.8 PSD Limit [326 IAC 2-2]
D.29.9 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Compliance Determination Requirements [326 IAC 2-1.1-11]
D.29.10 Meltshop EAF PSD BACT [326 IAC 2-2]
D.29.11 Meltshop EAF Dust Handling System and Dust Transfer System PSD BACT [326 IAC 2-2]
D.29.12 Particulate Control Equipment Operation [326 IAC 2-2]
D.29.13 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]
D.29.14 CO, SO2, and NOx Continuous Emission Rate Monitoring Requirement [326 IAC 2-2] [326 IAC 3-5]
D.29.15 Visible Emissions

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)]
D.29.17 Bag Leak Detection System (BLDS) [40 CFR 60.13(i)(1)]
D.29.18 Compliance Assurance Monitoring (CAM) [40 CFR Part 64]

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.29.19 Record Keeping Requirements
D.29.20 Reporting Requirements [326 IAC 2-1.1-11]

D.30 FACILITY OPERATION CONDITIONS - ACTIVITIES – MELTSHOP

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.30.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2

D.31 FACILITY OPERATION CONDITIONS - Steel Technologies Operations

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.31.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]
D.31.2 PM and PM10/PM2.5 Emissions Prevention of Significant Deterioration (PSD) Minor Limits [326 IAC 2-2]
D.31.3 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]
D.31.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Compliance Determination Requirements
D.31.5 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
D.31.6 Particulate Control
D.31.7 Visible Emissions Notations [326 IAC 2-7-6(1)][326 IAC 2-7-5(1)]
D.31.8 Baghouse Parametric Monitoring
D.31.9 Broken or Failed Bag Detection

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.31.10 Record Keeping Requirements

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

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]
D.32.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]
D.32.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.32.4 Record Keeping Requirements
D.32.5 Reporting Requirements

SECTION E.1 FACILITY OPERATION CONDITIONS - BOILERS

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1-1] [40 CFR Part 60, Subpart A]
E.1.2 Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR Part 60, Subpart Dc]

SECTION E.2 FACILITY OPERATION CONDITIONS - Pickling, and Acid Regeneration

E.2.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]
E2.2 National Emissions Standards for Hazardous Air Pollutants for Steel Pickling-HCl Process
Facilities and Hydrochloric Acid Regeneration Plants [40 CFR Part 63, Subpart CCC]

SECTION E.3 FACILITY OPERATION CONDITIONS - EAFS, AOD and EAF Dust Transfer
E.3.1 General Provisions Relating to NSPS [326 IAC 12-1-1] [40 CFR Part 60, Subpart A]
E.3.2 New Source Performance Standards for Steel Plants: Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 [40 CFR Part 60, Subpart AAa]

SECTION E.4 FACILITY OPERATION CONDITIONS - Emergency Generators

E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]
E.4.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units > 500 HP capacities constructed before December 19, 2002]
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

SECTION E.5 FACILITY OPERATION CONDITIONS - Boilers and Process Heaters

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]
E.5.2 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters Requirements [40 CFR Part 63, Subpart DDDDD]

Certification
Emergency Occurrence Report
Semi-Annual Natural Gas Fired Boiler Certification
Part 70 Quarterly Reports
Quarterly Deviation and Compliance Monitoring Report

Attachment A Fugitive Dust Control Plan

Attachment B (NSPS, Subpart Dc - Small Industrial-Commercial-Institutional Steam Generating Units)
Attachment C (NSPS, Subpart AAa - Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels)
Attachment D (NESHAP, Subpart CCC - Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants)
Attachment E (NESHAP, Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines)
Attachment F (NESHAP, Subaprt DDDDD - Industrial, Commercial, and Institutional Boilers and Process Heaters

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

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(14)] [326 IAC 2-7-1(22)]

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

Source Address:	4537 South 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 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.

Approved in 2011 for modification to add two (2) conveyors, 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.

(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.

(r) 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.

(s) 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.

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 diesul 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.

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.					

[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.

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 thier heat imput 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)] [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]

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 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.6 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.7 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.8 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.9 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:

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

(ii) the certification states that, based on information and belief formed after the 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.10 Annual Compliance Certification [326 IAC 2-7-6(5)]

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

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

and

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

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, may require to determine the compliance status of the source.

The submittal by the Permittee does require 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.11 Preventive Maintenance Plan [326 IAC 2-7-5(12)] [326 IAC 1-6-3]

(a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit, including the following information for 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 2-7-1(35) “responsible official” as defined by 326 IAC 2-7-1(35).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. 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).

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

B.12 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)
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 by the “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.13 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

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

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

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, 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.14 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.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(40). 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 emissions trades that are subject to 326 IAC 2-7-20(b), or (c. 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(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(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 Requirement [326 IAC 2-7-10.5] [326 IAC 2-2-2]

(a) A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

(b) Any modification at an existing major source is governed by the requirements of 326 IAC 2-2-2.

B.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).

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 plan submitted on December 2004. The plan is included as Attachment A.

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 PM or sulfur dioxide is emitted.

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 by the "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 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 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]

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 or of initial start-up, whichever is later, 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 or the date of initial startup, whichever is later, 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).

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

(b) 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.

(c) 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 have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

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

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

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

(a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on December 13, 1991.

(b) Upon direct notification by IDEM, OAQ, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level.
[326 IAC 1-5-3]

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

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

C.16 Response to Excursions or Exceedances [40 CFR 64][326 IAC 3-8] [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance where a response step is required by the D Section or an exceedance of a limitation in this permit:

(1) 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.

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

(i) initial inspection and evaluation;

(ii) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(iii) any necessary follow-up actions to return operation to normal or usual manner of operation.

(3) 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:

(i) monitoring results;

(ii) review of operation and maintenance procedures and records; and/or

(iii) inspection of the control device, associated capture system, and the process.

(4) Failure to take reasonable response steps shall be considered a deviation from the permit.

(5) The Permittee shall record the reasonable response steps taken.

(b) 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.

(c) 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.

(d) 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 QIP. The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

(e) 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).

(f) 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.

(g) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(a)(2) 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.

(h) 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.

(i) 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)(a)(2) 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 (32) (“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:

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

Records of required monitoring information include the following:

(1) The date, place, as defined in this permit, and time of sampling or measurements.
(2) The dates analyses were performed.
(3) The company or entity that performed the analyses.
(4) The analytical techniques or methods used.
(5) The results of such analyses.
(6) 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 [40 CFR 64][326 IAC 3-8] [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 2-3]

(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.

CAM Only - 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) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. 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 - 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.

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

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

CASTRIP – VACUUM DEGASSER AND FLARE

(a) One (1) vacuum degasser with process gas lances, identified as V #1, constructed in 2004, aproved 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

D.0.2 GHG (CO_2e) 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_2O 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 CO_2 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 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(34).

SECTION D.1 FACILITY OPERATION CONDITIONS

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

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 2-1.1-11]

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

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

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 2-1.1-11]

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

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

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

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

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

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, PM, PM10, PM2.5 and Pb, to demonstrate compliance with Conditions D.4.1(d), (e), (f) and D.4.5(a), 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 (34)

(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

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

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

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

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

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

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.

Approved in 2011 for modification to add two (2) conveyors, 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.

(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.

(r) 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.

(s) 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.

(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 10 drop points[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[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)[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 to Conveyor #2	300,000	0.00075	0.00026	0.00026

Unit Description	Throughput Limit (tons/yr)	PM Emissions Limit (lb/ton)	PM10 Emissions Limit (lb/ton)	PM2.5 Emissions Limit (lb/ton)
Permanent Screening Plant[3] - Screen, PS1 to Conveyor #5	300,000	0.00075	0.00026	0.00026
Permanent Screening Plant[3] -Conveyor #2 to Crusher	300,000	0.00016	0.000072	0.000072
Permanent Screening Plant[3] - Conveying Process (7 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 Loader to Grizzly Feed Hopper	300,000	0.00026	0.00013	0.000048
Replacement Screen, TSP-2	2,000,000	0.00075	0.00026	0.00026
Conveying Process (5 drop points)[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 #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.

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

[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)

[2] Six Drop Points:
#1 - #4 Hoppers drop slag into conveyor
#5 conveyor into stacker conveyor
#6 stacker conveyor to 3 storage piles

[3] Eleven Drop Points:
#1 Front end loader or Stacker Conveyor from Blend Plant to grizzly feed hopper/Conveyor #1
#2 Conveyor #1 to Screen PS1
#3 Screen PS1 to Conveyor #2
#4 Screen PS1 to Conveyor #5
#5 Conveyor #2 to Crusher
#6 Crusher to Conveyor #3
#7 Conveyor #3 to Conveyor #4
#8 Conveyor #4 to Blend Plant Hopper
#9 Conveyor #5 to Pile #2
#10 Magnetic Separator to Pile #1
#11 Blend Plant Conveyor to Stacker Conveyor

[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

[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 - 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 condition shall limit the PM, PM10 and PM2.5 emissions to less than 25 tons/year for PM, less than 15 tons/year for PM10 and less than 10 tons/year for PM2.5, which renders the requirements of 326 IAC 2-2 (PSD) not applicable to source modification permitted under SSM No. 107-29766-00038.

D.7.3 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 10 drop points[1]	305 each drop point	63.18 each drop point

Process/Facility	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Screening Process, TSP-8	600	71.2
EU-10 Slag 25 Drop Points[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
Blend Plant - 6 Conveying Drop Points[2]	305 each drop point	63.18 each drop point
Permanent Screening Plant		
Permanent Screening Plant[3]-Screen	300	63.0
Permanent Screening Plant[3]-8 Conveying Drop Points	300 each drop point	63.0 each drop point
Permanent Screening Plant[3]-Front End Loader	300	63.0
Coil and Scrap Cutting, CC-1	70	47.8
Replacement Screen, TSP-2	341	64.5
Conveying Process (5 drop points)[4]	305 each drop point	63.18 each drop point

Note: **Drop points #5 through #10 in Conveying Process with 10 drop[1] shall use process weight rate of 600 tons/hour that is in EU-10 Slag 25 Drop Points[5]

[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)

[2] Six Drop Points:
#1 - #4 Hoppers drop slag into conveyor
#5 conveyor into stacker conveyor, drop point #6 stacker conveyor to 3 storage piles

[3] Eleven Drop Points:
#1 Front end loader or Stacker Conveyor from Blend Plant to grizzly feed hopper/Conveyor #1
#2 Conveyor #1 to Screen PS1
#3 Screen PS1 to Conveyor #2
#4 Screen PS1 to Conveyor #5
#5 Conveyor #2 to Crusher
#6 Crusher to Conveyor #3
#7 Conveyor #3 to Conveyor #4
#8 Conveyor #4 to Blend Plant Hopper
#9 Conveyor #5 to Pile #2
#10 Magnetic Separator to Pile #1
#11 Blend Plant Conveyor to Stacker Conveyor

[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

[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 - 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.7.4 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

D.7.5 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.7.6 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.7.7 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 and PM_{10} emissions from the 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.7.8 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.7.9 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.7.10 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.7.8 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.7.9, the Permitee 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.7.11 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 (34).

SECTION D.8 FACILITY OPERATION CONDITIONS

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

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

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

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

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

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, identifed 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

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

COOLING TOWERS

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

Cooling Towers	No. of Cells	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.

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.)

[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.

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

D.11.2 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

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

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 substitues 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

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

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

Facility Description [326 IAC 2-7-5(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.

(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

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

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 2-1.1-11]

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

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

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 2-1.1-11]

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 (34).

SECTION D.17 FACILITY OPERATION CONDITIONS

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

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% opaity, 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 2-1.1-11]

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 (34).

SECTION D.18 FACILITY OPERATION CONDITIONS

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

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 2-1.1-11]

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

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

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 2-1.1-11]

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 (34).

SECTION D.20 FACILITY OPERATION CONDITIONS

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

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

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

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 2-1.1-11]

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

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

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 2-7-6(1)] [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 (34).

(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 (34).

SECTION D.23 FACILITY OPERATION CONDITIONS

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

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

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

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

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

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

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

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 (34).

SECTION D.27 FACILITY OPERATION CONDITIONS

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

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

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

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

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

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

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 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.

SECTION D.29 FACILITY OPERATION CONDITIONS

(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 emissions from the LMFs, fugitive emissions from the Meltshop Casters and other Meltshop operations.

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(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 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.

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(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.)

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 2-1.1-11]

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.

EAFs/AODs and LMFs				
PARAMETER	INDICATOR NO. 1	INDICATOR NO. 2	INDICATOR NO. 3	INDICATOR NO. 4
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 Commissioner	Procedures addressed in Method 9	Monthly operational status inspections of the equipment important to the total capture system.	Baghouse inspected visually for bag leaks.
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 (34).

(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

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

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

Facility Description [326 IAC2-7-5(15)]

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

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

Facility Description [326 IAC2-7-5(15)]:

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.

SECTION D.32 FACILITY OPERATION CONDITIONS

(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.

SECTION D.32 FACILITY OPERATION CONDITIONS

(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
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

Facility ID	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
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 FACILITY OPERATION CONDITIONS

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

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.)

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1-1] [40 CFR Part 60, Subpart A]

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 40 CFR Part 60, Subpart A.

E.1.2 Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR Part 60, Subpart Dc]

Pursuant to 40 CFR Part 60, Subpart Dc, this boiler shall comply with the following provisions:

(1) 40 CFR § 60.40c(a)
(2) 40 CFR § 60.41c
(3) 40 CFR § 60.48c(g)(1)

SECTION E.2 FACILITY OPERATION CONDITIONS

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

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.)

E.2.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]

Pursuant to 40 CFR 63.1155, 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 in 40 CFR Part 63, Subpart CCC.

E.2.2 National Emissions Standards for Hazardous Air Pollutants for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants [40 CFR Part 63, Subpart CCC]

Pursuant to 40 CFR Part 63, Subpart CCC, 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) shall comply with the following provisions:

(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 FACILITY OPERATION CONDITIONS

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

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 mobile cranes to load charge buckets in the scrap yard.

SECTION E.3 FACILITY OPERATION CONDITIONS

(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 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

SECTION E.3 FACILITY OPERATION CONDITIONS

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 acilities, 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 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-

SECTION E.3 FACILITY OPERATION CONDITIONS

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)).

(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.)

E.3.1 General Provisions Relating to NSPS [326 IAC 12-1-1] [40 CFR Part 60, Subpart A]

The Permittee shall comply with the requirements of 40 CFR 60, Subpart A– General Provisions, which are incorporated by reference as 326 IAC 12-1-1, 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 in 40 CFR Part 60, Subpart A.

E.3.2 New Source Performance Standards for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 [40 CFR Part 60, Subpart AAa]

Pursuant to 40 CFR Part 60, Subpart AAa, 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:

(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 FACILITY OPERATION CONDITIONS

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

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.)

E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]

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 generators except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

E.4.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units > 500 HP capacities constructed before December 19, 2002]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, 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:

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:

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

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

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.

(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.

SECTION E.5 FACILITY OPERATION CONDITIONS

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.)

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, 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 as specified in Table 10 of 40 CFR 63, Subpart DDDDD in accordance with schedule 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 [40 CFR Part 63, Subpart DDDDD]

The 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:

(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

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☐ 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**) 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
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: ____

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
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: ____

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
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: ________________________________

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
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: ______________________________________

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
Month 1			
Natural Gas Usage			
Propane Usage			
Natural Gas Equivalent Usage			
Month 2			
Natural Gas Usage			
Propane Usage			
Natural Gas Equivalent Usage			
Month 3			
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: ____

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
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: ____

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]
Month 1						
Month 2						
Month 3						

[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: ____

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]
Month 1						
Month 2						
Month 3						

[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: ______________________________

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]
Month 1						
Month 2						
Month 3						

[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 and Permanent Screening Conveying Process (8 drop points, including the front end loader)[3]
Parameter: Throughput
Limits:

Unit Description	Throughput Limit (tons/yr)
Permanent Screening Plant -Screen, PS1	300,000
Permanent Conveying Process (7 drop points)[3]	300,000each drop point
Permanent Screening Plant- Front End Loader	300,000

QUARTER:_________ YEAR:________

[3] Eleven Drop Points:

Month	Column 1 Throughput This Month			Column 2 Throughput 11 Months			Column 1+2 Throughput 12 Months Total		
	Permanent Screening Plant**-** Screen, PS1	**Permanent** Screening Conveying Process (7 Drop Points)[3]	Front End Loader	**Permanent** Screening Plant	**Permanent** Screening Conveying Process (7 Drop Points)[3]	Front End Loader	**Permanent** Screening Plant	**Permanent** Screening Conveying Process (7 Drop Points)[3]	**Front** End Loader
Month 1									
Month 2									
Month 3									

#1 Front end loader to grizzly feed hopper
#2 Conveyor #1 to Conveyor #2
#3 Conveyor #1 2 to Screen, PS1
#4 Screen, PS1 to Conveyor #3
#5 Screen, PS1 to Conveyor #6
#6 Conveyor #3 to Conveyor #4
#7 Magnetic Separator to Pile #1
#8 Conveyor #4 to Crusher
#9 Crusher to Conveyor #5
#10 Conveyor #5 to Hopper
#11 Conveyor #6 to Pile #2

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]
Month 1						
Month 2						
Month 3						

[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
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: ____

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
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: ____________________________________

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: _______

Page 1 of 2

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, 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	Whitesville Mill Service (Slag Processing)
Environmental Manager	Plant Manager
4537 South Nucor Road	4537 South Nucor Road
Crawfordsville, Indiana 47933-9450	Crawfordsville, Indiana 47933-9450
Telephone: (765) 361-2659	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 and approved for use, in writing, by IDEM 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 e 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 Fuqitive Emission Evaluation, EPA 600/2-79-103, U.S. Environmental Protection Agency Cincinnati. OH, May 1979.

Attachment B

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Source: 72 FR 32759, June 13, 2007, unless otherwise noted.

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

(e) Affected facilities (*i.e.* heat recovery steam generators and fuel heaters) that are associated with stationary combustion turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators, fuel heaters, and other affected facilities that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator, fuel heater, or other affected facility is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(f) Any affected facility that meets the applicability requirements of and is subject to subpart AAAA or subpart CCCC of this part is not subject to this subpart.

(g) Any facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not subject to this subpart.

(h) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_Xstandards under this subpart and the SO_2standards under subpart J or subpart Ja of this part, as applicable.

(i) Temporary boilers are not subject to this subpart.

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Cogeneration steam generating unit means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.
Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.
Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (*i.e.* , the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).
Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.
Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see §60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see §60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see §60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see §60.17).
Dry flue gas desulfurization technology means a SO_2control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.
Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.
Emerging technology means any SO_2control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(a)(4).
Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.
Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.
Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.
Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).
Heat transfer medium means any material that is used to transfer heat from one point to another point.
Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.
Natural gas means:
(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17); or
(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).
Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.
Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.
Potential sulfur dioxide emission rate means the theoretical SO_2emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.
Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.
Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).
Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.
Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.
Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO_2emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:
(1) The equipment is attached to a foundation.
(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.
(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.
(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.
Wet flue gas desulfurization technology means an SO_2control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.
Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2.
Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.
[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009]

§ 60.42c Standard for sulfur dioxide (SO_2).

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that combusts only coal shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2in excess of the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts only coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO_2emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of SO_2in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is fired with coal refuse, the affected facility subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO_2emissions limit or the 90 percent SO_2reduction requirement specified in paragraph (a) of this section and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO_2emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of 50 percent (0.50) of the potential SO_2emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of 260 ng/J (0.60 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO_2reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).

(1) Affected facilities that have a heat input capacity of 22 MW (75 MMBtu/h) or less;

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area; or

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

d) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal,

oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2in excess of the following:
(1) The percent of potential SO_2emission rate or numerical SO_2emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that
(i) Combusts coal in combination with any other fuel;
(ii) Has a heat input capacity greater than 22 MW (75 MMBtu/h); and
(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and
(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s = \frac{(K_a H_a + K_b H_b + K_c H_c)}{(H_a + H_b + H_c)}$$

Where:
E_s= SO_2emission limit, expressed in ng/J or lb/MMBtu heat input;
K_a= 520 ng/J (1.2 lb/MMBtu);
K_b= 260 ng/J (0.60 lb/MMBtu);
K_c= 215 ng/J (0.50 lb/MMBtu);
H_a= Heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [MMBtu];
H_b= Heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (MMBtu); and
H_c= Heat input from the combustion of oil, in J (MMBtu).
(f) Reduction in the potential SO_2emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:
(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO_2emission rate; and
(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO_2control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.
(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.
(h) For affected facilities listed under paragraphs (h)(1), (2), (3), or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under §60.48c(f), as applicable.
(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).
(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).
(3) Coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).
(4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).
(i) The SO_2emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.
(j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.
[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009]

§ 60.43c Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or

combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:
(1) 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.
(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.
(b) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:
(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or
(2) 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.
(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph (c).
(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.
(e)(1) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2), (e)(3), and (e)(4) of this section
(2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:
(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and
(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.
(3) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(4) An owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under §60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO_2emissions is not subject to the PM limit in this section.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and §60.8(b), performance tests required under §60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in §60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.
(b) The initial performance test required under §60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO_2emission limits under §60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.
(c) After the initial performance test required under paragraph (b) of this section and §60.8, compliance with the percent reduction requirements and SO_2emission limits under §60.42c is based on the average percent reduction and the average SO_2emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO_2emission rate are calculated to show compliance with the standard.
(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 of appendix A of this part are used to determine the hourly SO_2emission rate (E_{ho}) and the 30-day average SO_2emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS. Method 19 of appendix A of this part shall be used to calculate $E_{ao}$when using daily fuel sampling or Method 6B of appendix A of this part.
(e) If coal, oil, or coal and oil are combusted with other fuels:
(1) An adjusted E_{ho}(E_{ho}o) is used in Equation 19–19 of Method 19 of appendix A of this part to compute the adjusted E_{ao}(E_{ao}o). The E_{ho}o is computed using the following formula:

$$E_{ho}o = \frac{E_{ho} - E_w(1 - X_k)}{X_k}$$

Where:
E_{ho}o = Adjusted E_{ho}, ng/J (lb/MMBtu);
E_{ho}= Hourly SO_2emission rate, ng/J (lb/MMBtu);
E_w= SO_2concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9 of appendix A of this part, ng/J (lb/MMBtu). The value $E_w$for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure $E_w$if the owner or operator elects to assume E_w= 0.
X_k= Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.
(2) The owner or operator of an affected facility that qualifies under the provisions of §60.42c(c) or (d) (where percent reduction is not required) does not have to measure the parameters $E_w$or $X_k$if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19 of appendix A of this part.
(f) Affected facilities subject to the percent reduction requirements under §60.42c(a) or (b) shall determine compliance with the SO_2emission limits under §60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO_2 emission rate is computed using the following formula:

$$\%P_s = 100\left(1 - \frac{\%R_g}{100}\right)\left(1 - \frac{\%R_f}{100}\right)$$

Where:
$\%P_s$ = Potential SO_2 emission rate, in percent;
$\%R_g$ = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and
$\%R_f$ = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.
(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:
(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_g o$) is computed from $E_{ao}o$ from paragraph (e)(1) of this section and an adjusted average SO_2 inlet rate ($E_{ai}o$) using the following formula:

$$\%R_g o = 100\left(1 - \frac{E_{ao}^{o}}{E_{ai}^{o}}\right)$$

Where:
$\%R_g o$ = Adjusted $\%R_g$, in percent;
$E_{ao}o$ = Adjusted E_{ao}, ng/J (lb/MMBtu); and
$E_{ai}o$ = Adjusted average SO_2 inlet rate, ng/J (lb/MMBtu).
(ii) To compute $E_{ai}o$, an adjusted hourly SO_2 inlet rate ($E_{hi}o$) is used. The $E_{hi}o$ is computed using the following formula:

$$E_{hi}o = \frac{E_{hi} - E_w(1 - X_k)}{X_k}$$

Where:
$E_{hi}o$ = Adjusted E_{hi}, ng/J (lb/MMBtu);
E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu);
E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume $E_w = 0$; and
X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.
(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under §60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under §60.46c(d)(2).
(h) For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in §60.48c(f), as applicable.
(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under §60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.
(j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under §60.46c(f) are achieved. All valid emissions data, including valid data

collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$or E_{ho}pursuant to paragraphs (d), (e), or (f) of this section, as applicable.
[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under §60.43c shall conduct an initial performance test as required under §60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) of this section.
(1) Method 1 of appendix A of this part shall be used to select the sampling site and the number of traverse sampling points.
(2) Method 3A or 3B of appendix A–2 of this part shall be used for gas analysis when applying Method 5 or 5B of appendix A–3 of this part or 17 of appendix A–6 of this part.
(3) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:
(i) Method 5 of appendix A of this part may be used only at affected facilities without wet scrubber systems.
(ii) Method 17 of appendix A of this part may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B of appendix A of this part may be used in Method 17 of appendix A of this part only if Method 17 of appendix A of this part is used in conjunction with a wet scrubber system. Method 17 of appendix A of this part shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.
(iii) Method 5B of appendix A of this part may be used in conjunction with a wet scrubber system.
(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.
(5) For Method 5 or 5B of appendix A of this part, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320±25 °F).
(6) For determination of PM emissions, an oxygen (O_2) or carbon dioxide (CO_2) measurement shall be obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.
(7) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rates expressed in ng/J (lb/MMBtu) heat input shall be determined using:
(i) The O_2or CO_2measurements and PM measurements obtained under this section, (ii) The dry basis F factor, and
(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.
(8) Method 9 of appendix A–4 of this part shall be used for determining the opacity of stack emissions.
(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under §60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.
(c) In place of PM testing with Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall install, calibrate, maintain, and operate a CEMS and shall comply with the requirements specified in paragraphs (c)(1) through (c)(14) of this section.

(1) Notify the Administrator 1 month before starting use of the system.
(2) Notify the Administrator 1 month before stopping use of the system.
(3) The monitor shall be installed, evaluated, and operated in accordance with §60.13 of subpart A of this part.
(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under §60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.
(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under §60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (d) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.
(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.
(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraph (c)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.
(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.
(ii) [Reserved]
(8) The 1-hour arithmetic averages required under paragraph (c)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.
(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (c)(7) of this section are not met.
(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.
(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2(or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.
(i) For PM, Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall be used; and
(ii) For O2 (or CO_2), Method 3A or 3B of appendix A–2 of this part, as applicable shall be used.
(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.
(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.
(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in §60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.,* reference method) data and performance test (*i.e.,* compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.
(d) The owner or operator of an affected facility seeking to demonstrate compliance under §60.43c(e)(4) shall follow the applicable procedures under §60.48c(f). For residual oil-fired affected facilities, fuel supplier certifications are only allowed for facilities with heat input capacities between 2.9 and 8.7 MW (10 to 30 MMBtu/h).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011]

§ 60.46c Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2emission limits under §60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2concentrations and either O_2or CO_2concentrations at the outlet of the SO_2control device (or the outlet of the steam generating unit if no SO_2control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under §60.42c shall measure SO_2concentrations and either O_2or CO_2concentrations at both the inlet and outlet of the SO_2control device.

(b) The 1-hour average SO_2emission rates measured by a CEMS shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under §60.42c. Each 1-hour average SO_2emission rate must be based on at least 30 minutes of operation, and shall be calculated using the data points required under §60.13(h)(2). Hourly SO_2emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.

(3) For affected facilities subject to the percent reduction requirements under §60.42c, the span value of the SO_2CEMS at the inlet to the SO_2control device shall be 125 percent of the maximum estimated hourly potential SO_2emission rate of the fuel combusted, and the span value of the SO_2CEMS at the outlet from the SO_2control device shall be 50 percent of the maximum estimated hourly potential SO_2emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of §60.42c, the span value of the SO_2CEMS at the outlet from the SO_2control device (or outlet of the steam generating unit if no SO_2control device is used) shall be 125 percent of the maximum estimated hourly potential SO_2emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO_2control device (or outlet of the steam generating unit if no SO_2control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2control device (or outlet of the steam generating unit if no SO_2control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2emission rate by using Method 6B of appendix A of this part. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B of appendix A of this part shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B of appendix A of this part may be used in lieu of CEMS to measure SO_2at the inlet or outlet of the SO_2control system. An initial stratification test is required to verify the adequacy of the

Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable $SO_2$and CO_2measurement train operated at the candidate location and a second similar train operated according to the procedures in §3.2 and the applicable procedures in section 7 of Performance Specification 2 of appendix B of this part. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2standards based on fuel supplier certification, as described under §60.48c(f), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

§ 60.47c Emission monitoring for particulate matter.

(a) Except as provided in paragraphs (c), (d), (e), and (f) of this section, the owner or operator of an affected facility combusting coal, oil, or wood that is subject to the opacity standards under §60.43c shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility subject to an opacity standard in §60.43c(c) that is not required to use a COMS due to paragraphs (c), (d), (e), or (f) of this section that elects not to use a COMS shall conduct a performance test using Method 9 of appendix A–4 of this part and the procedures in §60.11 to demonstrate compliance with the applicable limit in §60.43c by April 29, 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later, and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. The observation period for Method 9 of appendix A–4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.

(1) Except as provided in paragraph (a)(2) and (a)(3) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A–4 of this part performance tests using the procedures in paragraph (a) of this section according to the applicable schedule in paragraphs (a)(1)(i) through (a)(1)(iv) of this section, as determined by the most recent Method 9 of appendix A–4 of this part performance test results.

(i) If no visible emissions are observed, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(ii) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.
(2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A–7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.
(i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A–7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.* , 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.,* 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.,* 90 seconds) or conduct a new Method 9 of appendix A–4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in §60.45c(a)(8).
(ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.
(3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS “Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.” This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.
(b) All COMS shall be operated in accordance with the applicable procedures under Performance Specification 1 of appendix B of this part. The span value of the opacity COMS shall be between 60 and 80 percent.
(c) Owners and operators of an affected facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur and/or liquid or gaseous fuels with potential sulfur dioxide emission rates of 26 ng/J (0.060 lb/MMBtu) heat input or less and that do not use a post-combustion technology to reduce SO2 or PM emissions and that are subject to an opacity standard in §60.43c(c) are not required to operate a COMS if they follow the applicable procedures in §60.48c(f).
(d) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in §60.45c(c). The CEMS specified in paragraph §60.45c(c) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
(e) Owners and operators of an affected facility that is subject to an opacity standard in §60.43c(c) and that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2, or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur, and is operated such that emissions of CO discharged to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis is not required to operate a COMS. Owners and operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (e)(1) through (4) of this section; or

(1) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.
(i) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in §60.58b(i)(3) of subpart Eb of this part.
(ii) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).
(iii) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in §60.13(h)(2).
(iv) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.
(2) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.
(3) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.
(4) You must record the CO measurements and calculations performed according to paragraph (e) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.
(f) An owner or operator of an affected facility that is subject to an opacity standard in §60.43c(c) is not required to operate a COMS provided that the affected facility meets the conditions in either paragraphs (f)(1), (2), or (3) of this section.
(1) The affected facility uses a fabric filter (baghouse) as the primary PM control device and, the owner or operator operates a bag leak detection system to monitor the performance of the fabric filter according to the requirements in section §60.48Da of this part.
(2) The affected facility uses an ESP as the primary PM control device, and the owner or operator uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the requirements in section §60.48Da of this part.
(3) The affected facility burns only gaseous fuels and/or fuel oils that contain no greater than 0.5 weight percent sulfur, and the owner or operator operates the unit according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under §60.48c(c).
(g) Owners and operators of an affected facility that is subject to an opacity standard in §60.43c(c) and that burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur and operates according to a written site-specific monitoring plan approved by the permitting authority is not required to operate a COMS. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011]

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include:
(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c.
(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.
(4) Notification if an emerging technology will be used for controlling SO_2emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.
(b) The owner or operator of each affected facility subject to the SO_2emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B of this part.
(c) In addition to the applicable requirements in §60.7, the owner or operator of an affected facility subject to the opacity limits in §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.
(1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(1)(i) through (iii) of this section.
(i) Dates and time intervals of all opacity observation periods;
(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and
(iii) Copies of all visible emission observer opacity field data sheets;
(2) For each performance test conducted using Method 22 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(2)(i) through (iv) of this section.
(i) Dates and time intervals of all visible emissions observation periods;
(ii) Name and affiliation for each visible emission observer participating in the performance test;
(iii) Copies of all visible emission observer opacity field data sheets; and
(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.
(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator
(d) The owner or operator of each affected facility subject to the SO_2emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall submit reports to the Administrator.
(e) The owner or operator of each affected facility subject to the SO_2emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.
(1) Calendar dates covered in the reporting period.
(2) Each 30-day average SO_2emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
(3) Each 30-day average percent of potential SO_2emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2or diluent (O_2or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.
(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.
(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.
(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.
(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.
(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of appendix B of this part.
(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.
(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.
(f) Fuel supplier certification shall include the following information:
(1) For distillate oil:
(i) The name of the oil supplier;
(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c; and
(iii) The sulfur content or maximum sulfur content of the oil.
(2) For residual oil:
(i) The name of the oil supplier;
(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;
(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and
(iv) The method used to determine the sulfur content of the oil.
(3) For coal:
(i) The name of the coal supplier;
(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);
(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and
(iv) The methods used to determine the properties of the coal.
(4) For other fuels:
(i) The name of the supplier of the fuel;
(ii) The potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input; and
(iii) The method used to determine the potential sulfur emissions rate of the fuel.
(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.
(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in §60.48c(f) to demonstrate compliance with the SO_2standard, fuels not subject to an emissions standard

(excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.
(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO_2standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.
(h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under §60.42c or §60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.
(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.
(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.
[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

ATTACHMENT C

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart AAa—Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983

Source: 49 FR 43845, Oct. 31, 1984, unless otherwise noted.

§ 60.270a Applicability and designation of affected facility.
(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems.
(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after August 17, 1983.

§ 60.271a Definitions.
As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.
Argon-oxygen decarburization vessel (AOD vessel) means any closed-bottom, refractory-lined converter vessel with submerged tuyeres through which gaseous mixtures containing argon and oxygen or nitrogen may be blown into molten steel for further refining.
Bag leak detection system means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other conditions that result in increases in particulate loadings. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.
Capture system means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an electric arc furnace or AOD vessel to the air pollution control device.
Charge means the addition of iron and steel scrap or other materials into the top of an electric arc furnace or the addition of molten steel or other materials into the top of an AOD vessel.
Control device means the air pollution control equipment used to remove particulate matter from the effluent gas stream generated by an electric arc furnace or AOD vessel.
Direct-shell evacuation control system (DEC system) means a system that maintains a negative pressure within the electric arc furnace above the slag or metal and ducts emissions to the control device.
Dust-handling system means equipment used to handle particulate matter collected by the control device for an electric arc furnace or AOD vessel subject to this subpart. For the purposes of this subpart, the dust-handling system shall consist of the control device dust hoppers, the dust-conveying equipment, any central dust storage equipment, the dust-treating equipment (e.g., pug mill, pelletizer), dust transfer equipment (from storage to truck), and any secondary control devices used with the dust transfer equipment.
Electric arc furnace (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. For the purposes of this subpart, an EAF shall consist of the furnace shell and roof and the transformer. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.
Heat cycle means the period beginning when scrap is charged to an empty EAF and ending when the EAF tap is completed or beginning when molten steel is charged to an empty AOD vessel and ending when the AOD vessel tap is completed.
Meltdown and refining period means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods and times when power to the EAF is off.
Melting means that phase of steel production cycle during which the iron and steel scrap is heated to the molten state.

Negative-pressure fabric filter means a fabric filter with the fans on the downstream side of the filter bags.
Positive-pressure fabric filter means a fabric filter with the fans on the upstream side of the filter bags.
Refining means that phase of the steel production cycle during which undesirable elements are removed from the molten steel and alloys are added to reach the final metal chemistry.
Shop means the building which houses one or more EAF's or AOD vessels.
Shop opacity means the arithmetic average of 24 observations of the opacity of emissions from the shop taken in accordance with Method 9 of appendix A of this part.
Tap means the pouring of molten steel from an EAF or AOD vessel.
Tapping period means the time period commencing at the moment an EAF begins to pour molten steel and ending either three minutes after steel ceases to flow from an EAF, or six minutes after steel begins to flow, whichever is longer.
[49 FR 43845, Oct. 31, 1984, as amended at 64 FR 10110, Mar. 2, 1999; 70 FR 8532, Feb. 22, 2005]

§ 60.272a Standard for particulate matter.
(a) On and after the date of which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an EAF or an AOD vessel any gases which:
(1) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf);
(2) Exit from a control device and exhibit 3 percent opacity or greater; and
(3) Exit from a shop and, due solely to the operations of any affected EAF(s) or AOD vessel(s), exhibit 6 percent opacity or greater.
(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the dust-handling system any gases that exhibit 10 percent opacity or greater.

§ 60.273a Emission monitoring.
(a) Except as provided under paragraphs (b) and (c) of this section, a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart.
(b) No continuous monitoring system shall be required on any control device serving the dust-handling system.
(c) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) is not required on any modular, multi-stack, negative-pressure or positive-pressure fabric filter if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer; or on any single-stack fabric filter if visible emissions from the control device are performed by a certified visible emission observer and the owner installs and continuously operates a bag leak detection system according to paragraph (e) of this section. Visible emission observations shall be conducted at least once per day for at least three 6-minute periods when the furnace is operating in the melting and refining period. All visible emissions observations shall be conducted in accordance with Method 9. If visible emissions occur from more than one point, the opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In that case, the Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in §60.272a(a).
(d) A furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of shop opacity are performed by a certified visible emission observer as follows: Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity

observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

(e) A bag leak detection system must be installed and continuously operated on all single-stack fabric filters if the owner or operator elects not to install and operate a continuous opacity monitoring system as provided for under paragraph (c) of this section. In addition, the owner or operator shall meet the visible emissions observation requirements in paragraph (c) of this section. The bag leak detection system must meet the specifications and requirements of paragraphs (e)(1) through (8) of this section.

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 milligram per actual cubic meter (0.00044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (*e.g.,* using a strip chart recorder or a data logger.)

(3) The bag leak detection system must be equipped with an alarm system that will sound when an increase in relative particulate loading is detected over the alarm set point established according to paragraph (e)(4) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) For each bag leak detection system required by paragraph (e) of this section, the owner or operator shall develop and submit to the Administrator or delegated authority, for approval, a site-specific monitoring plan that addresses the items identified in paragraphs (i) through (v) of this paragraph (e)(4). 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/R–98–015). The owner or operator 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:

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system including quality assurance procedures;

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list; and

(v) How the bag leak detection system output shall be recorded and stored.

(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 (if applicable).

(6) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided for in paragraphs (e)(6)(i) and (ii) of this section.

(i) 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 according to the procedures identified in the site-specific monitoring plan required under paragraphs (e)(4) of this section.

(ii) If opacities greater than zero percent are observed over four consecutive 15-second observations during the daily opacity observations required under paragraph (c) of this section 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.

(7) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detection sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(f) For each bag leak detection system installed according to paragraph (e) of this section, the owner or operator shall initiate procedures to determine the cause of all alarms within 1 hour of an alarm. Except as provided for under paragraph (g) of this section, the cause of the alarm must be alleviated within 3 hours of the time the alarm occurred by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to, the following:

(1) 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;
(2) Sealing off defective bags or filter media;
(3) Replacing defective bags or filter media or otherwise repairing the control device;
(4) Sealing off a defective baghouse compartment;
(5) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; and
(6) Shutting down the process producing the particulate emissions.
(g) In approving the site-specific monitoring plan required in paragraph (e)(4) of this section, the Administrator or delegated authority may allow owners or operators more than 3 hours to alleviate specific conditions that cause an alarm if the owner or operator identifies the condition that could lead to an alarm in the monitoring plan, adequately explains why it is 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.
[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6672, Feb. 14, 1989; 64 FR 10111, Mar. 2, 1999; 70 FR 8532, Feb. 22, 2005]

§ 60.274a Monitoring of operations.
(a) The owner or operator subject to the provisions of this subpart shall maintain records of the following information:
(1) All data obtained under paragraph (b) of this section; and
(2) All monthly operational status inspections performed under paragraph (c) of this section.
(b) Except as provided under paragraph (e) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis the furnace static pressure (if DEC system is in use, and a furnace static pressure gauge is installed according to paragraph (f) of this section) and either: check and record the control system fan motor amperes and damper position on a once-per-shift basis; install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check and record damper positions on a once-per-shift basis. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of appendix A of this part.
(c) When the owner or operator of an affected facility is required to demonstrate compliance with the standards under §60.272a(a)(3) and at any other time that the Administrator may require (under section 114 of the CAA, as amended) either: the control system fan motor amperes and all damper positions, the volumetric flow rate through each separately ducted hood, or the volumetric flow rate at the control device inlet and all damper positions shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to paragraph (b) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of §60.276a(c).
(d) Except as provided under paragraph (e) of this section, the owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (*i.e.* , pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.
(e) The owner or operator may petition the Administrator to approve any alternative to either the monitoring requirements specified in paragraph (b) of this section or the monthly operational status

inspections specified in paragraph (d) of this section if the alternative will provide a continuous record of operation of each emission capture system.

(f) Except as provided for under §60.273a(d), if emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The pressure shall be recorded as 15-minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) Except as provided for under §60.273a(d), when the owner or operator of an EAF controlled by a DEC is required to demonstrate compliance with the standard under §60.272a(a)(3), and at any other time the Administrator may require (under section 114 of the Clean Air Act, as amended), the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device required under paragraph (f) of this section. The owner or operator may petition the Administrator for reestablishment of the pressure whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility.

(h) During any performance test required under §60.8, and for any report thereof required by §60.276a(f) of this subpart, or to determine compliance with §60.272a(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF when direct-shell evacuation control systems are used;

(3) Control device operation log; and

(4) Continuous opacity monitor or Method 9 data.

[49 FR 43845, Oct. 31, 1984, as amended at 64 FR 10111, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000; 70 FR 8533, Feb. 22, 2005]

§ 60.275a Test methods and procedures.

(a) During performance tests required in §60.8, the owner or operator shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also §60.276a(e)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emission from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall demonstrate compliance with §60.272(a)(3) based on emissions from only the affected facility(ies).

(d) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in §60.272a as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each

run shall be at least 4 hours and 4.50 dscm (160 dscf) and, when a single EAF or AOD vessel is sampled, the sampling time shall include an integral number of heats.
(2) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$c_{st} = \left[\sum_{i=1}^{n} \left(c_{si} \, Q_{sdi} \right) \right] \Big/ \sum_{i=1}^{n} Q_{sdi}$$

where:
c_{st}=average concentration of particulate matter, mg/dscm (gr/dscf).
c_{si}=concentration of particulate matter from control device "i", mg/dscm (gr/dscf).
n=total number of control devices tested.
Q_{sdi}=volumetric flow rate of stack gas from control device "i", dscm/hr (dscf/hr).
(3) Method 9 and the procedures of §60.11 shall be used to determine opacity.
(4) To demonstrate compliance with §60.272a(a) (1), (2), and (3), the Method 9 test runs shall be conducted concurrently with the particulate matter test runs, unless inclement weather interferes.
(f) To comply with §60.274a (c), (f), (g), and (h), the owner or operator shall obtain the information required in these paragraphs during the particulate matter runs.
(g) Any control device subject to the provisions of the subpart shall be designed and constructed to allow measurement of emissions using applicable test methods and procedures.
(h) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:
(1) Base compliance on control of the combined emissions;
(2) Utilize a method acceptable to the Administrator that compensates for the emissions from the facilities not subject to the provisions of this subpart, or;
(3) Any combination of the criteria of paragraphs (h)(1) and (h)(2) of this section.
(i) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, determinations of compliance with §60.272a(a)(3) will only be based upon emissions originating from the affected facility(ies).
(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under §60.8 to demonstrate compliance with §60.272a(a) (1), (2), and (3) of this subpart.
[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6673, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 65 FR 61758, Oct. 17, 2000]

§ 60.276a Recordkeeping and reporting requirements.
(a) Records of the measurements required in §60.274a must be retained for at least 2 years following the date of the measurement.
(b) Each owner or operator shall submit a written report of exceedances of the control device opacity to the Administrator semi-annually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.
(c) Operation at a furnace static pressure that exceeds the value established under §60.274a(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under §60.274a(c) or operation at flow rates lower than those established under §60.274a(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually.
(d) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.
(e) When the owner or operator of an EAF or AOD is required to demonstrate compliance with the standard under §60.275 (b)(2) or a combination of (b)(1) and (b)(2) the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance.

Notification of the procedure(s) to be used must be postmarked at least 30 days prior to the performance test.

(f) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with §60.272a(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;
(2) Plant representative;
(3) Make and model of process, control device, and continuous monitoring equipment;
(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;
(5) Rated (design) capacity of process equipment;
(6) Those data required under §60.274a(h) of this subpart;
(i) List of charge and tap weights and materials;
(ii) Heat times and process log;
(iii) Control device operation log; and
(iv) Continuous opacity monitor or Method 9 data.
(7) Test dates and test times;
(8) Test company;
(9) Test company representative;
(10) Test observers from outside agency;
(11) Description of test methodology used, including any deviation from standard reference methods;
(12) Schematic of sampling location;
(13) Number of sampling points;
(14) Description of sampling equipment;
(15) Listing of sampling equipment calibrations and procedures;
(16) Field and laboratory data sheets;
(17) Description of sample recovery procedures;
(18) Sampling equipment leak check results;
(19) Description of quality assurance procedures;
(20) Description of analytical procedures;
(21) Notation of sample blank corrections; and
(22) Sample emission calculations.

(g) The owner or operator shall maintain records of all shop opacity observations made in accordance with §60.273a(d). All shop opacity observations in excess of the emission limit specified in §60.272a(a)(3) of this subpart shall indicate a period of excess emission, and shall be reported to the administrator semi-annually, according to §60.7(c).

(h) The owner or operator shall maintain the following records for each bag leak detection system required under §60.273a(e):

(1) Records of the bag leak detection system output;
(2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and
(3) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, if procedures were initiated within 1 hour of the alarm, 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.

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6673, Feb. 14, 1989; 64 FR 10111, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000; 70 FR 8533, Feb. 22, 2005]

Attachment D

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart CCC—National Emission Standards for Hazardous Air Pollutants for Steel Pickling—HCl Process Facilities and Hydrochloric Acid Regeneration Plants

Source: 64 FR 33218, June 22, 1999, unless otherwise noted.

§ 63.1155 Applicability.

(a) The provisions of this subpart apply to the following facilities and plants that are major sources for hazardous air pollutants (HAP) or are parts of facilities that are major sources for HAP:

(1) All new and existing steel pickling facilities that pickle carbon steel using hydrochloric acid solution that contains 6 percent or more by weight HCl and is at a temperature of 100 °F or higher; and

(2) All new and existing hydrochloric acid regeneration plants.

(3) The provisions of this subpart do not apply to facilities that pickle carbon steel without using hydrochloric acid, to facilities that pickle only specialty steel, or to acid regeneration plants that regenerate only acids other than hydrochloric acid.

(b) For the purposes of implementing this subpart, the affected sources at a facility or plant subject to this subpart are as follows: Continuous and batch pickling lines, hydrochloric acid regeneration plants, and hydrochloric acid storage vessels.

(c) Table 1 to this subpart specifies the provisions of this part 63, subpart A that apply and those that do not apply to owners and operators of steel pickling facilities and hydrochloric acid regeneration plants subject to this subpart.

(d) In response to an action to enforce the standards set forth in this subpart, the owner or operator may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by a malfunction, as defined in § 63.2. Appropriate penalties may be assessed, however, if the owner or operator fails to meet the burden of proving all the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a standard, the owner or operator must timely meet the reporting requirements of paragraph (d)(2) of this section, and must prove by a preponderance of evidence that:

(i) The violation was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal and usual manner; and could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and did not stem from any activity or event that could have been foreseen and avoided, or planned for; and was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when exceeded violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(iv) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at

issue. The analysis shall also specify, using the best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.
(2) *Report.* The owner of operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (d)(1) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmation defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.
[64 FR 33218, June 22, 1999, as amended at 77 FR 58250, Sept. 19, 2012]

§ 63.1156 Definitions.
Terms used in this subpart are defined in the Clean Air Act, in subpart A of this part, or in this section as follows:
Affirmative defense means, in the context of an enforcement proceeding, a response or a defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.
Batch pickling line means the collection of equipment and tanks configured for pickling metal in any form but usually in discrete shapes where the material is lowered in batches into a bath of acid solution, allowed to remain until the scale is dissolved, then removed from the solution, drained, and rinsed by spraying or immersion in one or more rinse tanks to remove residual acid.
Carbon steel means steel that contains approximately 2 percent or less carbon, 1.65 percent or less manganese, 0.6 percent or less silicon, and 0.6 percent or less copper.
Closed-vent system means a system that is not open to the atmosphere and that is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport emissions from a process unit or piece of equipment (e.g., pumps, pressure relief devices, sampling connections, open-ended valves or lines, connectors, and instrumentation systems) back into a closed system or into any device that is capable of reducing or collecting emissions.
Continuous pickling line means the collection of equipment and tanks configured for pickling metal strip, rod, wire, tube, or pipe that is passed through an acid solution in a continuous or nearly continuous manner and rinsed in another tank or series of tanks to remove residual acid. This definition includes continuous spray towers.
Hydrochloric acid regeneration plant means the collection of equipment and processes configured to reconstitute fresh hydrochloric acid pickling solution from spent pickle liquor using a thermal treatment process.
Hydrochloric acid regeneration plant production mode means operation under conditions that result in production of usable regenerated acid or iron oxide.
Hydrochloric acid storage vessel means a stationary vessel used for the bulk containment of virgin or regenerated hydrochloric acid.
Responsible maintenance official means a person designated by the owner or operator as having the knowledge and the authority to sign records and reports required under this rule.
Specialty steel means a category of steel that includes silicon electrical, alloy, tool, and stainless steels.
Spray tower means an enclosed vertical tower in which acid pickling solution is sprayed onto moving steel strip in multiple vertical passes.
Steel pickling means the chemical removal of iron oxide mill scale that is formed on steel surfaces during hot rolling or hot forming of semi-finished steel products through contact with an aqueous solution of acid where such contact occurs prior to shaping or coating of the finished steel product. This definition does not include removal of light rust or scale from finished steel products or activation of the metal surface prior to plating or coating.
Steel pickling facility means any facility that operates one or more batch or continuous steel pickling lines.
[64 FR 33218, June 22, 1999, as amended at 77 FR 58250, Sept. 19, 2012]

§ 63.1157 Emission standards for existing sources.

(a) *Pickling lines.* No owner or operator of an existing affected continuous or batch pickling line at a steel pickling facility shall cause or allow to be discharged into the atmosphere from the affected pickling line:

(1) Any gases that contain HCl in a concentration in excess of 18 parts per million by volume (ppmv); or

(2) HCl at a mass emission rate that corresponds to a collection efficiency of less than 97 percent.

(b) *Hydrochloric acid regeneration plants.* (1) No owner or operator of an existing affected plant shall cause or allow to be discharged into the atmosphere from the affected plant any gases that contain HCl in a concentration greater than 25 ppmv.

(2) In addition to the requirement of paragraph (b)(1) of this section, no owner or operator of an existing plant shall cause or allow to be discharged into the atmosphere from the affected plant any gases that contain chlorine (Cl_2) in a concentration in excess of 6 ppmv.

[64 FR 33218, June 22, 1999, as amended at 77 FR 58250, Sept. 19, 2012]

§ 63.1158 Emission standards for new or reconstructed sources.

(a) *Pickling lines* —(1) *Continuous pickling lines.* No owner or operator of a new or reconstructed affected continuous pickling line at a steel pickling facility shall cause or allow to be discharged into the atmosphere from the affected pickling line:

(i) Any gases that contain HCl in a concentration in excess of 6 ppmv; or

(ii) HCl at a mass emission rate that corresponds to a collection efficiency of less than 99 percent.

(2) *Batch pickling lines.* No owner or operator of a new or reconstructed affected batch pickling line at a steel pickling facility shall cause or allow to be discharged into the atmosphere from the affected pickling line:

(i) Any gases that contain HCl in a concentration in excess of 18 ppmv; or

(ii) HCl at a mass emission rate that corresponds to a collection efficiency of less than 97 percent.

(b) *Hydrochloric acid regeneration plants.* (1) No owner or operator of a new or reconstructed affected plant shall cause or allow to be discharged into the atmosphere from the affected plant any gases that contain HCl in a concentration greater than 12 ppmv.

(2) In addition to the requirement of paragraph (b)(1) of this section, no owner or operator of a new or reconstructed affected plant shall cause or allow to be discharged into the atmosphere from the affected plant any gases that contain Cl_2 in a concentration in excess of 6 ppmv.

§ 63.1159 Operational and equipment standards for existing, new, or reconstructed sources.

(a) *Hydrochloric acid regeneration plant.* The owner or operator of an affected plant must operate the affected plant at all times while in production mode in a manner that minimizes the proportion of excess air fed to the process and maximizes the process offgas temperature consistent with producing usable regenerated acid or iron oxide.

(b) *Hydrochloric acid storage vessels.* The owner or operator of an affected vessel shall provide and operate, except during loading and unloading of acid, a closed-vent system for each vessel. Loading and unloading shall be conducted either through enclosed lines or each point where the acid is exposed to the atmosphere shall be equipped with a local fume capture system, ventilated through an air pollution control device.

(c) *General duty to minimize emissions.* At all times, each owner or operator must operate and maintain any affected source subject to the requirements of this subpart, including associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[64 FR 33218, June 22, 1999, as amended at 77 FR 58250, Sept. 19, 2012]

§ 63.1160 Compliance dates and maintenance requirements.

(a) *Compliance dates.* (1) The owner or operator of an affected existing steel pickling facility and/or hydrochloric acid regeneration plant subject to this subpart shall achieve initial compliance with the requirements of this subpart no later than June 22, 2001.
(2) The owner or operator of a new or reconstructed steel pickling facility and/or hydrochloric acid regeneration plant subject to this subpart that commences construction or reconstruction after September 18, 1997, shall achieve compliance with the requirements of this subpart immediately upon startup of operations or by June 22, 1999, whichever is later.
(b) *Maintenance requirements.* (1) The owner or operator shall prepare an operation and maintenance plan for each emission control device to be implemented no later than the compliance date. The plan shall be incorporated by reference into the source's title V permit. All such plans must be consistent with good maintenance practices, and, for a scrubber emission control device, must at a minimum:
(i) Require monitoring and recording the pressure drop across the scrubber once per shift while the scrubber is operating in order to identify changes that may indicate a need for maintenance;
(ii) Require the manufacturer's recommended maintenance at the recommended intervals on fresh solvent pumps, recirculating pumps, discharge pumps, and other liquid pumps, in addition to exhaust system and scrubber fans and motors associated with those pumps and fans;
(iii) Require cleaning of the scrubber internals and mist eliminators at intervals sufficient to prevent buildup of solids or other fouling;
(iv) Require an inspection of each scrubber at intervals of no less than 3 months with:
(A) Cleaning or replacement of any plugged spray nozzles or other liquid delivery devices;
(B) Repair or replacement of missing, misaligned, or damaged baffles, trays, or other internal components;
(C) Repair or replacement of droplet eliminator elements as needed;
(D) Repair or replacement of heat exchanger elements used to control the temperature of fluids entering or leaving the scrubber; and
(E) Adjustment of damper settings for consistency with the required air flow.
(v) If the scrubber is not equipped with a viewport or access hatch allowing visual inspection, alternate means of inspection approved by the Administrator may be used.
(vi) The owner or operator shall initiate procedures for corrective action within 1 working day of detection of an operating problem and complete all corrective actions as soon as practicable. Procedures to be initiated are the applicable actions that are specified in the maintenance plan. Failure to initiate or provide appropriate repair, replacement, or other corrective action is a violation of the maintenance requirement of this subpart.
(vii) The owner or operator shall maintain a record of each inspection, including each item identified in paragraph (b)(2)(iv) of this section, that is signed by the responsible maintenance official and that shows the date of each inspection, the problem identified, a description of the repair, replacement, or other corrective action taken, and the date of the repair, replacement, or other corrective action taken.
(2) The owner or operator of each hydrochloric acid regeneration plant shall develop and implement a written maintenance program. The program shall require:
(i) Performance of the manufacturer's recommended maintenance at the recommended intervals on all required systems and components;
(ii) Initiation of procedures for appropriate and timely repair, replacement, or other corrective action within 1 working day of detection; and
(iii) Maintenance of a daily record, signed by a responsible maintenance official, showing the date of each inspection for each requirement, the problems found, a description of the repair, replacement, or other action taken, and the date of repair or replacement.
[64 FR 33218, June 22, 1999, as amended at 77 FR 58250, Sept. 19, 2012]

§ 63.1161 Performance testing and test methods.
(a) *Demonstration of compliance.* The owner or operator shall conduct an initial performance test for each process or emission control device to determine and demonstrate compliance with the applicable emission limitation according to the requirements in § 63.7 of subpart A of this part and in this section. Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon

request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(b) *Establishment of scrubber operating parameters.* During the performance test for each emission control device, the owner or operator using a wet scrubber to achieve compliance shall establish site-specific operating parameter values for the minimum scrubber makeup water flow rate and, for scrubbers that operate with recirculation, the minimum recirculation water flow rate. During the emission test, each operating parameter must be monitored continuously and recorded with sufficient frequency to establish a representative average value for that parameter, but no less frequently than once every 15 minutes. The owner or operator shall determine the operating parameter monitoring values as the averages of the values recorded during any of the runs for which results are used to establish the emission concentration or collection efficiency per paragraph (a)(2) of this section. An owner or operator may conduct multiple performance tests to establish alternative compliant operating parameter values. Also, an owner or operator may reestablish compliant operating parameter values as part of any performance test that is conducted subsequent to the initial test or tests.

(c) *Establishment of hydrochloric acid regeneration plant operating parameters.* (1) During the performance test for hydrochloric acid regeneration plants, the owner or operator shall establish site-specific operating parameter values for the minimum process offgas temperature and the maximum proportion of excess air fed to the process as described in § 63.1162(b)(1) of this subpart. During the emission test, each operating parameter must be monitored and recorded with sufficient frequency to establish a representative average value for that parameter, but no less frequently than once every 15 minutes for parameters that are monitored continuously. Amount of iron in the spent pickle liquor shall be determined for each run by sampling the liquor every 15 minutes and analyzing a composite of the samples. The owner or operator shall determine the compliant monitoring values as the averages of the values recorded during any of the runs for which results are used to establish the emission concentration per paragraph (a)(2) of this section. An owner or operator may conduct multiple performance tests to establish alternative compliant operating parameter values. Also, an owner or operator may reestablish compliant operating parameter values as part of any performance test that is conducted subsequent to the initial test or tests.

(2) [Reserved]

(d) *Test methods.* (1) The following test methods in appendix A of 40 CFR part 60 shall be used to determine compliance under §§ 63.1157(a), 63.1157(b), 63.1158(a), and 63.1158(b) of this subpart:

(i) Method 1, to determine the number and location of sampling points, with the exception that no traverse point shall be within one inch of the stack or duct wall;

(ii) Method 2, to determine gas velocity and volumetric flow rate;

(iii) Method 3, to determine the molecular weight of the stack gas;

(iv) Method 4, to determine the moisture content of the stack gas; and

(v) Method 26A, “Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources—Isokinetic Method,” to determine the HCl mass flows at the inlet and outlet of a control device or the concentration of HCl discharged to the atmosphere, and also to determine the concentration of Cl_2 discharged to the atmosphere from acid regeneration plants. If compliance with a collection efficiency standard is being demonstrated, inlet and outlet measurements shall be performed simultaneously. The minimum sampling time for each run shall be 60 minutes and the minimum sample volume 0.85 dry standard cubic meters (30 dry standard cubic feet). The concentrations of HCl and Cl_2 shall be calculated for each run as follows:

C_{HCl} (ppmv) = 0.659 C_{HCl} (mg/dscm),

and C_{C12} (ppmv) = 0.339 C_{C12} (mg/dscm),

where C(ppmv) is concentration in ppmv and C(mg/dscm) is concentration in milligrams per dry standard cubic meter as calculated by the procedure given in Method 26A.

(2) The owner or operator may use equivalent alternative measurement methods approved by the Administrator.

[64 FR 33218, June 22, 1999, as amended at 77 FR 58251, Sept. 19, 2012]

§ 63.1162 Monitoring requirements.

(a) The owner or operator of a new, reconstructed, or existing steel pickling facility or acid regeneration plant subject to this subpart shall:

(1) Conduct performance tests to measure the HCl mass flows at the control device inlet and outlet or the concentration of HCl exiting the control device according to the procedures described in § 63.1161 of this subpart. Performance tests shall be conducted either annually or according to an alternative schedule that is approved by the applicable permitting authority, but no less frequently than every $2\frac{1}{2}$ years or twice per title V permit term. If any performance test shows that the HCl emission limitation is being exceeded, then the owner or operator is in violation of the emission limit.

(2) In addition to conducting performance tests, if a wet scrubber is used as the emission control device, install, operate, and maintain systems for the measurement and recording of the scrubber makeup water flow rate and, if required, recirculation water flow rate. These flow rates must be monitored continuously and recorded at least once per shift while the scrubber is operating. Operation of the wet scrubber with excursions of scrubber makeup water flow rate and recirculation water flow rate less than the minimum values established during the performance test or tests will require initiation of corrective action as specified by the maintenance requirements in § 63.1160(b)(2) of this subpart.

(3) If an emission control device other than a wet scrubber is used, install, operate, and maintain systems for the measurement and recording of the appropriate operating parameters.

(4) Failure to record each of the operating parameters listed in paragraph (a)(2) of this section is a violation of the monitoring requirements of this subpart.

(5) Each monitoring device shall be certified by the manufacturer to be accurate to within 5 percent and shall be calibrated in accordance with the manufacturer's instructions but not less frequently than once per year.

(6) The owner or operator may develop and implement alternative monitoring requirements subject to approval by the Administrator.

(b) The owner or operator of a new, reconstructed, or existing acid regeneration plant subject to this subpart shall also install, operate, and maintain systems for the measurement and recording of the:

(1) Process offgas temperature, which shall be monitored continuously and recorded at least once every shift while the facility is operating in production mode; and

(2) Parameters from which proportion of excess air is determined. Proportion of excess air shall be determined by a combination of total air flow rate, fuel flow rate, spent pickle liquor addition rate, and amount of iron in the spent pickle liquor, or by any other combination of parameters approved by the Administrator in accordance with § 63.8(f) of subpart A of this part. Proportion of excess air shall be determined and recorded at least once every shift while the plant is operating in production mode.

(3) Each monitoring device must be certified by the manufacturer to be accurate to within 5 percent and must be calibrated in accordance with the manufacturer's instructions but not less frequently than once per year.

(4) Operation of the plant with the process offgas temperature lower than the value established during performance testing or with the proportion of excess air greater than the value established during performance testing is a violation of the operational standard specified in § 63.1159(a) of this subpart.

(c) The owner or operator of an affected hydrochloric acid storage vessel shall inspect each vessel semiannually to determine that the closed-vent system and either the air pollution control device or the enclosed loading and unloading line, whichever is applicable, are installed and operating when required.

§ 63.1163 Notification requirements.

(a) *Initial notifications.* As required by § 63.9(b) of subpart A of this part, the owner or operator shall submit the following written notifications to the Administrator:

(1) The owner or operator of an area source that subsequently becomes subject to the requirements of the standard shall provide notification to the applicable permitting authority as required by § 63.9(b)(1) of subpart A of this part.

(2) As required by § 63.9(b)(2) of subpart A of this part, the owner or operator of an affected source that has an initial startup before June 22, 1999, shall notify the Administrator that the source is subject to the requirements of the standard. The notification shall be submitted not later than October 20, 1999 (or

within 120 calendar days after the source becomes subject to this standard), and shall contain the information specified in §§ 63.9(b)(2)(i) through 63.9(b)(2)(v) of subpart A of this part.
(3) As required by § 63.9(b)(3) of subpart A of this part, the owner or operator of a new or reconstructed affected source, or a source that has been reconstructed such that it is an affected source, that has an initial startup after the effective date and for which an application for approval of construction or reconstruction is not required under § 63.5(d) of subpart A of this part, shall notify the Administrator in writing that the source is subject to the standards no later than 120 days after initial startup. The notification shall contain the information specified in §§ 63.9(b)(2)(i) through 63.9(b)(2)(v) of subpart A of this part, delivered or postmarked with the notification required in § 63.9(b)(5) of subpart A of this part.
(4) As required by § 63.9(b)(4) of subpart A of this part, the owner or operator of a new or reconstructed major affected source that has an initial startup after June 22, 1999, and for which an application for approval of construction or reconstruction is required under § 63.5(d) of subpart A of this part shall provide the information specified in §§ 63.9(b)(4)(i) through 63.9(b)(4)(v) of subpart A of this part.
(5) As required by § 63.9(b)(5) of subpart A of this part, the owner or operator who, after June 22, 1999, intends to construct a new affected source or reconstruct an affected source subject to this standard, or reconstruct a source such that it becomes an affected source subject to this standard, shall notify the Administrator, in writing, of the intended construction or reconstruction.
(b) *Request for extension of compliance.* As required by § 63.9(c) of subpart A of this part, if the owner or operator of an affected source cannot comply with this standard by the applicable compliance date for that source, or if the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of subpart A of this part, he/she may submit to the Administrator (or the State with an approved permit program) a request for an extension of compliance as specified in §§ 63.6(i)(4) through 63.6(i)(6) of subpart A of this part.
(c) *Notification that source is subject to special compliance requirements.* As required by § 63.9(d) of subpart A of this part, an owner or operator of a new source that is subject to special compliance requirements as specified in §§ 63.6(b)(3) and 63.6(b)(4) of subpart A of this part shall notify the Administrator of his/her compliance obligations not later than the notification dates established in § 63.9(b) of subpart A of this part for new sources that are not subject to the special provisions.
(d) *Notification of performance test.* As required by § 63.9(e) of subpart A of this part, the owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin, to allow the Administrator to review and approve the site-specific test plan required under § 63.7(c) of subpart A of this part and, if requested by the Administrator, to have an observer present during the test.
(e) *Notification of compliance status.* The owner or operator of an affected source shall submit a notification of compliance status as required by § 63.9(h) of subpart A of this part when the source becomes subject to this standard.

§ 63.1164 Reporting requirements.
(a) *Reporting results of performance tests.* Within 60 days after the date of completing each performance test (defined in § 63.2), as required by this subpart you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart to the EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/;cdx*). Performance test data must be submitted in the file format generated through use of the EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk, flash drive or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority. For any

performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in § 63.13.
(b) *Progress reports.* The owner or operator of an affected source who is required to submit progress reports under § 63.6(i) of subpart A of this part shall submit such reports to the Administrator (or the State with an approved permit program) by the dates specified in the written extension of compliance.
(c) *Reporting malfunctions.* The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded shall be stated in a semiannual report. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.1159(c), including actions taken to correct a malfunction. The report, to be certified by the owner or operator or other responsible official, shall be submitted semiannually and delivered or postmarked by the 30th day following the end of each calendar half.
[64 FR 33218, June 22, 1999, as amended at 71 FR 20458, Apr. 20, 2006; 77 FR 58251, Sept. 19, 2012]

§ 63.1165 Recordkeeping requirements.
(a) *General recordkeeping requirements.* As required by § 63.10(b)(2) of subpart A of this part, the owner or operator shall maintain records for 5 years from the date of each record of:
(1) The occurrence and duration of each malfunction of operation (*i.e.,* process equipment);
(2) The occurrence and duration of each malfunction of the air pollution control equipment;
(3) All maintenance performed on the air pollution control equipment;
(4) Actions taken during periods of malfunction to minimize emissions in accordance with § 63.1259(c) and the dates of such actions (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation);
(5) All required measurements needed to demonstrate compliance with the standard and to support data that the source is required to report, including, but not limited to, performance test measurements (including initial and any subsequent performance tests) and measurements as may be necessary to determine the conditions of the initial test or subsequent tests;
(6) All results of initial or subsequent performance tests;
(7) If the owner or operator has been granted a waiver from recordkeeping or reporting requirements under § 63.10(f) of subpart A of this part, any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements;
(8) If the owner or operator has been granted a waiver from the initial performance test under § 63.7(h) of subpart A of this part, a copy of the full request and the Administrator's approval or disapproval;
(9) All documentation supporting initial notifications and notifications of compliance status required by § 63.9 of subpart A of this part; and
(10) Records of any applicability determination, including supporting analyses.
(b) *Subpart CCC records.* (1) In addition to the general records required by paragraph (a) of this section, the owner or operator shall maintain records for 5 years from the date of each record of:
(i) Scrubber makeup water flow rate and recirculation water flow rate if a wet scrubber is used;
(ii) Calibration and manufacturer certification that monitoring devices are accurate to within 5 percent; and
(iii) Each maintenance inspection and repair, replacement, or other corrective action.
(2) The owner or operator of an acid regeneration plant shall also maintain records for 5 years from the date of each record of process offgas temperature and parameters that determine proportion of excess air.
(3) The owner or operator shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of the affected source or until the source is no longer subject to the provisions of this subpart. In addition, if the operation and maintenance plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the plan on record to be made available for inspection by the Administrator for a period of 5 years after each revision to the plan.
(c) *Recent records.* General records and subpart CCC records for the most recent 2 years of operation must be maintained on site. Records for the previous 3 years may be maintained off site.
[64 FR 33218, June 22, 1999, as amended at 77 FR 58251, Sept. 19, 2012]

§ 63.1166 Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (8) of this section.

(1) Approval of alternatives to the requirements in §§ 63.1155, 63.1157 through 63.1159, and 63.1160(a).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.

(3) Approval of any alternative measurement methods for HCl and CL_2 to those specified in § 63.1161(d)(1).

(4) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.

(5) Approval of any alternative monitoring requirements to those specified in §§ 63.1162(a)(2) through (5) and 63.1162(b)(1) through (3).

(6) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.

(7) Waiver of recordkeeping requirements specified in § 63.1165.

(8) Approval of an alternative schedule for conducting performance tests to the requirement specified in § 63.1162(a)(1).

[68 FR 37356, June 23, 2003]

§§ 63.1167-63.1174 [Reserved]

Table 1 to Subpart CCC of Part 63—Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart CCC

Reference	Applies to Subpart CCC	Explanation
63.1-63.5	Yes.	
63.6 (a)-(d)	Yes	
63.6(e)(1)(i)	No	See § 63.1259(c) for general duty requirement. Any cross-reference to § 63.6(e)(1)(i) in any other general provision incorporated by reference shall be treated as a cross-reference to § 63.1259(c).
63.6(e)(1)(ii)	No	
63.6(e)(1)(iii)	Yes	
63.6(e)(2)	No	Section reserved.
63.6(e)(3)	No	
63.6(f)(1)	No	
63.6(f)(2)-(3)	Yes	
63.6(g)	Yes	

Reference	**Applies to Subpart CCC**	**Explanation**
63.6(h)	No	Subpart CCC does not contain an opacity or visible emission standard.
63.6 (i)-(j)	Yes.	
63.7	Yes	
63.8(a)-(c)	Yes	
63.8(d)(1)-(2)	Yes	
63.8(d)(3)	Yes, except for last sentence	
63.8(e)-(f)	Yes	
63.10(a)	Yes	
63.10(b)(1)	Yes	
63.10(b)(2)(i)	No	
63.10(b)(2)(ii)	No	See § 63.1265(a)(1) for recordkeeping of occurrence and duration of malfunctions. See § 63.1265(a)(4) for recordkeeping of actions taken during malfunction. Any cross-reference to § 63.10(b)(2)(ii) in any other general provision incorporated by reference shall be treated as a cross-reference to § 63.1265(a)(1).
63.10(b)(2)(iii)	Yes	
63.10(b)(2)(iv)-(b)(2)(v)	No	
63.10(b)(2)(vi)-(b)(2)(xiv)	Yes	
63.10(b)(3)	Yes	
63.10(c)(1)-(9)	Yes	
63.10(c)(10)	No	See § 63.1164(c) for reporting malfunctions. Any cross-reference to § 63.10(c)(10) in any other general provision incorporated by reference shall be treated as a cross-reference to § 63.1164(c).
63.10(c)(11)	No	See § 63.1164(c) for reporting malfunctions. Any cross-reference to § 63.10(c)(11) in any other general provision incorporated by reference shall be treated as a cross-reference to § 63.1164(c).
63.10(c)(12)-(c)(14)	Yes	
63.10(c)(15)	No	
63.10(d)(1)-(2)	Yes.	
63.10(d)(3)	No	Subpart CCC does not contain an opacity or visible emission standard.

Reference	**Applies to Subpart CCC**	**Explanation**
63.10(d)(4)	Yes	
63.10(d)(5)	No	
63.10(e)-(f)	Yes.	
63.11	No	Subpart CCC does not require the use of flares.
63.12-63.15	Yes	

[64 FR 33218, June 22, 1999, as amended at 77 FR 58252, Sept. 19, 2012]

Attachment E

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Source: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for

the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).
[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§ 63.6590 What parts of my plant does this subpart cover?
This subpart applies to each affected source.
(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.
(1) *Existing stationary RICE.*
(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.
(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.
(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.
(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.
(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.
(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.
(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.
(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.
(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).
(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).
(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.
(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.
(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:
(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).
(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;
(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.
(1) A new or reconstructed stationary RICE located at an area source;
(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;
(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;
(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.
[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§ 63.6595 When do I have to comply with this subpart?
(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.
(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.
(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.
(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.
(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the

applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.
[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?
If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.
[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.
(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.
(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.
(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).
(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.
(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.
(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.
(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.
(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:
(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.
(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.
(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.
(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.
(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.
[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?
(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.
(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.
(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii), you must use

diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.
(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.
[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?
(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.
(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?
If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.
(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).
(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).
(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).
(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.
(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.
(2) The test must not be older than 2 years.
(3) The test must be reviewed and accepted by the Administrator.
(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.
(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]
(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.
(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (Eq.\ 1)$$

Where:
C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,
C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and
R = percent reduction of CO, THC, or formaldehyde emissions.
(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.
(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209\ F_d}{F_c} \quad (Eq.\ 2)$$

Where:
F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.
0.209 = Fraction of air that is oxygen, percent/100.
F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J ($dscf/10^6$ Btu).
F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3 /J ($dscf/10^6$ Btu)
(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{CO2} = \frac{5.9}{F_o} \quad (Eq.\ 3)$$

Where:
X_{CO2} = CO_2 correction factor, percent.
5.9 = 20.9 percent O_2 —15 percent O_2 , the defined O_2 correction value, percent.
(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq.\ 4)$$

Where:
C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent $O_{2.}$
C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.
X_{CO2} = CO_2 correction factor, percent.
$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.
(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.
(1) Identification of the specific parameters you propose to use as operating limitations;
(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;
(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.
(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.
(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (*e.g.,* operator adjustment, automatic controller adjustment, etc.) or unintentionally (*e.g.,* wear and tear, error, etc.) on a routine basis or over time;
(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;
(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;
(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;
(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;
(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and
(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.
(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.
[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.
(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.
(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance

specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO_2 concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (*e.g.,* thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

(e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

(1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;

(2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;

(3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;

(4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;
(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;
(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.
(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and
(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.
(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.
(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).
(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or
(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.
(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change

requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.
(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.
(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.
(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.
(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:
(1) The compliance demonstration must consist of at least three test runs.
(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.
(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.
(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.
(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.
[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. 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) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator

demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.
(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
(D) The power is provided only to the facility itself or to support the local transmission and distribution system.
(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.
[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?
(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;
(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.
(2) An existing stationary RICE located at an area source of HAP emissions.
(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.
(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.
(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.
(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.
(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.
(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in § 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.
(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.
(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.
(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.
(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.
(1) Company name and address.
(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
(3) Date of report and beginning and ending dates of the reporting period.
(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.
(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.
(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.
(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.
(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.
(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.
(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.
(1) The date and time that each malfunction started and stopped.
(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.
(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).
(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.
(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.
(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.
(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.
(9) A brief description of the stationary RICE.
(10) A brief description of the CMS.
(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in § 63.6640(f)(2)(ii) or (iii) or § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§ 63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.
[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.
(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.
(c) The authorities that will not be delegated to State, local, or tribal agencies are:
(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).
(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.
(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.
(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).
http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&rgn=div6&view=text&node=40:14.0.1.1.1.1&idno=40 - _top

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:
Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.
Area source means any stationary source of HAP that is not a major source as defined in part 63.
Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).
Black start engine means an engine whose only purpose is to start up a combustion turbine.
CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.,* as amended by Public Law 101-549, 104 Stat. 2399).
Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.
Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.
Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.
Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:
(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;
(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.
(4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).
Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.
Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (*e.g.* biodiesel) that is suitable for use in compression ignition engines.
Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2 .
Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.
Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.
(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.
(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).
(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(2)(ii) or (iii) and § 63.6640(f)(4)(i) or (ii).
Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup

means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2 .

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_X) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_X , CO, and volatile organic compounds (VOC) into CO_2 , nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.,* remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8 .

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment.

Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

Table 1 a **to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE > 500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	**You must meet the following emission limitation, except during periods of startup . . .**	**During periods of startup you must . . .**
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2	

[1]Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1 b **to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

For each . . .	**You must meet the following operating limitation, except during periods of startup . . .**
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent $O_2$and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F.[1]
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the	

concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2 and not using NSCR.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6706, Jan. 30, 2013]

Table 2 a **to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O_2. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O_2 until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O_2	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O_2	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2 b **to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP**

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	

existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.
[78 FR 6707, Jan. 30, 2013]

Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE [1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[3]
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or	

	less at 15 percent O_2.	
4. Non-Emergency, non-black start CI stationary RICE 300>HP≤500." is corrected to read "4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500.	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE.[1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	

	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O_2.	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O_2.	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O_2.	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O_2.	

[1] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[2] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

[3] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;[1] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
4. Emergency stationary CI RICE and black start stationary CI RICE.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	

	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours	

	of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first,	

	and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

[1] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

[2] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually.[1]
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually.[1]
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually.[1]
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

[1] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6612, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

Table 4 to Subpart ZZZZ of Part 63. Requirements for Performance Tests

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a c]	(a) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) [a b c] or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O_2, dry basis.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a] provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) if using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary RICE exhaust at the	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved	(a) measurements to determine O_2 concentration must be made at the same

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		sampling port location; and	2005).[a]	time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a]provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005),[a] [c]Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.[a]	(a) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[a] Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.
[b] You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.
[c] ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.
[78 FR 6711, Jan. 30, 2013]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at	a. Reduce CO emissions, and using	i. You have installed a CEMS to continuously monitor CO and either

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a CEMS	O_2 or CO_2 at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.[a]
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or	a. Limit the concentration of formaldehyde in the	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	stationary RICE exhaust and using oxidation catalyst or NSCR	the formaldehyde concentration limit [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE		
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent $O_{2,}$ or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

[a] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.
[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.
		b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4).	i. Semiannually according to the requirements in § 63.6650(b).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5).
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.
As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved]		

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No.	
§ 63.6(f)(1)	Applicability of standards	No.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes.	
§ 63.6(j)	Presidential compliance exemption	Yes.	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes.	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.
§ 63.7(d)	Testing facilities	Yes.	
§ 63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes.	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§ 63.7(f)	Alternative test method provisions	Yes.	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§ 63.7(h)	Waiver of tests	Yes.	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes.	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No.	
§ 63.8(b)(1)	Monitoring	Yes.	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	
§ 63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§ 63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes.	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which

General provisions citation	Subject of citation	Applies to subpart	Explanation
			applies to COMS.
		Except that § 63.8(e) only applies as specified in § 63.6645.	
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved.
		Except that § 63.9(b) only applies as specified in § 63.6645.	
§ 63.9(c)	Request for compliance extension	Yes	Except that § 63.9(c) only applies as specified in § 63.6645.
§ 63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that	

General provisions citation	Subject of citation	Applies to subpart	Explanation
		§ 63.9(g) only applies as specified in § 63.6645.	
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved.
			Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes.	
§ 63.9(j)	Change in previous information	Yes.	
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No.	
§ 63.10(b)(2)(vi)-(xi)	Records	Yes.	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes.	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§ 63.10(b)(3)	Records of applicability determination	Yes.	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes.	
§ 63.10(d)(2)	Report of performance test results	Yes.	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes.	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that § 63.10(e)(3)(i) (C) is reserved.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§ 63.11	Flares	No.	
§ 63.12	State authority and delegations	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by reference	Yes.	
§ 63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

Appendix A—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 Scope and Application. What is this Protocol?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O_2) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O_2).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O_2)	*7782-44-7*	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O_2 , or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?
The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 Summary of Protocol

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O_2 gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 Definitions

3.1 Measurement System. The total equipment required for the measurement of CO and O_2 concentrations. The measurement system consists of the following major subsystems:

3.1.1 Data Recorder. A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 Electrochemical (EC) Cell. A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 Interference Gas Scrubber. A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 Moisture Removal System. Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 Sample Interface. The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 Nominal Range. The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 Calibration Gas. A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 Zero Calibration Error. The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 Up-Scale Calibration Error. The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 Interference Check. A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 Repeatability Check. A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 Sample Flow Rate. The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 Sampling Run. A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O_2 and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre- sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 Sampling Day. A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check. The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 Performance-Established Configuration. The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 Interferences.

When present in sufficient concentrations, NO and NO_2 are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 Safety. [Reserved]

6.0 Equipment and Supplies.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 Sample Probe. A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 Sample Line. Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 Calibration Assembly (optional). A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 Particulate Filter (optional). Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 Sample Pump. A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 Sample Flow Rate Monitoring. An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 Sample Gas Manifold (optional). A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 EC cell. A device containing one or more EC cells to determine the CO and O_2 concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 Data Recorder. A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O_2 ; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 Interference Gas Filter or Scrubber. A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 Reagents and Standards. What calibration gases are needed?

7.1 Calibration Gases. CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O_2. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O_2) is acceptable for calibration of the O_2 cell. If needed, any lower percentage O_2 calibration gas must be a mixture of O_2 in nitrogen.

7.1.1 Up-Scale CO Calibration Gas Concentration. Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 Up-Scale O_2 Calibration Gas Concentration.

Select an O_2 gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O_2 . When the average exhaust gas O_2 readings are above 6 percent, you may use dry ambient air (20.9 percent O_2) for the up-scale O_2 calibration gas.

7.1.3 Zero Gas. Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO_2).

8.0 Sample Collection and Analysis

8.1 Selection of Sampling Sites.

8.1.1 Control Device Inlet. Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 Exhaust Gas Outlet. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 Stack Gas Collection and Analysis. Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the “sample conditioning phase” once per minute until constant readings are obtained. Then begin the “measurement data phase” and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the “measurement data phase” readings to calculate the average stack gas CO and O_2 concentrations.

8.3 EC Cell Rate. Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 Quality Control (Reserved)

10.0 Calibration and Standardization

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 Zero Calibration. For both the O_2 and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O_2 for the O_2 channel.
10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this "sample conditioning phase" once per minute until readings are constant for at least two minutes. Then begin the "measurement data phase" and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the "refresh phase" by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).
10.1.4 Up-Scale Calibration Error. The mean of the difference of the "measurement data phase" readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single "measurement data phase" reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively.
10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.
11.0 Analytical Procedure
The analytical procedure is fully discussed in Section 8.
12.0 Calculations and Data Analysis
Determine the CO and O_2 concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the "measurement data phase".
13.0 Protocol Performance
Use the following protocols to verify consistent analyzer performance during each field sampling day.
13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the "measurement data phase". The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.
Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent *or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed*).
13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO_2 gas standards that are generally recognized as representative of diesel-fueled engine NO and NO_2 emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.
13.2.1 Interference Response. The combined NO and NO_2 interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.
13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.
13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs.

During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 Repeatability Check Calculations. Determine the highest and lowest average “measurement data phase” CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ± 3 percent or ± 1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 Pollution Prevention (Reserved)

15.0 Waste Management (Reserved)

16.0 Alternative Procedures (Reserved)

17.0 References

(1) “Development of an Electrochemical Cell Emission Analyzer Test Protocol”, Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.

(2) “Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers”, EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.

(3) “ICAC Test Protocol for Periodic Monitoring”, EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.

(4) “Code of Federal Regulations”, Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

Table 1: Appendix A—Sampling Run Data.

Facility___________ Engine I.D.___________ Date_______				
Run Type:	(_)	(_)	(_)	(_)
(X)	Pre-Sample Calibration	Stack Gas Sample	Post-Sample Cal. Check	Repeatability Check

.

Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
Sample Cond. Phase											
″											
″											
″											
″											
Measurement Data Phase											
″											
″											
″											
″											
″											

Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
″											
″											
″											
″											
″											
Mean											
Refresh Phase											
″											
″											
″											
″											

[78 FR 6721, Jan. 30, 2013]

ATTACHMENT F

Title 40: Protection of Environment
PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Source: 76 FR 15664, Mar. 21, 2011, unless otherwise noted.

What This Subpart Covers

§ 63.7480 What is the purpose of this subpart?
This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

§ 63.7485 Am I subject to this subpart?
You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in § 63.7575 that is located at, or is part of, a major source of HAP, except as specified in § 63.7491. For purposes of this subpart, a major source of HAP is as defined in § 63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in § 63.7575.
[78 FR 7162, Jan. 31, 2013]

§ 63.7490 What is the affected source of this subpart?
(a) This subpart applies to new, reconstructed, and existing affected sources as described in paragraphs (a)(1) and (2) of this section.
(1) The affected source of this subpart is the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory as defined in § 63.7575.
(2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler or process heater, as defined in § 63.7575, located at a major source.
(b) A boiler or process heater is new if you commence construction of the boiler or process heater after June 4, 2010, and you meet the applicability criteria at the time you commence construction.
(c) A boiler or process heater is reconstructed if you meet the reconstruction criteria as defined in § 63.2, you commence reconstruction after June 4, 2010, and you meet the applicability criteria at the time you commence reconstruction.
(d) A boiler or process heater is existing if it is not new or reconstructed.
(e) An existing electric utility steam generating unit (EGU) that meets the applicability requirements of this subpart after the effective date of this final rule due to a change (e.g., fuel switch) is considered to be an existing source under this subpart.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

§ 63.7491 Are any boilers or process heaters not subject to this subpart?
The types of boilers and process heaters listed in paragraphs (a) through (n) of this section are not subject to this subpart.
(a) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part.
(b) A recovery boiler or furnace covered by subpart MM of this part.
(c) A boiler or process heater that is used specifically for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vessels. This does not include units that provide heat or steam to a process at a research and development facility.
(d) A hot water heater as defined in this subpart.
(e) A refining kettle covered by subpart X of this part.
(f) An ethylene cracking furnace covered by subpart YY of this part.
(g) Blast furnace stoves as described in EPA-453/R-01-005 (incorporated by reference, see § 63.14).

(h) Any boiler or process heater that is part of the affected source subject to another subpart of this part, such as boilers and process heaters used as control devices to comply with subparts JJJ, OOO, PPP, and U of this part.
(i) Any boiler or process heater that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler or process heater is provided by regulated gas streams that are subject to another standard.
(j) Temporary boilers as defined in this subpart.
(k) Blast furnace gas fuel-fired boilers and process heaters as defined in this subpart.
(l) Any boiler specifically listed as an affected source in any standard(s) established under section 129 of the Clean Air Act.
(m) A unit that burns hazardous waste covered by Subpart EEE of this part. A unit that is exempt from Subpart EEE as specified in § 63.1200(b) is not covered by Subpart EEE.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]
Editorial Note: At 78 FR 7162, Jan. 31, 2013, § 63.7491 was amended by revising paragraph (n). However, there is no paragraph (n) to revise.

§ 63.7495 When do I have to comply with this subpart?
(a) If you have a new or reconstructed boiler or process heater, you must comply with this subpart by January 31, 2013, or upon startup of your boiler or process heater, whichever is later.
(b) If you have an existing boiler or process heater, you must comply with this subpart no later than January 31, 2016, except as provided in § 63.6(i).
(c) If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, paragraphs (c)(1) and (2) of this section apply to you.
(1) Any new or reconstructed boiler or process heater at the existing source must be in compliance with this subpart upon startup.
(2) Any existing boiler or process heater at the existing source must be in compliance with this subpart within 3 years after the source becomes a major source.
(d) You must meet the notification requirements in § 63.7545 according to the schedule in § 63.7545 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limits and work practice standards in this subpart.
(e) If you own or operate an industrial, commercial, or institutional boiler or process heater and would be subject to this subpart except for the exemption in § 63.7491(l) for commercial and industrial solid waste incineration units covered by part 60, subpart CCCC or subpart DDDD, and you cease combusting solid waste, you must be in compliance with this subpart on the effective date of the switch from waste to fuel.
(f) If you own or operate an existing EGU that becomes subject to this subpart after January 31, 2013, you must be in compliance with the applicable existing source provisions of this subpart on the effective date such unit becomes subject to this subpart.
(g) If you own or operate an existing industrial, commercial, or institutional boiler or process heater and would be subject to this subpart except for a exemption in § 63.7491(i) that becomes subject to this subpart after January 31, 2013, you must be in compliance with the applicable existing source provisions of this subpart within 3 years after such unit becomes subject to this subpart.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]
Editorial Note: At 78 FR 7162, Jan. 31, 2013, § 63.7495 was amended by adding paragraph (e). However, there is already a paragraph (e).

Emission Limitations and Work Practice Standards

§ 63.7499 What are the subcategories of boilers and process heaters?
The subcategories of boilers and process heaters, as defined in § 63.7575 are:
(a) Pulverized coal/solid fossil fuel units.
(b) Stokers designed to burn coal/solid fossil fuel.
(c) Fluidized bed units designed to burn coal/solid fossil fuel.
(d) Stokers/sloped grate/other units designed to burn kiln dried biomass/bio-based solid.

(e) Fluidized bed units designed to burn biomass/bio-based solid.
(f) Suspension burners designed to burn biomass/bio-based solid.
(g) Fuel cells designed to burn biomass/bio-based solid.
(h) Hybrid suspension/grate burners designed to burn wet biomass/bio-based solid.
(i) Stokers/sloped grate/other units designed to burn wet biomass/bio-based solid.
(j) Dutch ovens/pile burners designed to burn biomass/bio-based solid.
(k) Units designed to burn liquid fuel that are non-continental units.
(l) Units designed to burn gas 1 fuels.
(m) Units designed to burn gas 2 (other) gases.
(n) Metal process furnaces.
(o) Limited-use boilers and process heaters.
(p) Units designed to burn solid fuel.
(q) Units designed to burn liquid fuel.
(r) Units designed to burn coal/solid fossil fuel.
(s) Fluidized bed units with an integrated fluidized bed heat exchanger designed to burn coal/solid fossil fuel.
(t) Units designed to burn heavy liquid fuel.
(u) Units designed to burn light liquid fuel.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

§ 63.7500 What emission limitations, work practice standards, and operating limits must I meet?
(a) You must meet the requirements in paragraphs (a)(1) through (3) of this section, except as provided in paragraphs (b), through (e) of this section. You must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of this section.
(1) You must meet each emission limit and work practice standard in Tables 1 through 3, and 11 through 13 to this subpart that applies to your boiler or process heater, for each boiler or process heater at your source, except as provided under § 63.7522. The output-based emission limits, in units of pounds per million Btu of steam output, in Tables 1 or 2 to this subpart are an alternative applicable only to boilers and process heaters that generate steam. The output-based emission limits, in units of pounds per megawatt-hour, in Tables 1 or 2 to this subpart are an alternative applicable only to boilers that generate electricity. If you operate a new boiler or process heater, you can choose to comply with alternative limits as discussed in paragraphs (a)(1)(i) through (a)(1)(iii) of this section, but on or after January 31, 2016, you must comply with the emission limits in Table 1 to this subpart.
(i) If your boiler or process heater commenced construction or reconstruction after June 4, 2010 and before May 20, 2011, you may comply with the emission limits in Table 1 or 11 to this subpart until January 31, 2016.
(ii) If your boiler or process heater commenced construction or reconstruction after May 20, 2011 and before December 23, 2011, you may comply with the emission limits in Table 1 or 12 to this subpart until January 31, 2016.
(iii) If your boiler or process heater commenced construction or reconstruction after December 23, 2011 and before January 31, 2013, you may comply with the emission limits in Table 1 or 13 to this subpart until January 31, 2016.
(2) You must meet each operating limit in Table 4 to this subpart that applies to your boiler or process heater. If you use a control device or combination of control devices not covered in Table 4 to this subpart, or you wish to establish and monitor an alternative operating limit or an alternative monitoring parameter, you must apply to the EPA Administrator for approval of alternative monitoring under § 63.8(f).
(3) At all times, you must operate and maintain any affected source (as defined in § 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
(b) As provided in § 63.6(g), EPA may approve use of an alternative to the work practice standards in this section.

(c) Limited-use boilers and process heaters must complete a tune-up every 5 years as specified in § 63.7540. They are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, the annual tune-up, or the energy assessment requirements in Table 3 to this subpart, or the operating limits in Table 4 to this subpart.
(d) Boilers and process heaters with a heat input capacity of less than or equal to 5 million Btu per hour in the units designed to burn gas 2 (other) fuels subcategory or units designed to burn light liquid fuels subcategory must complete a tune-up every 5 years as specified in § 63.7540.
(e) Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour must complete a tune-up every 5 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour must complete a tune-up every 2 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, or the operating limits in Table 4 to this subpart.
(f) These standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time you must comply only with Table 3 to this subpart.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

§ 63.7501 Affirmative Defense for Violation of Emission Standards During Malfunction.
In response to an action to enforce the standards set forth in § 63.7500 you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 63.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.
(a) *Assertion of affirmative defense.* To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:
(1) The violation:
(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and
(ii) Could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and
(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and
(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
(2) Repairs were made as expeditiously as possible when a violation occurred; and
(3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and
(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and
(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and
(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and
(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and
(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and
(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.
(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth

in § 63.7500 of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.
[78 FR 7163, Jan. 31, 2013]

General Compliance Requirements

§ 63.7505 What are my general requirements for complying with this subpart?
(a) You must be in compliance with the emission limits, work practice standards, and operating limits in this subpart. These limits apply to you at all times the affected unit is operating except for the periods noted in § 63.7500(f).
(b) [Reserved]
(c) You must demonstrate compliance with all applicable emission limits using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS), continuous parameter monitoring system (CPMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable. You may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to § 63.7530(c) is less than the applicable emission limit. (For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) Otherwise, you must demonstrate compliance for HCl, mercury, or TSM using performance testing, if subject to an applicable emission limit listed in Tables 1, 2, or 11 through 13 to this subpart.
(d) If you demonstrate compliance with any applicable emission limit through performance testing and subsequent compliance with operating limits (including the use of CPMS), or with a CEMS, or COMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (d)(1) through (4) of this section for the use of any CEMS, COMS, or CPMS. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 63.8(f).
(1) For each CMS required in this section (including CEMS, COMS, or CPMS), you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan that addresses design, data collection, and the quality assurance and quality control elements outlined in § 63.8(d) and the elements described in paragraphs (d)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation of your CMS. This requirement to develop and submit a site specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under appendix B to part 60 of this chapter and that meet the requirements of § 63.7525. Using the process described in § 63.8(f)(4), you may request approval of alternative monitoring system quality assurance and quality control procedures in place of those specified in this paragraph and, if approved, include the alternatives in your site-specific monitoring plan.
(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);
(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and
(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations, accuracy audits, analytical drift).
(2) In your site-specific monitoring plan, you must also address paragraphs (d)(2)(i) through (iii) of this section.
(i) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii);
(ii) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d);

and
(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) (as applicable in Table 10 to this subpart), (e)(1), and (e)(2)(i).
(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.
(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7164, Jan. 31, 2013]
http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=d7b288353a2b573ba99a4347ae536eb9&rgn=div6&view=text&node=40:14.0.1.1.1.5&idno=40 - _top

Testing, Fuel Analyses, and Initial Compliance Requirements

§ 63.7510 What are my initial compliance requirements and by what date must I conduct them?

(a) For each boiler or process heater that is required or that you elect to demonstrate compliance with any of the applicable emission limits in Tables 1 or 2 or 11 through 13 of this subpart through performance testing, your initial compliance requirements include all the following:
(1) Conduct performance tests according to § 63.7520 and Table 5 to this subpart.
(2) Conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart, except as specified in paragraphs (a)(2)(i) through (iii) of this section.
(i) For each boiler or process heater that burns a single type of fuel, you are not required to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart. For purposes of this subpart, units that use a supplemental fuel only for startup, unit shutdown, and transient flame stability purposes still qualify as units that burn a single type of fuel, and the supplemental fuel is not subject to the fuel analysis requirements under § 63.7521 and Table 6 to this subpart.
(ii) When natural gas, refinery gas, or other gas 1 fuels are co-fired with other fuels, you are not required to conduct a fuel analysis of those fuels according to § 63.7521 and Table 6 to this subpart. If gaseous fuels other than natural gas, refinery gas, or other gas 1 fuels are co-fired with other fuels and those gaseous fuels are subject to another subpart of this part, part 60, part 61, or part 65, you are not required to conduct a fuel analysis of those fuels according to § 63.7521 and Table 6 to this subpart.
(iii) You are not required to conduct a chlorine fuel analysis for any gaseous fuels. You must conduct a fuel analysis for mercury on gaseous fuels unless the fuel is exempted in paragraphs (a)(2)(i) and (ii) of this section.
(3) Establish operating limits according to § 63.7530 and Table 7 to this subpart.
(4) Conduct CMS performance evaluations according to § 63.7525.
(b) For each boiler or process heater that you elect to demonstrate compliance with the applicable emission limits in Tables 1 or 2 or 11 through 13 to this subpart for HCl, mercury, or TSM through fuel analysis, your initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart and establish operating limits according to § 63.7530 and Table 8 to this subpart. The fuels described in paragraph (a)(2)(i) and (ii) of this section are exempt from these fuel analysis and operating limit requirements. The fuels described in paragraph (a)(2)(ii) of this section are exempt from the chloride fuel analysis and operating limit requirements. Boilers and process heaters that use a CEMS for mercury or HCl are exempt from the performance testing and operating limit requirements specified in paragraph (a) of this section for the HAP for which CEMS are used.
(c) If your boiler or process heater is subject to a carbon monoxide (CO) limit, your initial compliance demonstration for CO is to conduct a performance test for CO according to Table 5 to this subpart or conduct a performance evaluation of your continuous CO monitor, if applicable, according to § 63.7525(a). Boilers and process heaters that use a CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Tables 12, or 11 through 13 to this subpart, as specified in § 63.7525(a), are exempt from the initial CO performance testing and oxygen concentration operating limit requirements specified in paragraph (a) of this section.

(d) If your boiler or process heater is subject to a PM limit, your initial compliance demonstration for PM is to conduct a performance test in accordance with § 63.7520 and Table 5 to this subpart.
(e) For existing affected sources (as defined in § 63.7490), you must complete the initial compliance demonstration, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the compliance date that is specified for your source in § 63.7495 and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart, except as specified in paragraph (j) of this section. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than the compliance date specified in § 63.7495, except as specified in paragraph (j) of this section. You must complete the one-time energy assessment specified in Table 3 to this subpart no later than the compliance date specified in § 63.7495, except as specified in paragraph (j) of this section.
(f) For new or reconstructed affected sources (as defined in § 63.7490), you must complete the initial compliance demonstration with the emission limits no later than July 30, 2013 or within 180 days after startup of the source, whichever is later. If you are demonstrating compliance with an emission limit in Tables 11 through 13 to this subpart that is less stringent (that is, higher) than the applicable emission limit in Table 1 to this subpart, you must demonstrate compliance with the applicable emission limit in Table 1 no later than July 29, 2016.
(g) For new or reconstructed affected sources (as defined in § 63.7490), you must demonstrate initial compliance with the applicable work practice standards in Table 3 to this subpart within the applicable annual, biennial, or 5-year schedule as specified in § 63.7540(a) following the initial compliance date specified in § 63.7495(a). Thereafter, you are required to complete the applicable annual, biennial, or 5-year tune-up as specified in § 63.7540(a).
(h) For affected sources (as defined in § 63.7490) that ceased burning solid waste consistent with § 63.7495(e) and for which the initial compliance date has passed, you must demonstrate compliance within 60 days of the effective date of the waste-to-fuel switch. If you have not conducted your compliance demonstration for this subpart within the previous 12 months, you must complete all compliance demonstrations for this subpart before you commence or recommence combustion of solid waste.
(i) For an existing EGU that becomes subject after January 31, 2013, you must demonstrate compliance within 180 days after becoming an affected source.
(j) For existing affected sources (as defined in § 63.7490) that have not operated between the effective date of the rule and the compliance date that is specified for your source in § 63.7495, you must complete the initial compliance demonstration, if subject to the emission limits in Table 2 to this subpart, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than 30 days after the re-start of the affected source and, if applicable, complete the one-time energy assessment specified in Table 3 to this subpart, no later than the compliance date specified in § 63.7495.
[78 FR 7164, Jan. 31, 2013]

§ 63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?
(a) You must conduct all applicable performance tests according to § 63.7520 on an annual basis, except as specified in paragraphs (b) through (e), (g), and (h) of this section. Annual performance tests must be completed no more than 13 months after the previous performance test, except as specified in paragraphs (b) through (e), (g), and (h) of this section.
(b) If your performance tests for a given pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit (or, in limited instances as specified in Tables 1 and 2 or 11 through 13 to this subpart, at or below the emission limit) for the pollutant, and if there are no changes in the operation of the individual boiler or process heater or air pollution control equipment that could increase emissions, you may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If you elect to demonstrate compliance using emission averaging under § 63.7522, you must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum

TSM input level is waived unless the stack test is conducted for TSM.

(c) If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Tables 1 and 2 or 11 through 13 to this subpart) for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Tables 1 and 2 or 11 through 13 to this subpart).

(d) If you are required to meet an applicable tune-up work practice standard, you must conduct an annual, biennial, or 5-year performance tune-up according to § 63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in § 63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in § 63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in § 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed affected source (as defined in § 63.7490), the first annual, biennial, or 5-year tune-up must be no later than 13 months, 25 months, or 61 months, respectively, after the initial startup of the new or reconstructed affected source.

(e) If you demonstrate compliance with the mercury, HCl, or TSM based on fuel analysis, you must conduct a monthly fuel analysis according to § 63.7521 for each type of fuel burned that is subject to an emission limit in Tables 1, 2, or 11 through 13 to this subpart. You may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If you burn a new type of fuel, you must conduct a fuel analysis before burning the new type of fuel in your boiler or process heater. You must still meet all applicable continuous compliance requirements in § 63.7540. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, you may decrease the fuel analysis frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or you begin burning a new type of fuel, you must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level.

(f) You must report the results of performance tests and the associated fuel analyses within 60 days after the completion of the performance tests. This report must also verify that the operating limits for each boiler or process heater have not changed or provide documentation of revised operating limits established according to § 63.7530 and Table 7 to this subpart, as applicable. The reports for all subsequent performance tests must include all applicable information required in § 63.7550.

(g) For affected sources (as defined in § 63.7490) that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, you must complete the subsequent compliance demonstration, if subject to the emission limits in Tables 1, 2, or 11 through 13 to this subpart, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete a subsequent tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) and the schedule described in § 63.7540(a)(13) for units that are not operating at the time of their scheduled tune-up.

(h) If your affected boiler or process heater is in the unit designed to burn light liquid subcategory and you combust ultra low sulfur liquid fuel, you do not need to conduct further performance tests if the pollutants measured during the initial compliance performance tests meet the emission limits in Tables 1 or 2 of this subpart providing you demonstrate ongoing compliance with the emissions limits by monitoring and recording the type of fuel combusted on a monthly basis. If you intend to use a fuel other than ultra low sulfur liquid fuel, natural gas, refinery gas, or other gas 1 fuel, you must conduct new performance tests within 60 days of burning the new fuel type.

(i) If you operate a CO CEMS that meets the Performance Specifications outlined in § 63.7525(a)(3) of this subpart to demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Tables 1, 2, or 11 through 13 to this subpart, you are not required to conduct CO performance tests and are not subject to the oxygen concentration operating limit requirement specified in § 63.7510(a).

[78 FR 7165, Jan. 31, 2013]

§ 63.7520 What stack tests and procedures must I use?

(a) You must conduct all performance tests according to § 63.7(c), (d), (f), and (h). You must also develop a site-specific stack test plan according to the requirements in § 63.7(c). You shall conduct all performance tests under such conditions as the Administrator specifies to you based on the representative performance of each boiler or process heater for the period being tested. Upon request, you shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests.

(b) You must conduct each performance test according to the requirements in Table 5 to this subpart.

(c) You must conduct each performance test under the specific conditions listed in Tables 5 and 7 to this subpart. You must conduct performance tests at representative operating load conditions while burning the type of fuel or mixture of fuels that has the highest content of chlorine and mercury, and TSM if you are opting to comply with the TSM alternative standard and you must demonstrate initial compliance and establish your operating limits based on these performance tests. These requirements could result in the need to conduct more than one performance test. Following each performance test and until the next performance test, you must comply with the operating limit for operating load conditions specified in Table 4 to this subpart.

(d) You must conduct a minimum of three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must comply with the minimum applicable sampling times or volumes specified in Tables 1 and 2 or 11 through 13 to this subpart.

(e) To determine compliance with the emission limits, you must use the F-Factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 at 40 CFR part 60, appendix A-7 of this chapter to convert the measured particulate matter (PM) concentrations, the measured HCl concentrations, the measured mercury concentrations, and the measured TSM concentrations that result from the performance test to pounds per million Btu heat input emission rates.

(f) Except for a 30-day rolling average based on CEMS (or sorbent trap monitoring system) data, if measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), you must use the method detection level as the measured emissions level for that pollutant in calculating compliance. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 29 fractions both for individual HAP metals and for total HAP metals) may include a combination of method detection level data and analytical data reported above the method detection level.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7166, Jan. 31, 2013]

§ 63.7521 What fuel analyses, fuel specification, and procedures must I use?

(a) For solid and liquid fuels, you must conduct fuel analyses for chloride and mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. For solid fuels and liquid fuels, you must also conduct fuel analyses for TSM if you are opting to comply with the TSM alternative standard. For gas 2 (other) fuels, you must conduct fuel analyses for mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. (For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) For purposes of complying with this section, a fuel gas system that consists of multiple gaseous fuels collected and mixed with each other is considered a single fuel type and sampling and analysis is only required on the combined fuel gas system that will feed the boiler or process heater. Sampling and analysis of the individual gaseous streams prior to combining is not required. You are not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. You are required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury, HCl, or TSM in Tables 1 and 2 or 11 through 13 to this subpart. Gaseous and liquid fuels are exempt from the sampling requirements in paragraphs (c) and (d) of this section and Table 6 to this subpart.

(b) You must develop a site-specific fuel monitoring plan according to the following procedures and requirements in paragraphs (b)(1) and (2) of this section, if you are required to conduct fuel analyses as specified in § 63.7510.

(1) If you intend to use an alternative analytical method other than those required by Table 6 to this subpart, you must submit the fuel analysis plan to the Administrator for review and approval no later than 60 days before the date that you intend to conduct the initial compliance demonstration described in

§ 63.7510.
(2) You must include the information contained in paragraphs (b)(2)(i) through (vi) of this section in your fuel analysis plan.
(i) The identification of all fuel types anticipated to be burned in each boiler or process heater.
(ii) For each anticipated fuel type, the notification of whether you or a fuel supplier will be conducting the fuel analysis.
(iii) For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the composite samples if your procedures are different from paragraph (c) or (d) of this section. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types.
(iv) For each anticipated fuel type, the analytical methods from Table 6, with the expected minimum detection levels, to be used for the measurement of chlorine or mercury.
(v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that you are proposing to use. Methods in Table 6 shall be used until the requested alternative is approved.
(vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.
(c) At a minimum, you must obtain three composite fuel samples for each fuel type according to the procedures in paragraph (c)(1) or (2) of this section, or the methods listed in Table 6 to this subpart, or use an automated sampling mechanism that provides representative composite fuel samples for each fuel type that includes both coarse and fine material.
(1) If sampling from a belt (or screw) feeder, collect fuel samples according to paragraphs (c)(1)(i) and (ii) of this section.
(i) Stop the belt and withdraw a 6-inch wide sample from the full cross-section of the stopped belt to obtain a minimum two pounds of sample. You must collect all the material (fines and coarse) in the full cross-section. You must transfer the sample to a clean plastic bag.
(ii) Each composite sample will consist of a minimum of three samples collected at approximately equal one-hour intervals during the testing period for sampling during performance stack testing. For monthly sampling, each composite sample shall be collected at approximately equal 10-day intervals during the month.
(2) If sampling from a fuel pile or truck, you must collect fuel samples according to paragraphs (c)(2)(i) through (iii) of this section.
(i) For each composite sample, you must select a minimum of five sampling locations uniformly spaced over the surface of the pile.
(ii) At each sampling site, you must dig into the pile to a uniform depth of approximately 18 inches. You must insert a clean shovel into the hole and withdraw a sample, making sure that large pieces do not fall off during sampling; use the same shovel to collect all samples.
(iii) You must transfer all samples to a clean plastic bag for further processing.
(d) You must prepare each composite sample according to the procedures in paragraphs (d)(1) through (7) of this section.
(1) You must thoroughly mix and pour the entire composite sample over a clean plastic sheet.
(2) You must break large sample pieces (e.g., larger than 3 inches) into smaller sizes.
(3) You must make a pie shape with the entire composite sample and subdivide it into four equal parts.
(4) You must separate one of the quarter samples as the first subset.
(5) If this subset is too large for grinding, you must repeat the procedure in paragraph (d)(3) of this section with the quarter sample and obtain a one-quarter subset from this sample.
(6) You must grind the sample in a mill.
(7) You must use the procedure in paragraph (d)(3) of this section to obtain a one-quarter subsample for analysis. If the quarter sample is too large, subdivide it further using the same procedure.
(e) You must determine the concentration of pollutants in the fuel (mercury and/or chlorine and/or TSM) in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 6 to this subpart, for use in Equations 7, 8, and 9 of this subpart.
(f) To demonstrate that a gaseous fuel other than natural gas or refinery gas qualifies as an other gas 1 fuel, as defined in § 63.7575, you must conduct a fuel specification analyses for mercury according to the

procedures in paragraphs (g) through (i) of this section and Table 6 to this subpart, as applicable, except as specified in paragraph (f)(1) through (4) of this section.

(1) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for natural gas or refinery gas.

(2) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for gaseous fuels that are subject to another subpart of this part, part 60, part 61, or part 65.

(3) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section on gaseous fuels for units that are complying with the limits for units designed to burn gas 2 (other) fuels.

(4) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for gas streams directly derived from natural gas at natural gas production sites or natural gas plants.

(g) You must develop and submit a site-specific fuel analysis plan for other gas 1 fuels to the EPA Administrator for review and approval according to the following procedures and requirements in paragraphs (g)(1) and (2) of this section.

(1) If you intend to use an alternative analytical method other than those required by Table 6 to this subpart, you must submit the fuel analysis plan to the Administrator for review and approval no later than 60 days before the date that you intend to conduct the initial compliance demonstration described in § 63.7510.

(2) You must include the information contained in paragraphs (g)(2)(i) through (vi) of this section in your fuel analysis plan.

(i) The identification of all gaseous fuel types other than those exempted from fuel specification analysis under (f)(1) through (3) of this section anticipated to be burned in each boiler or process heater.

(ii) For each anticipated fuel type, the notification of whether you or a fuel supplier will be conducting the fuel specification analysis.

(iii) For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the samples if your procedures are different from the sampling methods contained in Table 6 to this subpart. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types. If multiple boilers or process heaters are fueled by a common fuel stream it is permissible to conduct a single gas specification at the common point of gas distribution.

(iv) For each anticipated fuel type, the analytical methods from Table 6 to this subpart, with the expected minimum detection levels, to be used for the measurement of mercury.

(v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that you are proposing to use. Methods in Table 6 to this subpart shall be used until the requested alternative is approved.

(vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.

(h) You must obtain a single fuel sample for each fuel type according to the sampling procedures listed in Table 6 for fuel specification of gaseous fuels.

(i) You must determine the concentration in the fuel of mercury, in units of microgram per cubic meter, dry basis, of each sample for each other gas 1 fuel type according to the procedures in Table 6 to this subpart.

[78 FR 7167, Jan. 31, 2013]

§ 63.7522 Can I use emissions averaging to comply with this subpart?

(a) As an alternative to meeting the requirements of § 63.7500 for PM (or TSM), HCl, or mercury on a boiler or process heater-specific basis, if you have more than one existing boiler or process heater in any subcategories located at your facility, you may demonstrate compliance by emissions averaging, if your averaged emissions are not more than 90 percent of the applicable emission limit, according to the procedures in this section. You may not include new boilers or process heaters in an emissions average.

(b) For a group of two or more existing boilers or process heaters in the same subcategory that each vent to a separate stack, you may average PM (or TSM), HCl, or mercury emissions among existing units to

demonstrate compliance with the limits in Table 2 to this subpart as specified in paragraph (b)(1) through (3) of this section, if you satisfy the requirements in paragraphs (c) through (g) of this section.
(1) You may average units using a CEMS or PM CPMS for demonstrating compliance.
(2) For mercury and HCl, averaging is allowed as follows:
(i) You may average among units in any of the solid fuel subcategories.
(ii) You may average among units in any of the liquid fuel subcategories.
(iii) You may average among units in a subcategory of units designed to burn gas 2 (other) fuels.
(iv) You may not average across the units designed to burn liquid, units designed to burn solid fuel, and units designed to burn gas 2 (other) subcategories.
(3) For PM (or TSM), averaging is only allowed between units within each of the following subcategories and you may not average across subcategories:
(i) Units designed to burn coal/solid fossil fuel.
(ii) Stokers/sloped grate/other units designed to burn kiln dried biomass/bio-based solids.
(iii) Stokers/sloped grate/other units designed to burn wet biomass/bio-based solids.
(iv) Fluidized bed units designed to burn biomass/bio-based solid.
(v) Suspension burners designed to burn biomass/bio-based solid.
(vi) Dutch ovens/pile burners designed to burn biomass/bio-based solid.
(vii) Fuel Cells designed to burn biomass/bio-based solid.
(viii) Hybrid suspension/grate burners designed to burn wet biomass/bio-based solid.
(ix) Units designed to burn heavy liquid fuel.
(x) Units designed to burn light liquid fuel.
(xi) Units designed to burn liquid fuel that are non-continental units.
(xii) Units designed to burn gas 2 (other) gases.
(c) For each existing boiler or process heater in the averaging group, the emission rate achieved during the initial compliance test for the HAP being averaged must not exceed the emission level that was being achieved on January 31, 2013 or the control technology employed during the initial compliance test must not be less effective for the HAP being averaged than the control technology employed on January 31, 2013.
(d) The averaged emissions rate from the existing boilers and process heaters participating in the emissions averaging option must not exceed 90 percent of the limits in Table 2 to this subpart at all times the affected units are operating following the compliance date specified in § 63.7495.
(e) You must demonstrate initial compliance according to paragraph (e)(1) or (2) of this section using the maximum rated heat input capacity or maximum steam generation capacity of each unit and the results of the initial performance tests or fuel analysis.
(1) You must use Equation 1a or 1b or 1c of this section to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option for that pollutant do not exceed the emission limits in Table 2 to this subpart. Use Equation 1a if you are complying with the emission limits on a heat input basis, use Equation 1b if you are complying with the emission limits on a steam generation (output) basis, and use Equation 1c if you are complying with the emission limits on a electric generation (output) basis.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Hm) \div \sum_{i=1}^{n} Hm \qquad \text{(Eq.1a)}$$

Where:
AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.
Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).
Hm = Maximum rated heat input capacity of unit, i, in units of million Btu per hour.
n = Number of units participating in the emissions averaging option.
1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n}(Er \times So) \div \sum_{i=1}^{n} So \qquad \text{(Eq.1b)}$$

Where:
AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output.
Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, Eadj, determined according to § 63.7533 for that unit.
So = Maximum steam output capacity of unit, i, in units of million Btu per hour, as defined in § 63.7575.
n = Number of units participating in the emissions averaging option.
1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n}(Er \times Eo) \div \sum_{i=1}^{n} Eo \qquad \text{(Eq.1c)}$$

Where:
AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour.
Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, Eadj, determined according to § 63.7533 for that unit.
Eo = Maximum electric generating output capacity of unit, i, in units of megawatt hour, as defined in § 63.7575.
n = Number of units participating in the emissions averaging option.
1.1 = Required discount factor.
(2) If you are not capable of determining the maximum rated heat input capacity of one or more boilers that generate steam, you may use Equation 2 of this section as an alternative to using Equation 1a of this section to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option do not exceed the emission limits for that pollutant in Table 2 to this subpart that are in pounds per million Btu of heat input.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n}(Er \times Sm \times Cfi) \div \sum_{i=1}^{n}(Sm \times Cfi) \qquad \text{(Eq. 2)}$$

http://www.ecfr.gov/graphics/pdfs/er31ja13.007.pdf
Where:
AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.
Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).
Sm = Maximum steam generation capacity by unit, i, in units of pounds per hour.
Cfi = Conversion factor, calculated from the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for unit, i.
1.1 = Required discount factor.
(f) After the initial compliance demonstration described in paragraph (e) of this section, you must demonstrate compliance on a monthly basis determined at the end of every month (12 times per year) according to paragraphs (f)(1) through (3) of this section. The first monthly period begins on the compliance date specified in § 63.7495. If the affected source elects to collect monthly data for up the 11

months preceding the first monthly period, these additional data points can be used to compute the 12-month rolling average in paragraph (f)(3) of this section.

(1) For each calendar month, you must use Equation 3a or 3b or 3c of this section to calculate the average weighted emission rate for that month. Use Equation 3a and the actual heat input for the month for each existing unit participating in the emissions averaging option if you are complying with emission limits on a heat input basis. Use Equation 3b and the actual steam generation for the month if you are complying with the emission limits on a steam generation (output) basis. Use Equation 3c and the actual steam generation for the month if you are complying with the emission limits on a electrical generation (output) basis.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Hb) \div \sum_{i=1}^{n} Hb \qquad \text{(Eq. 3a)}$$

Where:
AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input, for that calendar month.
Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart.
Hb = The heat input for that calendar month to unit, i, in units of million Btu.
n = Number of units participating in the emissions averaging option.
1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times So) \div \sum_{i=1}^{n} So \qquad \text{(Eq. 3b)}$$

http://www.ecfr.gov/graphics/pdfs/er31ja13.009.pdf
Where:
AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output, for that calendar month.
Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart. If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, E_{adj} , determined according to § 63.7533 for that unit.
So = The steam output for that calendar month from unit, i, in units of million Btu, as defined in § 63.7575.
n = Number of units participating in the emissions averaging option.
1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Eo) \div \sum_{i=1}^{n} Eo \qquad \text{(Eq. 3c)}$$

http://www.ecfr.gov/graphics/pdfs/er31ja13.010.pdf
Where:
AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour, for that calendar month.
Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart. If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, E_{adj} , determined according to § 63.7533 for that unit.
Eo = The electric generating output for that calendar month from unit, i, in units of megawatt hour, as defined in § 63.7575.
n = Number of units participating in the emissions averaging option.
1.1 = Required discount factor.

(2) If you are not capable of monitoring heat input, you may use Equation 4 of this section as an

alternative to using Equation 3a of this section to calculate the average weighted emission rate using the actual steam generation from the boilers participating in the emissions averaging option.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n}(Er \times Sa \times Cfi) \div \sum_{i=1}^{n}(Sa \times Cfi) \quad \text{(Eq. 4)}$$

http://www.ecfr.gov/graphics/pdfs/er31ja13.011.pdf

Where:

AveWeightedEmissions = average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart.

Sa = Actual steam generation for that calendar month by boiler, i, in units of pounds.

Cfi = Conversion factor, as calculated during the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for boiler, i.

1.1 = Required discount factor.

(3) Until 12 monthly weighted average emission rates have been accumulated, calculate and report only the average weighted emission rate determined under paragraph (f)(1) or (2) of this section for each calendar month. After 12 monthly weighted average emission rates have been accumulated, for each subsequent calendar month, use Equation 5 of this section to calculate the 12-month rolling average of the monthly weighted average emission rates for the current calendar month and the previous 11 calendar months.

$$Eavg = \sum_{i=1}^{n} ERi \div 12 \quad \text{(Eq. 5)}$$

http://www.ecfr.gov/graphics/pdfs/er21mr11.004.pdf

Where:

Eavg = 12-month rolling average emission rate, (pounds per million Btu heat input)

ERi = Monthly weighted average, for calendar month “i” (pounds per million Btu heat input), as calculated by paragraph (f)(1) or (2) of this section.

(g) You must develop, and submit upon request to the applicable Administrator for review and approval, an implementation plan for emission averaging according to the following procedures and requirements in paragraphs (g)(1) through (4) of this section.

(1) You must submit the implementation plan no later than 180 days before the date that the facility intends to demonstrate compliance using the emission averaging option.

(2) You must include the information contained in paragraphs (g)(2)(i) through (vii) of this section in your implementation plan for all emission sources included in an emissions average:

(i) The identification of all existing boilers and process heaters in the averaging group, including for each either the applicable HAP emission level or the control technology installed as of January 31, 2013 and the date on which you are requesting emission averaging to commence;

(ii) The process parameter (heat input or steam generated) that will be monitored for each averaging group;

(iii) The specific control technology or pollution prevention measure to be used for each emission boiler or process heater in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple boilers or process heaters, the owner or operator must identify each boiler or process heater;

(iv) The test plan for the measurement of PM (or TSM), HCl, or mercury emissions in accordance with the requirements in § 63.7520;

(v) The operating parameters to be monitored for each control system or device consistent with § 63.7500 and Table 4, and a description of how the operating limits will be determined;

(vi) If you request to monitor an alternative operating parameter pursuant to § 63.7525, you must also include:

(A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and

(B) A description of the methods and procedures that will be used to demonstrate that the parameter

indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the Administrator, that the proposed monitoring frequency is sufficient to represent control device operating conditions; and
(vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating load conditions. Following each compliance demonstration and until the next compliance demonstration, you must comply with the operating limit for operating load conditions specified in Table 4 to this subpart.
(3) The Administrator shall review and approve or disapprove the plan according to the following criteria:
(i) Whether the content of the plan includes all of the information specified in paragraph (g)(2) of this section; and
(ii) Whether the plan presents sufficient information to determine that compliance will be achieved and maintained.
(4) The applicable Administrator shall not approve an emission averaging implementation plan containing any of the following provisions:
(i) Any averaging between emissions of differing pollutants or between differing sources; or
(ii) The inclusion of any emission source other than an existing unit in the same subcategories.
(h) For a group of two or more existing affected units, each of which vents through a single common stack, you may average PM (or TSM), HCl, or mercury emissions to demonstrate compliance with the limits for that pollutant in Table 2 to this subpart if you satisfy the requirements in paragraph (i) or (j) of this section.
(i) For a group of two or more existing units in the same subcategories, each of which vents through a common emissions control system to a common stack, that does not receive emissions from units in other subcategories or categories, you may treat such averaging group as a single existing unit for purposes of this subpart and comply with the requirements of this subpart as if the group were a single unit.
(j) For all other groups of units subject to the common stack requirements of paragraph (h) of this section, including situations where the exhaust of affected units are each individually controlled and then sent to a common stack, the owner or operator may elect to:
(1) Conduct performance tests according to procedures specified in § 63.7520 in the common stack if affected units from other subcategories vent to the common stack. The emission limits that the group must comply with are determined by the use of Equation 6 of this section.

$$En = \sum_{i=1}^{n}(ELi \times Hi) \div \sum_{i=1}^{n} Hi \qquad \text{(Eq. 6)}$$

Where:
En = HAP emission limit, pounds per million British thermal units (lb/MMBtu), parts per million (ppm), or nanograms per dry standard cubic meter (ng/dscm).
ELi = Appropriate emission limit from Table 2 to this subpart for unit i, in units of lb/MMBtu, ppm or ng/dscm.
Hi = Heat input from unit i, MMBtu.
(2) Conduct performance tests according to procedures specified in § 63.7520 in the common stack. If affected units and non-affected units vent to the common stack, the non-affected units must be shut down or vented to a different stack during the performance test unless the facility determines to demonstrate compliance with the non-affected units venting to the stack; and
(3) Meet the applicable operating limit specified in § 63.7540 and Table 8 to this subpart for each emissions control system (except that, if each unit venting to the common stack has an applicable opacity operating limit, then a single continuous opacity monitoring system may be located in the common stack instead of in each duct to the common stack).
(k) The common stack of a group of two or more existing boilers or process heaters in the same subcategories subject to paragraph (h) of this section may be treated as a separate stack for purposes of paragraph (b) of this section and included in an emissions averaging group subject to paragraph (b) of this section.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7168, Jan. 31, 2013]

§ 63.7525 What are my monitoring, installation, operation, and maintenance requirements?

(a) If your boiler or process heater is subject to a CO emission limit in Tables 1, 2, or 11 through 13 to this subpart, you must install, operate, and maintain an oxygen analyzer system, as defined in § 63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen according to the procedures in paragraphs (a)(1) through (7) of this section.

(1) Install the CO CEMS and oxygen analyzer by the compliance date specified in § 63.7495. The CO and oxygen levels shall be monitored at the same location at the outlet of the boiler or process heater.

(2) To demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Tables 1, 2, or 11 through 13 to this subpart, you must install, certify, operate, and maintain a CO CEMS and an oxygen analyzer according to the applicable procedures under Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, the site-specific monitoring plan developed according to § 63.7505(d), and the requirements in § 63.7540(a)(8) and paragraph (a) of this section. Any boiler or process heater that has a CO CEMS that is compliant with Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, a site-specific monitoring plan developed according to § 63.7505(d), and the requirements in § 63.7540(a)(8) and paragraph (a) of this section must use the CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Tables 1, 2, or 11 through 13 to this subpart.

(i) You must conduct a performance evaluation of each CO CEMS according to the requirements in § 63.8(e) and according to Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B.

(ii) During each relative accuracy test run of the CO CEMS, you must be collect emission data for CO concurrently (or within a 30- to 60-minute period) by both the CO CEMS and by Method 10, 10A, or 10B at 40 CFR part 60, appendix A-4. The relative accuracy testing must be at representative operating conditions.

(iii) You must follow the quality assurance procedures (e.g., quarterly accuracy determinations and daily calibration drift tests) of Procedure 1 of appendix F to part 60. The measurement span value of the CO CEMS must be two times the applicable CO emission limit, expressed as a concentration.

(iv) Any CO CEMS that does not comply with § 63.7525(a) cannot be used to meet any requirement in this subpart to demonstrate compliance with a CO emission limit listed in Tables 1, 2, or 11 through 13 to this subpart.

(v) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.

(3) Complete a minimum of one cycle of CO and oxygen CEMS operation (sampling, analyzing, and data recording) for each successive 15-minute period. Collect CO and oxygen data concurrently. Collect at least four CO and oxygen CEMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CEMS calibration, quality assurance, or maintenance activities are being performed.

(4) Reduce the CO CEMS data as specified in § 63.8(g)(2).

(5) Calculate one-hour arithmetic averages, corrected to 3 percent oxygen from each hour of CO CEMS data in parts per million CO concentration. The one-hour arithmetic averages required shall be used to calculate the 30-day or 10-day rolling average emissions. Use Equation 19-19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A-7 for calculating the average CO concentration from the hourly values.

(6) For purposes of collecting CO data, operate the CO CEMS as specified in § 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in § 63.7535(c). Periods when CO data are unavailable may constitute monitoring deviations as specified in § 63.7535(d).

(7) Operate an oxygen trim system with the oxygen level set no lower than the lowest hourly average oxygen concentration measured during the most recent CO performance test as the operating limit for oxygen according to Table 7 to this subpart.

(b) If your boiler or process heater is in the unit designed to burn coal/solid fossil fuel subcategory or the unit designed to burn heavy liquid subcategory and has an average annual heat input rate greater than 250 MMBtu per hour from solid fossil fuel and/or heavy liquid, and you demonstrate compliance with the PM limit instead of the alternative TSM limit, you must install, certify, maintain, and operate a PM CPMS monitoring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (b)(1) through (4) of this section. As an alternative to use of a PM CPMS to demonstrate compliance with the PM limit, you may choose to use a PM CEMS. If you choose to use a PM CEMS to demonstrate compliance with the PM limit instead of the alternative TSM limit, you must install, certify, maintain, and operate a PM CEMS monitoring emissions discharged to the atmosphere and record the output of the system as specified in paragraph (b)(5) through (8) of this section. For other boilers or process heaters, you may elect to use a PM CPMS or PM CEMS operated in accordance with this section in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure). Owners of boilers and process heaters who elect to comply with the alternative TSM limit are not required to install a PM CPMS.

(1) Install, certify, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 63.7505(d), the requirements in § 63.7540(a)(9), and paragraphs (b)(1)(i) through (iii) of this section.

(i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation detection of PM in the exhaust gas or representative exhaust gas sample. The reportable measurement output from the PM CPMS must be expressed as milliamps.

(ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.

(iii) The PM CPMS must be capable of detecting and responding to PM concentrations of no greater than 0.5 milligram per actual cubic meter.

(2) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.

(3) Collect PM CPMS hourly average output data for all boiler or process heater operating hours except as indicated in § 63.7535(a) through (d). Express the PM CPMS output as milliamps.

(4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output data collected during all boiler or process heater operating hours (milliamps).

(5) Install, certify, operate, and maintain your PM CEMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 63.7505(d), the requirements in § 63.7540(a)(9), and paragraphs (b)(5)(i) through (iv) of this section.

(i) You shall conduct a performance evaluation of the PM CEMS according to the applicable requirements of § 60.8(e), and Performance Specification 11 at 40 CFR part 60, appendix B of this chapter.

(ii) During each PM correlation testing run of the CEMS required by Performance Specification 11 at 40 CFR part 60, appendix B of this chapter, you shall collect PM and oxygen (or carbon dioxide) data concurrently (or within a 30-to 60-minute period) by both the CEMS and conducting performance tests using Method 5 at 40 CFR part 60, appendix A-3 or Method 17 at 40 CFR part 60, appendix A-6 of this chapter.

(iii) You shall perform quarterly accuracy determinations and daily calibration drift tests in accordance with Procedure 2 at 40 CFR part 60, appendix F of this chapter. You must perform Relative Response Audits annually and perform Response Correlation Audits every 3 years.

(iv) Within 60 days after the date of completing each CEMS relative accuracy test audit or performance test conducted to demonstrate compliance with this subpart, you must submit the relative accuracy test audit data and performance test data to the EPA by successfully submitting the data electronically into the EPA's Central Data Exchange by using the Electronic Reporting Tool (see *http://www.epa.gov/ttn/chief/ert/erttool.html/*).

(6) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.

(7) Collect PM CEMS hourly average output data for all boiler or process heater operating hours except as indicated in § 63.7535(a) through (d).

(8) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CEMS output data collected during all boiler or process heater operating hours.

(c) If you have an applicable opacity operating limit in this rule, and are not otherwise required or elect to install and operate a PM CPMS, PM CEMS, or a bag leak detection system, you must install, operate, certify and maintain each COMS according to the procedures in paragraphs (c)(1) through (7) of this section by the compliance date specified in § 63.7495.

(1) Each COMS must be installed, operated, and maintained according to Performance Specification 1 at appendix B to part 60 of this chapter.

(2) You must conduct a performance evaluation of each COMS according to the requirements in § 63.8(e) and according to Performance Specification 1 at appendix B to part 60 of this chapter.

(3) As specified in § 63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(4) The COMS data must be reduced as specified in § 63.8(g)(2).

(5) You must include in your site-specific monitoring plan procedures and acceptance criteria for operating and maintaining each COMS according to the requirements in § 63.8(d). At a minimum, the monitoring plan must include a daily calibration drift assessment, a quarterly performance audit, and an annual zero alignment audit of each COMS.

(6) You must operate and maintain each COMS according to the requirements in the monitoring plan and the requirements of § 63.8(e). You must identify periods the COMS is out of control including any periods that the COMS fails to pass a daily calibration drift assessment, a quarterly performance audit, or an annual zero alignment audit. Any 6-minute period for which the monitoring system is out of control and data are not available for a required calculation constitutes a deviation from the monitoring requirements.

(7) You must determine and record all the 6-minute averages (and daily block averages as applicable) collected for periods during which the COMS is not out of control.

(d) If you have an operating limit that requires the use of a CMS other than a PM CPMS or COMS, you must install, operate, and maintain each CMS according to the procedures in paragraphs (d)(1) through (5) of this section by the compliance date specified in § 63.7495.

(1) The CPMS must complete a minimum of one cycle of operation every 15-minutes. You must have a minimum of four successive cycles of operation, one representing each of the four 15-minute periods in an hour, to have a valid hour of data.

(2) You must operate the monitoring system as specified in § 63.7535(b), and comply with the data calculation requirements specified in § 63.7535(c).

(3) Any 15-minute period for which the monitoring system is out-of-control and data are not available for a required calculation constitutes a deviation from the monitoring requirements. Other situations that constitute a monitoring deviation are specified in § 63.7535(d).

(4) You must determine the 30-day rolling average of all recorded readings, except as provided in § 63.7535(c).

(5) You must record the results of each inspection, calibration, and validation check.

(e) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (d) and (e)(1) through (4) of this section.

(1) You must install the flow sensor and other necessary equipment in a position that provides a representative flow.

(2) You must use a flow sensor with a measurement sensitivity of no greater than 2 percent of the design flow rate.

(3) You must minimize, consistent with good engineering practices, the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(4) You must conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(f) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (d) and (f)(1) through (6) of this section.

(1) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (*e.g.* , PM scrubber pressure drop).

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion consistent with good engineering practices.

(3) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.

(4) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (*e.g.* , check for pressure tap pluggage daily).

(5) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
(6) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in you monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.
(g) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (d) and (g)(1) through (4) of this section.
(1) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.
(2) Ensure the sample is properly mixed and representative of the fluid to be measured.
(3) Conduct a performance evaluation of the pH monitoring system in accordance with your monitoring plan at least once each process operating day.
(4) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than quarterly.
(h) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator (ESP) operated with a wet scrubber, you must meet the requirements in paragraphs (h)(1) and (2) of this section.
(1) Install sensors to measure (secondary) voltage and current to the precipitator collection plates.
(2) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
(i) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (e.g., weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (d) and (i)(1) through (2) of this section.
(1) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.
(2) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
(j) If you are not required to use a PM CPMS and elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate the bag leak detection system as specified in paragraphs (j)(1) through (6) of this section.
(1) You must install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute PM loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive pressure fabric filter) of the fabric filter.
(2) Conduct a performance evaluation of the bag leak detection system in accordance with your monitoring plan and consistent with the guidance provided in EPA-454/R-98-015 (incorporated by reference, see § 63.14).
(3) Use a bag leak detection system certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter or less.
(4) Use a bag leak detection system equipped with a device to record continuously the output signal from the sensor.
(5) Use a bag leak detection system equipped with a system that will alert plant operating personnel when an increase in relative PM emissions over a preset level is detected. The alert must easily recognizable (e.g., heard or seen) by plant operating personnel.
(6) Where multiple bag leak detectors are required, the system's instrumentation and alert may be shared among detectors.
(k) For each unit that meets the definition of limited-use boiler or process heater, you must keep fuel use records for the days the boiler or process heater was operating.
(l) For each unit for which you decide to demonstrate compliance with the mercury or HCl emissions limits in Tables 1 or 2 or 11 through 13 of this subpart by use of a CEMS for mercury or HCl, you must install, certify, maintain, and operate a CEMS measuring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (l)(1) through (8) of this section. For HCl, this option for an affected unit takes effect on the date a final performance specification for a HCl CEMS is published

in the Federal Register or the date of approval of a site-specific monitoring plan.
(1) Notify the Administrator one month before starting use of the CEMS, and notify the Administrator one month before stopping use of the CEMS.
(2) Each CEMS shall be installed, certified, operated, and maintained according to the requirements in § 63.7540(a)(14) for a mercury CEMS and § 63.7540(a)(15) for a HCl CEMS.
(3) For a new unit, you must complete the initial performance evaluation of the CEMS by the latest of the dates specified in paragraph (l)(3)(i) through (iii) of this section.
(i) No later than July 30, 2013.
(ii) No later 180 days after the date of initial startup.
(iii) No later 180 days after notifying the Administrator before starting to use the CEMS in place of performance testing or fuel analysis to demonstrate compliance.
(4) For an existing unit, you must complete the initial performance evaluation by the latter of the two dates specified in paragraph (l)(4)(i) and (ii) of this section.
(i) No later than July 29, 2016.
(ii) No later 180 days after notifying the Administrator before starting to use the CEMS in place of performance testing or fuel analysis to demonstrate compliance.
(5) Compliance with the applicable emissions limit shall be determined based on the 30-day rolling average of the hourly arithmetic average emissions rates using the continuous monitoring system outlet data. The 30-day rolling arithmetic average emission rate (lb/MMBtu) shall be calculated using the equations in EPA Reference Method 19 at 40 CFR part 60, appendix A-7, but substituting the mercury or HCl concentration for the pollutant concentrations normally used in Method 19.
(6) Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis. Collect at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.
(7) The one-hour arithmetic averages required shall be expressed in lb/MMBtu and shall be used to calculate the boiler 30-day and 10-day rolling average emissions.
(8) You are allowed to substitute the use of the PM, mercury or HCl CEMS for the applicable fuel analysis, annual performance test, and operating limits specified in Table 4 to this subpart to demonstrate compliance with the PM, mercury or HCl emissions limit, and if you are using an acid gas wet scrubber or dry sorbent injection control technology to comply with the HCl emission limit, you are allowed to substitute the use of a sulfur dioxide (SO_2) CEMS for the applicable fuel analysis, annual performance test, and operating limits specified in Table 4 to this subpart to demonstrate compliance with HCl emissions limit.
(m) If your unit is subject to a HCl emission limit in Tables 1, 2, or 11 through 13 of this subpart and you have an acid gas wet scrubber or dry sorbent injection control technology and you use an SO_2 CEMS, you must install the monitor at the outlet of the boiler or process heater, downstream of all emission control devices, and you must install, certify, operate, and maintain the CEMS according to part 75 of this chapter.
(1) The SO_2 CEMS must be installed by the compliance date specified in § 63.7495.
(2) For on-going quality assurance (QA), the SO_2 CEMS must meet the applicable daily, quarterly, and semiannual or annual requirements in sections 2.1 through 2.3 of appendix B to part 75 of this chapter, with the following addition: You must perform the linearity checks required in section 2.2 of appendix B to part 75 of this chapter if the SO_2 CEMS has a span value of 30 ppm or less.
(3) For a new unit, the initial performance evaluation shall be completed no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, the initial performance evaluation shall be completed no later than July 29, 2016.
(4) For purposes of collecting SO_2 data, you must operate the SO_2 CEMS as specified in § 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in § 63.7535(c). Periods when SO_2 data are unavailable may constitute monitoring deviations as specified in § 63.7535(d).
(5) Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis.
(6) Use only unadjusted, quality-assured SO_2 concentration values in the emissions calculations; do not apply bias adjustment factors to the part 75 SO_2 data and do not use part 75 substitute data values.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7171, Jan. 31, 2013]

§ 63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?

(a) You must demonstrate initial compliance with each emission limit that applies to you by conducting initial performance tests and fuel analyses and establishing operating limits, as applicable, according to § 63.7520, paragraphs (b) and (c) of this section, and Tables 5 and 7 to this subpart. The requirement to conduct a fuel analysis is not applicable for units that burn a single type of fuel, as specified by § 63.7510(a)(2)(i). If applicable, you must also install, operate, and maintain all applicable CMS (including CEMS, COMS, and CPMS) according to § 63.7525.

(b) If you demonstrate compliance through performance testing, you must establish each site-specific operating limit in Table 4 to this subpart that applies to you according to the requirements in § 63.7520, Table 7 to this subpart, and paragraph (b)(4) of this section, as applicable. You must also conduct fuel analyses according to § 63.7521 and establish maximum fuel pollutant input levels according to paragraphs (b)(1) through (3) of this section, as applicable, and as specified in § 63.7510(a)(2). (Note that § 63.7510(a)(2) exempts certain fuels from the fuel analysis requirements.) However, if you switch fuel(s) and cannot show that the new fuel(s) does (do) not increase the chlorine, mercury, or TSM input into the unit through the results of fuel analysis, then you must repeat the performance test to demonstrate compliance while burning the new fuel(s).

(1) You must establish the maximum chlorine fuel input (Clinput) during the initial fuel analysis according to the procedures in paragraphs (b)(1)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of chlorine.

(ii) During the fuel analysis for hydrogen chloride, you must determine the fraction of the total heat input for each fuel type burned (Qi) based on the fuel mixture that has the highest content of chlorine, and the average chlorine concentration of each fuel type burned (Ci).

(iii) You must establish a maximum chlorine input level using Equation 7 of this section.

$$Clinput = \sum_{i=1}^{n} (Ci \times Qi) \quad \text{(Eq. 7)}$$

Where:

Clinput = Maximum amount of chlorine entering the boiler or process heater through fuels burned in units of pounds per million Btu.

Ci = Arithmetic average concentration of chlorine in fuel type, i, analyzed according to § 63.7521, in units of pounds per million Btu.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

(2) You must establish the maximum mercury fuel input level (Mercuryinput) during the initial fuel analysis using the procedures in paragraphs (b)(2)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of mercury.

(ii) During the compliance demonstration for mercury, you must determine the fraction of total heat input for each fuel burned (Qi) based on the fuel mixture that has the highest content of mercury, and the average mercury concentration of each fuel type burned (HGi).

(iii) You must establish a maximum mercury input level using Equation 8 of this section.

$$Mercuryinput = \sum_{i=1}^{n} (HGi \times Qi) \quad \text{(Eq. 8)}$$

Where:

Mercuryinput = Maximum amount of mercury entering the boiler or process heater through fuels burned in units of pounds per million Btu.

HGi = Arithmetic average concentration of mercury in fuel type, i, analyzed according to § 63.7521, in units of pounds per million Btu.
Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If you do not burn multiple fuel types during the performance test, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.
n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of mercury.
(3) If you opt to comply with the alternative TSM limit, you must establish the maximum TSM fuel input (TSMinput) for solid or liquid fuels during the initial fuel analysis according to the procedures in paragraphs (b)(3)(i) through (iii) of this section.
(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of TSM.
(ii) During the fuel analysis for TSM, you must determine the fraction of the total heat input for each fuel type burned (Qi) based on the fuel mixture that has the highest content of TSM, and the average TSM concentration of each fuel type burned (TSMi).
(iii) You must establish a maximum TSM input level using Equation 9 of this section.

$$TSMinput = \sum_{i=1}^{n} (TSMi \times Qi) \quad \text{(Eq. 9)}$$

Where:
TSMinput = Maximum amount of TSM entering the boiler or process heater through fuels burned in units of pounds per million Btu.
TSMi = Arithmetic average concentration of TSM in fuel type, i, analyzed according to § 63.7521, in units of pounds per million Btu.
Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of TSM. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.
n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of TSM.
(4) You must establish parameter operating limits according to paragraphs (b)(4)(i) through (ix) of this section. As indicated in Table 4 to this subpart, you are not required to establish and comply with the operating parameter limits when you are using a CEMS to monitor and demonstrate compliance with the applicable emission limit for that control device parameter.
(i) For a wet acid gas scrubber, you must establish the minimum scrubber effluent pH and liquid flow rate as defined in § 63.7575, as your operating limits during the performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for HCl and mercury emissions, you must establish one set of minimum scrubber effluent pH, liquid flow rate, and pressure drop operating limits. The minimum scrubber effluent pH operating limit must be established during the HCl performance test. If you conduct multiple performance tests, you must set the minimum liquid flow rate operating limit at the higher of the minimum values established during the performance tests.
(ii) For any particulate control device (e.g., ESP, particulate wet scrubber, fabric filter) for which you use a PM CPMS, you must establish your PM CPMS operating limit and determine compliance with it according to paragraphs (b)(4)(ii)(A) through (F) of this section.
(A) Determine your operating limit as the average PM CPMS output value recorded during the most recent performance test run demonstrating compliance with the filterable PM emission limit or at the PM CPMS output value corresponding to 75 percent of the emission limit if your PM performance test demonstrates compliance below 75 percent of the emission limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.
(*1*) Your PM CPMS must provide a 4-20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps.
(*2*) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level

equivalent to at least two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit.

(*3*) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all your PM CPMS output values for three corresponding 2-hour Method 5I test runs).

(B) If the average of your three PM performance test runs are below 75 percent of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or performance test with the procedures in paragraphs (b)(4)(ii)(B)(*1*) through (*4*) of this section.

(*1*) Determine your instrument zero output with one of the following procedures:

(*i*) Zero point data for *in-situ* instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(*ii*) Zero point data for *extractive* instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(*iii*) The zero point may also be established by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (e.g., when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(*iv*) If none of the steps in paragraphs (b)(4)(ii)(B)(*1*)(*i*) through (*iii*) of this section are possible, you must use a zero output value provided by the manufacturer.

(*2*) Determine your PM CPMS instrument average in milliamps, and the average of your corresponding three PM compliance test runs, using equation 10.

$$\overline{X} = \frac{1}{n}\sum_{i=1}^{n} X_1, \overline{Y} = \frac{1}{n}\sum_{i=1}^{n} Y_1 \qquad \text{(Eq. 10)}$$

Where:

X_1 = the PM CPMS data points for the three runs constituting the performance test,

Y_1 = the PM concentration value for the three runs constituting the performance test, and

n = the number of data points.

(*3*) With your instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM concentration from your three compliance tests, determine a relationship of lb/MMBtu per milliamp with equation 11.

$$R = \frac{Y_1}{(X_1 - z)} \qquad \text{(Eq. 11)}$$

Where:

R = the relative lb/MMBtu per milliamp for your PM CPMS,

Y_1 = the three run average lb/MMBtu PM concentration,

X_1 = the three run average milliamp output from you PM CPMS, and

z = the milliamp equivalent of your instrument zero determined from (B)(i).

(*4*) Determine your source specific 30-day rolling average operating limit using the lb/MMBtu per milliamp value from Equation 11 in equation 12, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit.

$$O_l = z + \frac{0.75(L)}{R} \qquad \text{(Eq. 12)}$$

Where:

O_l = the operating limit for your PM CPMS on a 30-day rolling average, in milliamps.

L = your source emission limit expressed in lb/MMBtu,

z = your instrument zero in milliamps, determined from (B)(i), and

R = the relative lb/MMBtu per milliamp for your PM CPMS, from Equation 11.

(C) If the average of your three PM compliance test runs is at or above 75 percent of your PM emission limit you must determine your 30-day rolling average operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using equation 13 and you must submit all compliance test and PM CPMS data according to the reporting requirements in paragraph (b)(4)(ii)(F) of this section.

$$O_h = \frac{1}{n}\sum_{i=1}^{n} X_1 \qquad \text{(Eq. 13)}$$

Where:
X_1 = the PM CPMS data points for all runs i,
n = the number of data points, and
O_h = your site specific operating limit, in milliamps.
(D) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30-day rolling average basis, updated at the end of each new operating hour. Use Equation 14 to determine the 30-day rolling average.

$$30-\mathrm{day} = \frac{\sum_{i=1}^{n} Hpvi}{n} \qquad \text{(Eq. 14)}$$

Where:
30-day = 30-day average.
Hpvi = is the hourly parameter value for hour i
n = is the number of valid hourly parameter values collected over the previous 720 operating hours.
(E) Use EPA Method 5 of appendix A to part 60 of this chapter to determine PM emissions. For each performance test, conduct three separate runs under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur. Conduct each test run to collect a minimum sample volume specified in Tables 1, 2, or 11 through 13 to this subpart, as applicable, for determining compliance with a new source limit or an existing source limit. Calculate the average of the results from three runs to determine compliance. You need not determine the PM collected in the impingers (“back half”) of the Method 5 particulate sampling train to demonstrate compliance with the PM standards of this subpart. This shall not preclude the permitting authority from requiring a determination of the “back half” for other purposes.
(F) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.
(iii) For a particulate wet scrubber, you must establish the minimum pressure drop and liquid flow rate as defined in § 63.7575, as your operating limits during the three-run performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for PM and TSM emissions, you must establish one set of minimum scrubber liquid flow rate and pressure drop operating limits. The minimum scrubber effluent pH operating limit must be established during the HCl performance test. If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests.
(iii) For an electrostatic precipitator (ESP) operated with a wet scrubber, you must establish the minimum total secondary electric power input, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit. (These operating limits do not apply to ESP that are operated as dry controls without a wet scrubber.)
(iv) For a dry scrubber, you must establish the minimum sorbent injection rate for each sorbent, as

defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit.

(v) For activated carbon injection, you must establish the minimum activated carbon injection rate, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit.

(vi) The operating limit for boilers or process heaters with fabric filters that demonstrate continuous compliance through bag leak detection systems is that a bag leak detection system be installed according to the requirements in § 63.7525, and that each fabric filter must be operated such that the bag leak detection system alert is not activated more than 5 percent of the operating time during a 6-month period.

(vii) For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests.

(viii) The operating limit for boilers or process heaters that demonstrate continuous compliance with the HCl emission limit using a SO_2 CEMS is to install and operate the SO_2 according to the requirements in § 63.7525(m) establish a maximum SO_2 emission rate equal to the highest hourly average SO_2 measurement during the most recent three-run performance test for HCl.

(c) If you elect to demonstrate compliance with an applicable emission limit through fuel analysis, you must conduct fuel analyses according to § 63.7521 and follow the procedures in paragraphs (c)(1) through (5) of this section.

(1) If you burn more than one fuel type, you must determine the fuel mixture you could burn in your boiler or process heater that would result in the maximum emission rates of the pollutants that you elect to demonstrate compliance through fuel analysis.

(2) You must determine the 90th percentile confidence level fuel pollutant concentration of the composite samples analyzed for each fuel type using the one-sided t-statistic test described in Equation 15 of this section.

$$P90 = mean + (SD \times t) \quad \text{(Eq. 15)}$$

Where:

P90 = 90th percentile confidence level pollutant concentration, in pounds per million Btu.

Mean = Arithmetic average of the fuel pollutant concentration in the fuel samples analyzed according to § 63.7521, in units of pounds per million Btu.

SD = Standard deviation of the mean of pollutant concentration in the fuel samples analyzed according to § 63.7521, in units of pounds per million Btu. SD is calculated as the sample standard deviation divided by the square root of the number of samples.

t = t distribution critical value for 90th percentile ($t_{0.1}$) probability for the appropriate degrees of freedom (number of samples minus one) as obtained from a t-Distribution Critical Value Table.

(3) To demonstrate compliance with the applicable emission limit for HCl, the HCl emission rate that you calculate for your boiler or process heater using Equation 16 of this section must not exceed the applicable emission limit for HCl.

$$HCl = \sum_{i=1}^{n} (Ci90 \times Qi \times 1.028) \quad \text{(Eq. 16)}$$

Where:

HCl = HCl emission rate from the boiler or process heater in units of pounds per million Btu.

Ci90 = 90th percentile confidence level concentration of chlorine in fuel type, i, in units of pounds per million Btu as calculated according to Equation 11 of this section.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

1.028 = Molecular weight ratio of HCl to chlorine.

(4) To demonstrate compliance with the applicable emission limit for mercury, the mercury emission rate that you calculate for your boiler or process heater using Equation 17 of this section must not exceed the applicable emission limit for mercury.

$$Mercury = \sum_{i=1}^{n} \left(Hgi90 \times Qi\right) \quad \text{(Eq. 17)}$$

Where:
Mercury = Mercury emission rate from the boiler or process heater in units of pounds per million Btu.
Hgi90 = 90th percentile confidence level concentration of mercury in fuel, i, in units of pounds per million Btu as calculated according to Equation 11 of this section.
Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.
n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest mercury content.
(5) To demonstrate compliance with the applicable emission limit for TSM for solid or liquid fuels, the TSM emission rate that you calculate for your boiler or process heater from solid fuels using Equation 18 of this section must not exceed the applicable emission limit for TSM.

$$Metals = \sum_{i=1}^{n} \left(TSM90i \times Qi\right) \quad \text{(Eq. 18)}$$

Where:
Metals = TSM emission rate from the boiler or process heater in units of pounds per million Btu.
TSMi90 = 90th percentile confidence level concentration of TSM in fuel, i, in units of pounds per million Btu as calculated according to Equation 11 of this section.
Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest TSM content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.
n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest TSM content.
(d) If you own or operate an existing unit with a heat input capacity of less than 10 million Btu per hour or a unit in the unit designed to burn gas 1 subcategory, you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted a tune-up of the unit.
(e) You must include with the Notification of Compliance Status a signed certification that the energy assessment was completed according to Table 3 to this subpart and is an accurate depiction of your facility at the time of the assessment.
(f) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.7545(e).
(g) If you elect to demonstrate that a gaseous fuel meets the specifications of another gas 1 fuel as defined in § 63.7575, you must conduct an initial fuel specification analyses according to § 63.7521(f) through (i) and according to the frequency listed in § 63.7540(c) and maintain records of the results of the testing as outlined in § 63.7555(g). For samples where the initial mercury specification has not been exceeded, you will include a signed certification with the Notification of Compliance Status that the initial fuel specification test meets the gas specification outlined in the definition of other gas 1 fuels.
(h) If you own or operate a unit subject to emission limits in Tables 1 or 2 or 11 through 13 to this subpart, you must meet the work practice standard according to Table 3 of this subpart. During startup and shutdown, you must only follow the work practice standards according to item 5 of Table 3 of this subpart.
(i) If you opt to comply with the alternative SO_2 CEMS operating limit in Tables 4 and 8 to this subpart, you may do so only if your affected boiler or process heater:
(1) Has a system using wet scrubber or dry sorbent injection and SO_2 CEMS installed on the unit; and
(2) At all times, you operate the wet scrubber or dry sorbent injection for acid gas control on the unit consistent with § 63.7500(a)(3); and
(3) You establish a unit-specific maximum SO_2 operating limit by collecting the minimum hourly SO_2 emission rate on the SO_2 CEMS during the paired 3-run test for HCl. The maximum SO_2 operating limit is equal to the highest hourly average SO_2 concentration measured during the most recent HCl performance test.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7174, Jan. 31, 2013]

§ 63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?

(a) If you elect to comply with the alternative equivalent output-based emission limits, instead of the heat input-based limits listed in Table 2 to this subpart, and you want to take credit for implementing energy conservation measures identified in an energy assessment, you may demonstrate compliance using efficiency credits according to the procedures in this section. You may use this compliance approach for an existing affected boiler for demonstrating initial compliance according to § 63.7522(e) and for demonstrating monthly compliance according to § 63.7522(f). Owners or operators using this compliance approach must establish an emissions benchmark, calculate and document the efficiency credits, develop an Implementation Plan, comply with the general reporting requirements, and apply the efficiency credit according to the procedures in paragraphs (b) through (f) of this section. You cannot use this compliance approach for a new or reconstructed affected boiler. Additional guidance from the Department of Energy on efficiency credits is available at: *http://www.epa.gov/ttn/atw/boiler/boilerpg.html* .

(b) For each existing affected boiler for which you intend to apply emissions credits, establish a benchmark from which emission reduction credits may be generated by determining the actual annual fuel heat input to the affected boiler before initiation of an energy conservation activity to reduce energy demand (*i.e.,* fuel usage) according to paragraphs (b)(1) through (4) of this section. The benchmark shall be expressed in trillion Btu per year heat input.

(1) The benchmark from which efficiency credits may be generated shall be determined by using the most representative, accurate, and reliable process available for the source. The benchmark shall be established for a one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations.

(2) Determine the starting point from which to measure progress. Inventory all fuel purchased and generated on-site (off-gases, residues) in physical units (MMBtu, million cubic feet, etc.).

(3) Document all uses of energy from the affected boiler. Use the most recent data available.

(4) Collect non-energy related facility and operational data to normalize, if necessary, the benchmark to current operations, such as building size, operating hours, etc. If possible, use actual data that are current and timely rather than estimated data.

(c) Efficiency credits can be generated if the energy conservation measures were implemented after January 1, 2008 and if sufficient information is available to determine the appropriate value of credits.

(1) The following emission points cannot be used to generate efficiency credits:

(i) Energy conservation measures implemented on or before January 1, 2008, unless the level of energy demand reduction is increased after January 1, 2008, in which case credit will be allowed only for change in demand reduction achieved after January 1, 2008.

(ii) Efficiency credits on shut-down boilers. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to energy conservation measures identified in the energy assessment. In this case, the bench established for the affected boiler to which the credits from the shutdown will be applied must be revised to include the benchmark established for the shutdown boiler.

(2) For all points included in calculating emissions credits, the owner or operator shall:

(i) Calculate annual credits for all energy demand points. Use Equation 19 to calculate credits. Energy conservation measures that meet the criteria of paragraph (c)(1) of this section shall not be included, except as specified in paragraph (c)(1)(i) of this section.

(3) Credits are generated by the difference between the benchmark that is established for each affected boiler, and the actual energy demand reductions from energy conservation measures implemented after January 1, 2008. Credits shall be calculated using Equation 19 of this section as follows:

(i) The overall equation for calculating credits is:

$$ECredits = \left(\sum_{i=1}^{n} EIS_{iactual} \right) \div EI_{baseline} \qquad \text{(Eq. 19)}$$

Where:

ECredits = Energy Input Savings for all energy conservation measures implemented for an affected

boiler, expressed as a decimal fraction of the baseline energy input.
$EIS_{iactual}$ = Energy Input Savings for each energy conservation measure, i, implemented for an affected boiler, million Btu per year.
$EI_{baseline}$ = Energy Input baseline for the affected boiler, million Btu per year.
n = Number of energy conservation measures included in the efficiency credit for the affected boiler.
(ii) [Reserved]
(d) The owner or operator shall develop, and submit for approval upon request by the Administrator, an Implementation Plan containing all of the information required in this paragraph for all boilers to be included in an efficiency credit approach. The Implementation Plan shall identify all existing affected boilers to be included in applying the efficiency credits. The Implementation Plan shall include a description of the energy conservation measures implemented and the energy savings generated from each measure and an explanation of the criteria used for determining that savings. If requested, you must submit the implementation plan for efficiency credits to the Administrator for review and approval no later than 180 days before the date on which the facility intends to demonstrate compliance using the efficiency credit approach.
(e) The emissions rate as calculated using Equation 20 of this section from each existing boiler participating in the efficiency credit option must be in compliance with the limits in Table 2 to this subpart at all times the affected unit is operating, following the compliance date specified in § 63.7495.
(f) You must use Equation 20 of this section to demonstrate initial compliance by demonstrating that the emissions from the affected boiler participating in the efficiency credit compliance approach do not exceed the emission limits in Table 2 to this subpart.

$$E_{adj} = E_m \times (1 - ECredits) \quad \text{(Eq. 20)}$$

Where:
E_{adj} = Emission level adjusted by applying the efficiency credits earned, lb per million Btu steam output (or lb per MWh) for the affected boiler.
E_m = Emissions measured during the performance test, lb per million Btu steam output (or lb per MWh) for the affected boiler.
ECredits = Efficiency credits from Equation 19 for the affected boiler.
(g) As part of each compliance report submitted as required under § 63.7550, you must include documentation that the energy conservation measures implemented continue to generate the credit for use in demonstrating compliance with the emission limits.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7178, Jan. 21, 2013]

Continuous Compliance Requirements

§ 63.7535 Is there a minimum amount of monitoring data I must obtain?
(a) You must monitor and collect data according to this section and the site-specific monitoring plan required by § 63.7505(d).
(b) You must operate the monitoring system and collect data at all required intervals at all times that each boiler or process heater is operating and compliance is required, except for periods of monitoring system malfunctions or out of control periods (see § 63.8(c)(7) of this part), and required monitoring system quality assurance or control activities, including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.
(c) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in data averages and calculations used to report emissions or operating levels. You must record and make available upon request results of CMS performance audits and dates and duration of periods when the CMS is out of control to completion of the corrective actions

necessary to return the CMS to operation consistent with your site-specific monitoring plan. You must use all the data collected during all other periods in assessing compliance and the operation of the control device and associated control system.

(d) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits, calibration checks, and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. In calculating monitoring results, do not use any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities. You must calculate monitoring results using all other monitoring data collected while the process is operating. You must report all periods when the monitoring system is out of control in your annual report.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7179, Jan. 31, 2013]

§ 63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit in Tables 1 and 2 or 11 through 13 to this subpart, the work practice standards in Table 3 to this subpart, and the operating limits in Table 4 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (19) of this section.

(1) Following the date on which the initial compliance demonstration is completed or is required to be completed under §§ 63.7 and 63.7510, whichever date comes first, operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits listed in Table 4 of this subpart except during performance tests conducted to determine compliance with the emission limits or to establish new operating limits. Operating limits must be confirmed or reestablished during performance tests.

(2) As specified in § 63.7550(c), you must keep records of the type and amount of all fuels burned in each boiler or process heater during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in either of the following:

(i) Lower emissions of HCl, mercury, and TSM than the applicable emission limit for each pollutant, if you demonstrate compliance through fuel analysis.

(ii) Lower fuel input of chlorine, mercury, and TSM than the maximum values calculated during the last performance test, if you demonstrate compliance through performance testing.

(3) If you demonstrate compliance with an applicable HCl emission limit through fuel analysis for a solid or liquid fuel and you plan to burn a new type of solid or liquid fuel, you must recalculate the HCl emission rate using Equation 12 of § 63.7530 according to paragraphs (a)(3)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the HCl emission rate.

(i) You must determine the chlorine concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of chlorine.

(iii) Recalculate the HCl emission rate from your boiler or process heater under these new conditions using Equation 12 of § 63.7530. The recalculated HCl emission rate must be less than the applicable emission limit.

(4) If you demonstrate compliance with an applicable HCl emission limit through performance testing and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum chlorine input using Equation 7 of § 63.7530. If the results of recalculating the maximum chlorine input using Equation 7 of § 63.7530 are greater than the maximum chlorine input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the HCl emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). In recalculating the maximum chlorine

input and establishing the new operating limits, you are not required to conduct fuel analyses for and include the fuels described in § 63.7510(a)(2)(i) through (iii).
(5) If you demonstrate compliance with an applicable mercury emission limit through fuel analysis, and you plan to burn a new type of fuel, you must recalculate the mercury emission rate using Equation 13 of § 63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate.
(i) You must determine the mercury concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).
(ii) You must determine the new mixture of fuels that will have the highest content of mercury.
(iii) Recalculate the mercury emission rate from your boiler or process heater under these new conditions using Equation 13 of § 63.7530. The recalculated mercury emission rate must be less than the applicable emission limit.
(6) If you demonstrate compliance with an applicable mercury emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum mercury input using Equation 8 of § 63.7530. If the results of recalculating the maximum mercury input using Equation 8 of § 63.7530 are higher than the maximum mercury input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the mercury emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate.
(7) If your unit is controlled with a fabric filter, and you demonstrate continuous compliance using a bag leak detection system, you must initiate corrective action within 1 hour of a bag leak detection system alert and complete corrective actions as soon as practical, and operate and maintain the fabric filter system such that the periods which would cause an alert are no more than 5 percent of the operating time during a 6-month period. You must also keep records of the date, time, and duration of each alert, the time corrective action was initiated and completed, and a brief description of the cause of the alert and the corrective action taken. You must also record the percent of the operating time during each 6-month period that the conditions exist for an alert. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alert time is counted. If corrective action is required, each alert shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alert time shall be counted as the actual amount of time taken to initiate corrective action.
(8) To demonstrate compliance with the applicable alternative CO CEMS emission limit listed in Tables 1, 2, or 11 through 13 to this subpart, you must meet the requirements in paragraphs (a)(8)(i) through (iv) of this section.
(i) Continuously monitor CO according to §§ 63.7525(a) and 63.7535.
(ii) Maintain a CO emission level below or at your applicable alternative CO CEMS-based standard in Tables 1 or 2 or 11 through 13 to this subpart at all times the affected unit is operating.
(iii) Keep records of CO levels according to § 63.7555(b).
(iv) You must record and make available upon request results of CO CEMS performance audits, dates and duration of periods when the CO CEMS is out of control to completion of the corrective actions necessary to return the CO CEMS to operation consistent with your site-specific monitoring plan.
(9) The owner or operator of a boiler or process heater using a PM CPMS or a PM CEMS to meet requirements of this subpart shall install, certify, operate, and maintain the PM CPMS or PM CEMS in accordance with your site-specific monitoring plan as required in § 63.7505(d).
(10) If your boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, you must conduct an annual tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of this section. This frequency does not apply to limited-use boilers and process heaters, as defined in § 63.7575, or units with continuous oxygen trim systems that

maintain an optimum air to fuel ratio.

(i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection;

(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject;

(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and

(vi) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (a)(10)(vi)(A) through (C) of this section,

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(11) If your boiler or process heater has a heat input capacity of less than 10 million Btu per hour (except as specified in paragraph (a)(12) of this section), you must conduct a biennial tune-up of the boiler or process heater as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance.

(12) If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid subcategories, or meets the definition of limited-use boiler or process heater in § 63.7575, you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. You may delay the burner inspection specified in paragraph (a)(10)(i) of this section until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months.

(13) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

(14) If you are using a CEMS measuring mercury emissions to meet requirements of this subpart you must install, certify, operate, and maintain the mercury CEMS as specified in paragraphs (a)(14)(i) and (ii) of this section.

(i) Operate the mercury CEMS in accordance with performance specification 12A of 40 CFR part 60, appendix B or operate a sorbent trap based integrated monitor in accordance with performance specification 12B of 40 CFR part 60, appendix B. The duration of the performance test must be the maximum of 30 unit operating days or 720 hours. For each day in which the unit operates, you must obtain hourly mercury concentration data, and stack gas volumetric flow rate data.

(ii) If you are using a mercury CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the mercury mass emissions rate to the atmosphere according to the requirements of performance specifications 6 and 12A of 40 CFR part 60, appendix B, and quality assurance procedure 6 of 40 CFR part 60, appendix F.

(15) If you are using a CEMS to measure HCl emissions to meet requirements of this subpart, you must install, certify, operate, and maintain the HCl CEMS as specified in paragraphs (a)(15)(i) and (ii) of this section. This option for an affected unit takes effect on the date a final performance specification for an HCl CEMS is published in the Federal Register or the date of approval of a site-specific monitoring plan.
(i) Operate the continuous emissions monitoring system in accordance with the applicable performance specification in 40 CFR part 60, appendix B. The duration of the performance test must be the maximum of 30 unit operating days or 720 hours. For each day in which the unit operates, you must obtain hourly HCl concentration data, and stack gas volumetric flow rate data.
(ii) If you are using a HCl CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the HCl mass emissions rate to the atmosphere according to the requirements of the applicable performance specification of 40 CFR part 60, appendix B, and the quality assurance procedures of 40 CFR part 60, appendix F.
(16) If you demonstrate compliance with an applicable TSM emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum TSM input using Equation 9 of § 63.7530. If the results of recalculating the maximum TSM input using Equation 9 of § 63.7530 are higher than the maximum total selected input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the TSM emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the TSM emission rate.
(17) If you demonstrate compliance with an applicable TSM emission limit through fuel analysis for solid or liquid fuels, and you plan to burn a new type of fuel, you must recalculate the TSM emission rate using Equation 14 of § 63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the TSM emission rate.
(i) You must determine the TSM concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).
(ii) You must determine the new mixture of fuels that will have the highest content of TSM.
(iii) Recalculate the TSM emission rate from your boiler or process heater under these new conditions using Equation 14 of § 63.7530. The recalculated TSM emission rate must be less than the applicable emission limit.
(18) If you demonstrate continuous PM emissions compliance with a PM CPMS you will use a PM CPMS to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. You will conduct your performance test using the test method criteria in Table 5 of this subpart. You will use the PM CPMS to demonstrate continuous compliance with this operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.
(i) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30-day rolling average basis, updated at the end of each new boiler or process heater operating hour.
(ii) For any deviation of the 30-day rolling PM CPMS average value from the established operating parameter limit, you must:
(A) Within 48 hours of the deviation, visually inspect the air pollution control device (APCD);
(B) If inspection of the APCD identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
(C) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the CPMS operating limit. You are not required to conduct additional testing for any

deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.
(iii) PM CPMS deviations from the operating limit leading to more than four required performance tests in a 12-month operating period constitute a separate violation of this subpart.
(19) If you choose to comply with the PM filterable emissions limit by using PM CEMS you must install, certify, operate, and maintain a PM CEMS and record the output of the PM CEMS as specified in paragraphs (a)(19)(i) through (vii) of this section. The compliance limit will be expressed as a 30-day rolling average of the numerical emissions limit value applicable for your unit in Tables 1 or 2 or 11 through 13 of this subpart.
(i) Install and certify your PM CEMS according to the procedures and requirements in Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix B to part 60 of this chapter, using test criteria outlined in Table V of this rule. The reportable measurement output from the PM CEMS must be expressed in units of the applicable emissions limit (e.g., lb/MMBtu, lb/MWh).
(ii) Operate and maintain your PM CEMS according to the procedures and requirements in Procedure 2—Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix F to part 60 of this chapter.
(A) You must conduct the relative response audit (RRA) for your PM CEMS at least once annually.
(B) You must conduct the relative correlation audit (RCA) for your PM CEMS at least once every 3 years.
(iii) Collect PM CEMS hourly average output data for all boiler operating hours except as indicated in paragraph (i) of this section.
(iv) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CEMS output data collected during all nonexempt boiler or process heater operating hours.
(v) You must collect data using the PM CEMS at all times the unit is operating and at the intervals specified this paragraph (a), except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities.
(vi) You must use all the data collected during all boiler or process heater operating hours in assessing the compliance with your operating limit except:
(A) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities conducted during monitoring system malfunctions in calculations and report any such periods in your annual deviation report;
(B) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or control activities conducted during out of control periods in calculations used to report emissions or operating levels and report any such periods in your annual deviation report;
(C) Any data recorded during periods of startup or shutdown.
(vii) You must record and make available upon request results of PM CEMS system performance audits, dates and duration of periods when the PM CEMS is out of control to completion of the corrective actions necessary to return the PM CEMS to operation consistent with your site-specific monitoring plan.
(b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 13 to this subpart that apply to you. These instances are deviations from the emission limits or operating limits, respectively, in this subpart. These deviations must be reported according to the requirements in § 63.7550.
(c) If you elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, you must follow the sampling frequency specified in paragraphs (c)(1) through (4) of this section and conduct this sampling according to the procedures in § 63.7521(f) through (i).
(1) If the initial mercury constituents in the gaseous fuels are measured to be equal to or less than half of the mercury specification as defined in § 63.7575, you do not need to conduct further sampling.
(2) If the initial mercury constituents are greater than half but equal to or less than 75 percent of the mercury specification as defined in § 63.7575, you will conduct semi-annual sampling. If 6 consecutive semi-annual fuel analyses demonstrate 50 percent or less of the mercury specification, you do not need

to conduct further sampling. If any semi-annual sample exceeds 75 percent of the mercury specification, you must return to monthly sampling for that fuel, until 12 months of fuel analyses again are less than 75 percent of the compliance level.
(3) If the initial mercury constituents are greater than 75 percent of the mercury specification as defined in § 63.7575, you will conduct monthly sampling. If 12 consecutive monthly fuel analyses demonstrate 75 percent or less of the mercury specification, you may decrease the fuel analysis frequency to semi-annual for that fuel.
(4) If the initial sample exceeds the mercury specification as defined in § 63.7575, each affected boiler or process heater combusting this fuel is not part of the unit designed to burn gas 1 subcategory and must be in compliance with the emission and operating limits for the appropriate subcategory. You may elect to conduct additional monthly sampling while complying with these emissions and operating limits to demonstrate that the fuel qualifies as another gas 1 fuel. If 12 consecutive monthly fuel analyses samples are at or below the mercury specification as defined in § 63.7575, each affected boiler or process heater combusting the fuel can elect to switch back into the unit designed to burn gas 1 subcategory until the mercury specification is exceeded.
(d) For startup and shutdown, you must meet the work practice standards according to item 5 of Table 3 of this subpart.
[78 FR 7179, Jan. 31, 2013]

§ 63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?
(a) Following the compliance date, the owner or operator must demonstrate compliance with this subpart on a continuous basis by meeting the requirements of paragraphs (a)(1) through (5) of this section.
(1) For each calendar month, demonstrate compliance with the average weighted emissions limit for the existing units participating in the emissions averaging option as determined in § 63.7522(f) and (g).
(2) You must maintain the applicable opacity limit according to paragraphs (a)(2)(i) and (ii) of this section.
(i) For each existing unit participating in the emissions averaging option that is equipped with a dry control system and not vented to a common stack, maintain opacity at or below the applicable limit.
(ii) For each group of units participating in the emissions averaging option where each unit in the group is equipped with a dry control system and vented to a common stack that does not receive emissions from non-affected units, maintain opacity at or below the applicable limit at the common stack.
(3) For each existing unit participating in the emissions averaging option that is equipped with a wet scrubber, maintain the 30-day rolling average parameter values at or above the operating limits established during the most recent performance test.
(4) For each existing unit participating in the emissions averaging option that has an approved alternative operating parameter, maintain the 30-day rolling average parameter values consistent with the approved monitoring plan.
(5) For each existing unit participating in the emissions averaging option venting to a common stack configuration containing affected units from other subcategories, maintain the appropriate operating limit for each unit as specified in Table 4 to this subpart that applies.
(b) Any instance where the owner or operator fails to comply with the continuous monitoring requirements in paragraphs (a)(1) through (5) of this section is a deviation.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7182, Jan. 31, 2013]

Notification, Reports, and Records

§ 63.7545 What notifications must I submit and when?
(a) You must submit to the Administrator all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply to you by the dates specified.
(b) As specified in § 63.9(b)(2), if you startup your affected source before January 31, 2013, you must submit an Initial Notification not later than 120 days after January 31, 2013.
(c) As specified in § 63.9(b)(4) and (5), if you startup your new or reconstructed affected source on or after January 31, 2013, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source.

(d) If you are required to conduct a performance test you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.
(e) If you are required to conduct an initial compliance demonstration as specified in § 63.7530, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii). For the initial compliance demonstration for each boiler or process heater, you must submit the Notification of Compliance Status, including all performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for all boiler or process heaters at the facility according to § 63.10(d)(2). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (8), as applicable. If you are not required to conduct an initial compliance demonstration as specified in § 63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8).
(1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under § 241.3 of this chapter, whether the fuel(s) were a secondary material processed from discarded non-hazardous secondary materials within the meaning of § 241.3 of this chapter, and justification for the selection of fuel(s) burned during the compliance demonstration.
(2) Summary of the results of all performance tests and fuel analyses, and calculations conducted to demonstrate initial compliance including all established operating limits, and including:
(i) Identification of whether you are complying with the PM emission limit or the alternative TSM emission limit.
(ii) Identification of whether you are complying with the output-based emission limits or the heat input-based (i.e., lb/MMBtu or ppm) emission limits,
(3) A summary of the maximum CO emission levels recorded during the performance test to show that you have met any applicable emission standard in Tables 1, 2, or 11 through 13 to this subpart, if you are not using a CO CEMS to demonstrate compliance.
(4) Identification of whether you plan to demonstrate compliance with each applicable emission limit through performance testing, a CEMS, or fuel analysis.
(5) Identification of whether you plan to demonstrate compliance by emissions averaging and identification of whether you plan to demonstrate compliance by using efficiency credits through energy conservation:
(i) If you plan to demonstrate compliance by emission averaging, report the emission level that was being achieved or the control technology employed on January 31, 2013.
(ii) [Reserved]
(6) A signed certification that you have met all applicable emission limits and work practice standards.
(7) If you had a deviation from any emission limit, work practice standard, or operating limit, you must also submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.
(8) In addition to the information required in § 63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official:
(i) “This facility complies with the required initial tune-up according to the procedures in § 63.7540(a)(10)(i) through (vi).”
(ii) “This facility has had an energy assessment performed according to § 63.7530(e).”
(iii) Except for units that burn only natural gas, refinery gas, or other gas 1 fuel, or units that qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act, include the following: “No secondary materials that are solid waste were combusted in any affected unit.”
(f) If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to this subpart, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575. The notification must include the information specified in paragraphs (f)(1) through (5) of this section.

(1) Company name and address.
(2) Identification of the affected unit.
(3) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.
(4) Type of alternative fuel that you intend to use.
(5) Dates when the alternative fuel use is expected to begin and end.
(g) If you intend to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste. The notification must identify:
(1) The name of the owner or operator of the affected source, as defined in § 63.7490, the location of the source, the boiler(s) or process heater(s) that will commence burning solid waste, and the date of the notice.
(2) The currently applicable subcategories under this subpart.
(3) The date on which you became subject to the currently applicable emission limits.
(4) The date upon which you will commence combusting solid waste.
(h) If you have switched fuels or made a physical change to the boiler and the fuel switch or physical change resulted in the applicability of a different subcategory, you must provide notice of the date upon which you switched fuels or made the physical change within 30 days of the switch/change. The notification must identify:
(1) The name of the owner or operator of the affected source, as defined in § 63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice.
(2) The currently applicable subcategory under this subpart.
(3) The date upon which the fuel switch or physical change occurred.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7183, Jan. 31, 2013]

§ 63.7550 What reports must I submit and when?
(a) You must submit each report in Table 9 to this subpart that applies to you.
(b) Unless the EPA Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report, according to paragraph (h) of this section, by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (4) of this section. For units that are subject only to a requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12), respectively, and not subject to emission limits or operating limits, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report.
(1) The first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in § 63.7495 and ending on July 31 or January 31, whichever date is the first date that occurs at least 180 days (or 1, 2, or 5 years, as applicable, if submitting an annual, biennial, or 5-year compliance report) after the compliance date that is specified for your source in § 63.7495.
(2) The first compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater in § 63.7495. The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31.
(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1-, 2-, or 5-year periods from January 1 to December 31.
(4) Each subsequent compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5-year compliance reports must be postmarked or submitted no later than January 31.
(c) A compliance report must contain the following information depending on how the facility chooses to comply with the limits set in this rule.
(1) If the facility is subject to a the requirements of a tune up they must submit a compliance report with the information in paragraphs (c)(5)(i) through (iv) and (xiv) of this section.

(2) If a facility is complying with the fuel analysis they must submit a compliance report with the information in paragraphs (c)(5)(i) through (iv), (vi), (x), (xi), (xiii), (xv) and paragraph (d) of this section.
(3) If a facility is complying with the applicable emissions limit with performance testing they must submit a compliance report with the information in (c)(5)(i) through (iv), (vi), (vii), (ix), (xi), (xiii), (xv) and paragraph (d) of this section.
(4) If a facility is complying with an emissions limit using a CMS the compliance report must contain the information required in paragraphs (c)(5)(i) through (vi), (xi), (xiii), (xv) through (xvii), and paragraph (e) of this section.
(5)(i) Company and Facility name and address.
(ii) Process unit information, emissions limitations, and operating parameter limitations.
(iii) Date of report and beginning and ending dates of the reporting period.
(iv) The total operating time during the reporting period.
(v) If you use a CMS, including CEMS, COMS, or CPMS, you must include the monitoring equipment manufacturer(s) and model numbers and the date of the last CMS certification or audit.
(vi) The total fuel use by each individual boiler or process heater subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the EPA or your basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure.
(vii) If you are conducting performance tests once every 3 years consistent with § 63.7515(b) or (c), the date of the last 2 performance tests and a statement as to whether there have been any operational changes since the last performance test that could increase emissions.
(viii) A statement indicating that you burned no new types of fuel in an individual boiler or process heater subject to an emission limit. Or, if you did burn a new type of fuel and are subject to a HCl emission limit, you must submit the calculation of chlorine input, using Equation 7 of § 63.7530, that demonstrates that your source is still within its maximum chlorine input level established during the previous performance testing (for sources that demonstrate compliance through performance testing) or you must submit the calculation of HCl emission rate using Equation 12 of § 63.7530 that demonstrates that your source is still meeting the emission limit for HCl emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel and are subject to a mercury emission limit, you must submit the calculation of mercury input, using Equation 8 of § 63.7530, that demonstrates that your source is still within its maximum mercury input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of mercury emission rate using Equation 13 of § 63.7530 that demonstrates that your source is still meeting the emission limit for mercury emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel and are subject to a TSM emission limit, you must submit the calculation of TSM input, using Equation 9 of § 63.7530, that demonstrates that your source is still within its maximum TSM input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of TSM emission rate, using Equation 14 of § 63.7530, that demonstrates that your source is still meeting the emission limit for TSM emissions (for boilers or process heaters that demonstrate compliance through fuel analysis).
(ix) If you wish to burn a new type of fuel in an individual boiler or process heater subject to an emission limit and you cannot demonstrate compliance with the maximum chlorine input operating limit using Equation 7 of § 63.7530 or the maximum mercury input operating limit using Equation 8 of § 63.7530, or the maximum TSM input operating limit using Equation 9 of § 63.7530 you must include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel.
(x) A summary of any monthly fuel analyses conducted to demonstrate compliance according to §§ 63.7521 and 63.7530 for individual boilers or process heaters subject to emission limits, and any fuel specification analyses conducted according to §§ 63.7521(f) and 63.7530(g).
(xi) If there are no deviations from any emission limits or operating limits in this subpart that apply to you, a statement that there were no deviations from the emission limits or operating limits during the reporting period.
(xii) If there were no deviations from the monitoring requirements including no periods during which the

CMSs, including CEMS, COMS, and CPMS, were out of control as specified in § 63.8(c)(7), a statement that there were no deviations and no periods during which the CMS were out of control during the reporting period.
(xiii) If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by you during a malfunction of a boiler, process heater, or associated air pollution control device or CMS to minimize emissions in accordance with § 63.7500(a)(3), including actions taken to correct the malfunction.
(xiv) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12) respectively. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.
(xv) If you plan to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in § 63.7545(e)(5)(i).
(xvi) For each reporting period, the compliance reports must include all of the calculated 30 day rolling average values based on the daily CEMS (CO and mercury) and CPMS (PM CPMS output, scrubber pH, scrubber liquid flow rate, scrubber pressure drop) data.
(xvii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
(d) For each deviation from an emission limit or operating limit in this subpart that occurs at an individual boiler or process heater where you are not using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (d)(1) through (3) of this section.
(1) A description of the deviation and which emission limit or operating limit from which you deviated.
(2) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.
(3) If the deviation occurred during an annual performance test, provide the date the annual performance test was completed.
(e) For each deviation from an emission limit, operating limit, and monitoring requirement in this subpart occurring at an individual boiler or process heater where you are using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (e)(1) through (9) of this section. This includes any deviations from your site-specific monitoring plan as required in § 63.7505(d).
(1) The date and time that each deviation started and stopped and description of the nature of the deviation (i.e., what you deviated from).
(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.
(3) The date, time, and duration that each CMS was out of control, including the information in § 63.8(c)(8).
(4) The date and time that each deviation started and stopped.
(5) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
(6) A characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
(7) A summary of the total duration of CMS's downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.
(8) A brief description of the source for which there was a deviation.
(9) A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.
(f)-(g) [Reserved]
(h) You must submit the reports according to the procedures specified in paragraphs (h)(1) through (3) of this section.
(1) Within 60 days after the date of completing each performance test (defined in § 63.2) as required by

this subpart you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart and the compliance reports required in § 63.7550(b) to the EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of the EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph. At the discretion of the Administrator, you must also submit these reports, including the confidential business information, to the Administrator in the format specified by the Administrator. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test in paper submissions to the Administrator.
(2) Within 60 days after the date of completing each CEMS performance evaluation test (defined in 63.2) you must submit the relative accuracy test audit (RATA) data to the EPA's Central Data Exchange by using CEDRI as mentioned in paragraph (h)(1) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator shall submit the results of the performance evaluation in paper submissions to the Administrator.
(3) You must submit all reports required by Table 9 of this subpart electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due the report you must submit the report to the Administrator at the appropriate address listed in § 63.13. At the discretion of the Administrator, you must also submit these reports, to the Administrator in the format specified by the Administrator.
[78 FR 7183, Jan. 31, 2013]

§ 63.7555 What records must I keep?
(a) You must keep records according to paragraphs (a)(1) and (2) of this section.
(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in § 63.10(b)(2)(xiv).
(2) Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in § 63.10(b)(2)(viii).
(b) For each CEMS, COMS, and continuous monitoring system you must keep records according to paragraphs (b)(1) through (5) of this section.
(1) Records described in § 63.10(b)(2)(vii) through (xi).
(2) Monitoring data for continuous opacity monitoring system during a performance evaluation as required in § 63.6(h)(7)(i) and (ii).
(3) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).
(4) Request for alternatives to relative accuracy test for CEMS as required in § 63.8(f)(6)(i).
(5) Records of the date and time that each deviation started and stopped.
(c) You must keep the records required in Table 8 to this subpart including records of all monitoring data and calculated averages for applicable operating limits, such as opacity, pressure drop, pH, and operating load, to show continuous compliance with each emission limit and operating limit that applies to you.
(d) For each boiler or process heater subject to an emission limit in Tables 1, 2, or 11 through 13 to this subpart, you must also keep the applicable records in paragraphs (d)(1) through (11) of this section.
(1) You must keep records of monthly fuel use by each boiler or process heater, including the type(s) of fuel and amount(s) used.
(2) If you combust non-hazardous secondary materials that have been determined not to be solid waste

pursuant to § 241.3(b)(1) and (2) of this chapter, you must keep a record that documents how the secondary material meets each of the legitimacy criteria under § 241.3(d)(1) of this chapter. If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to § 241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfy the definition of processing in § 241.2 of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under § 241.3(c) of this chapter, you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per § 241.4 of this chapter, you must keep records documenting that the material is listed as a non-waste under § 241.4(a) of this chapter. Units exempt from the incinerator standards under section 129(g)(1) of the Clean Air Act because they are qualifying facilities burning a homogeneous waste stream do not need to maintain the records described in this paragraph (d)(2).

(3) For units in the limited use subcategory, you must keep a copy of the federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent and fuel use records for the days the boiler or process heater was operating.

(4) A copy of all calculations and supporting documentation of maximum chlorine fuel input, using Equation 7 of § 63.7530, that were done to demonstrate continuous compliance with the HCl emission limit, for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of HCl emission rates, using Equation 12 of § 63.7530, that were done to demonstrate compliance with the HCl emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum chlorine fuel input or HCl emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate chlorine fuel input, or HCl emission rate, for each boiler and process heater.

(5) A copy of all calculations and supporting documentation of maximum mercury fuel input, using Equation 8 of § 63.7530, that were done to demonstrate continuous compliance with the mercury emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of mercury emission rates, using Equation 13 of § 63.7530, that were done to demonstrate compliance with the mercury emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum mercury fuel input or mercury emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate mercury fuel input, or mercury emission rates, for each boiler and process heater.

(6) If, consistent with § 63.7515(b), you choose to stack test less frequently than annually, you must keep a record that documents that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Tables 1 and 2 or 11 through 13 to this subpart, less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.

(7) Records of the occurrence and duration of each malfunction of the boiler or process heater, or of the associated air pollution control and monitoring equipment.

(8) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in § 63.7500(a)(3), including corrective actions to restore the malfunctioning boiler or process heater, air pollution control, or monitoring equipment to its normal or usual manner of operation.

(9) A copy of all calculations and supporting documentation of maximum TSM fuel input, using Equation 9 of § 63.7530, that were done to demonstrate continuous compliance with the TSM emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of TSM emission rates, using Equation 14 of § 63.7530, that were done to demonstrate compliance with the TSM emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum TSM fuel input or TSM emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type.

However, you must calculate TSM fuel input, or TSM emission rates, for each boiler and process heater.
(10) You must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.
(11) You must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.
(e) If you elect to average emissions consistent with § 63.7522, you must additionally keep a copy of the emission averaging implementation plan required in § 63.7522(g), all calculations required under § 63.7522, including monthly records of heat input or steam generation, as applicable, and monitoring records consistent with § 63.7541.
(f) If you elect to use efficiency credits from energy conservation measures to demonstrate compliance according to § 63.7533, you must keep a copy of the Implementation Plan required in § 63.7533(d) and copies of all data and calculations used to establish credits according to § 63.7533(b), (c), and (f).
(g) If you elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, you must maintain monthly records (or at the frequency required by § 63.7540(c)) of the calculations and results of the fuel specification for mercury in Table 6.
(h) If you operate a unit in the unit designed to burn gas 1 subcategory that is subject to this subpart, and you use an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart under this part, other gas 1 fuel, or gaseous fuel subject to another subpart of this part or part 60, 61, or 65, you must keep records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.
(i) You must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.
(j) You must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.
[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7185, Jan. 31, 2013]

§ 63.7560 In what form and how long must I keep my records?
(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).
(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
(c) You must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep the records off site for the remaining 3 years.

Other Requirements and Information

§ 63.7565 What parts of the General Provisions apply to me?
Table 10 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.7570 Who implements and enforces this subpart?
(a) This subpart can be implemented and enforced by the EPA, or an Administrator such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency (as well as the EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your state, local, or tribal agency.
(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities listed in paragraphs (b)(1) through (5) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency, however, the EPA retains oversight of this subpart and can take enforcement actions, as appropriate.
(1) Approval of alternatives to the non-opacity emission limits and work practice standards in § 63.7500(a)

and (b) under § 63.6(g).
(2) Approval of alternative opacity emission limits in § 63.7500(a) under § 63.6(h)(9).
(3) Approval of major change to test methods in Table 5 to this subpart under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90, and alternative analytical methods requested under § 63.7521(b)(2).
(4) Approval of major change to monitoring under § 63.8(f) and as defined in § 63.90, and approval of alternative operating parameters under § 63.7500(a)(2) and § 63.7522(g)(2).
(5) Approval of major change to recordkeeping and reporting under § 63.10(e) and as defined in § 63.90.
[76 FR 15664, Mar. 21, 2011 as amended at 78 FR 7186, Jan. 31, 2013]

§ 63.7575 What definitions apply to this subpart?
Terms used in this subpart are defined in the Clean Air Act, in § 63.2 (the General Provisions), and in this section as follows:
10-day rolling average means the arithmetic mean of the previous 240 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 240 hours should be consecutive, but not necessarily continuous if operations were intermittent.
30-day rolling average means the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 720 hours should be consecutive, but not necessarily continuous if operations were intermittent.
Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.
Annual capacity factor means the ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity.
Annual heat input means the heat input for the 12 months preceding the compliance demonstration.
Average annual heat input rate means total heat input divided by the hours of operation for the 12 months preceding the compliance demonstration.
Bag leak detection system means a group of instruments that are capable of monitoring particulate matter loadings in the exhaust of a fabric filter (*i.e.,* baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.
Benchmark means the fuel heat input for a boiler or process heater for the one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations.
Biodiesel means a mono-alkyl ester derived from biomass and conforming to ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels (incorporated by reference, see § 63.14).
Biomass or bio-based solid fuel means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue; wood products (*e.g.,* trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (*e.g.,* almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.
Blast furnace gas fuel-fired boiler or process heater means an industrial/commercial/institutional boiler or

process heater that receives 90 percent or more of its total annual gas volume from blast furnace gas.

Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers are excluded from this definition.

Boiler system means the boiler and associated components, such as, the feed water system, the combustion air system, the fuel system (including burners), blowdown system, combustion control systems, steam systems, and condensate return systems.

Calendar year means the period between January 1 and December 31, inclusive, for a given year.

Coal means all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by ASTM D388 (incorporated by reference, see § 63.14), coal refuse, and petroleum coke. For the purposes of this subpart, this definition of “coal” includes synthetic fuels derived from coal, including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures. Coal derived gases are excluded from this definition.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis.

Commercial/institutional boiler means a boiler used in commercial establishments or institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, governmental buildings, hotels, restaurants, and laundries to provide electricity, steam, and/or hot water.

Common stack means the exhaust of emissions from two or more affected units through a single flue. Affected units with a common stack may each have separate air pollution control systems located before the common stack, or may have a single air pollution control system located after the exhausts come together in a single flue.

Cost-effective energy conservation measure means a measure that is implemented to improve the energy efficiency of the boiler or facility that has a payback (return of investment) period of 2 years or less.

Daily block average means the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown or downtime.

Deviation. (1) *Deviation* means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(i) Fails to meet any applicable requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; or

(ii) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

(2) A deviation is not always a violation.

Dioxins/furans means tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 63.14) or diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 63.14), kerosene, and biodiesel as defined by the American Society of Testing and Materials in ASTM D6751-11b (incorporated by reference, see § 60.14).

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems used as control devices in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system.

Dutch oven means a unit having a refractory-walled cell connected to a conventional boiler setting. Fuel materials are introduced through an opening in the roof of the dutch oven and burn in a pile on its floor. Fluidized bed boilers are not part of the dutch oven design category.

Efficiency credit means emission reductions above those required by this subpart. Efficiency credits generated may be used to comply with the emissions limits. Credits may come from pollution prevention projects that result in reduced fuel use by affected units. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to implementation of the energy conservation measures identified in the energy assessment.

Electric utility steam generating unit (EGU) means a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit. To be “capable of combusting” fossil fuels, an EGU would need to have these fuels allowed in their operating permits and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired EGU means any EGU that fired fossil fuel for more than 10.0 percent of the average annual heat input in any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after April 16, 2012.

Electrostatic precipitator (ESP) means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper. An electrostatic precipitator is usually a dry control system.

Energy assessment means the following for the emission units covered by this subpart:

(1) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of less than 0.3 trillion Btu (TBtu) per year will be 8 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 50 percent of the affected boiler(s) energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing an 8-hour on-site energy assessment.

(2) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of 0.3 to 1.0 TBtu/year will be 24 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 33 percent of the energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing a 24-hour on-site energy assessment.

(3) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity greater than 1.0 TBtu/year will be up to 24 on-site technical labor hours in length for the first TBtu/yr plus 8 on-site technical labor hours for every additional 1.0 TBtu/yr not to exceed 160 on-site technical hours, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 20 percent of the energy (e.g., steam, process heat, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities.

(4) The on-site energy use systems serving as the basis for the percent of affected boiler(s) and process heater(s) energy production in paragraphs (1), (2), and (3) of this definition may be segmented by production area or energy use area as most logical and applicable to the specific facility being assessed (e.g., product X manufacturing area; product Y drying area; Building Z).

Energy management practices means the set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility.

Energy management program means a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001.

Energy use system includes the following systems located on-site that use energy (steam, hot water, or electricity) provided by the affected boiler or process heater: process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air-conditioning systems; hot water systems; building envelop; and lighting; or other systems that use steam, hot water, process heat, or electricity provided by the affected boiler or process heater. Energy use systems are only those systems using energy clearly produced by affected boilers and process heaters.

Equivalent means the following only as this term is used in Table 6 to this subpart:

(1) An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.

(2) An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.

(3) An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.

(4) An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.

(5) An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining metals (especially the mercury, selenium, or arsenic) using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing these metals. On the other hand, if metals analysis is done on an “as received” basis, a separate aliquot can be dried to determine moisture content and the metals concentration mathematically adjusted to a dry basis.

(6) An equivalent pollutant (mercury, HCl) determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for the pollutant and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 6 to this subpart for the same purpose.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse. A fabric filter is a dry control system.

Federally enforceable means all limitations and conditions that are enforceable by the EPA Administrator, including, but not limited to, the requirements of 40 CFR parts 60, 61, 63, and 65, requirements within any applicable state implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed boiler means a boiler utilizing a fluidized bed combustion process that is not a pulverized coal boiler.

Fluidized bed boiler with an integrated fluidized bed heat exchanger means a boiler utilizing a fluidized bed combustion where the entire tube surface area is located outside of the furnace section at the exit of the cyclone section and exposed to the flue gas stream for conductive heat transfer. This design applies only to boilers in the unit designed to burn coal/solid fossil fuel subcategory that fire coal refuse.

Fluidized bed combustion means a process where a fuel is burned in a bed of granulated particles, which are maintained in a mobile suspension by the forward flow of air and combustion products.

Fuel cell means a boiler type in which the fuel is dropped onto suspended fixed grates and is fired in a pile. The refractory-lined fuel cell uses combustion air preheating and positioning of secondary and tertiary air injection ports to improve boiler efficiency. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, and suspension burners are not part of the fuel cell subcategory.

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types.

Gaseous fuel includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas and process gases that are regulated under another subpart of this part, or part 60, part 61, or part 65 of this chapter, are exempted from this definition.

Heat input means heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc.
Heavy liquid includes residual oil and any other liquid fuel not classified as a light liquid.
Hourly average means the arithmetic average of at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.
Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water.
Hybrid suspension grate boiler means a boiler designed with air distributors to spread the fuel material over the entire width and depth of the boiler combustion zone. The biomass fuel combusted in these units exceeds a moisture content of 40 percent on an as-fired annual heat input basis. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler. Fluidized bed, dutch oven, and pile burner designs are not part of the hybrid suspension grate boiler design category.
Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.
Light liquid includes distillate oil, biodiesel, or vegetable oil.
Limited-use boiler or process heater means any boiler or process heater that burns any amount of solid, liquid, or gaseous fuels and has a federally enforceable average annual capacity factor of no more than 10 percent.
Liquid fuel includes, but is not limited to, light liquid, heavy liquid, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, biodiesel, vegetable oil, and comparable fuels as defined under 40 CFR 261.38.
Load fraction means the actual heat input of a boiler or process heater divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5).
Major source for oil and natural gas production facilities, as used in this subpart, shall have the same meaning as in § 63.2, except that:
(1) Emissions from any oil or gas exploration or production well (with its associated equipment, as defined in this section), and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;
(2) Emissions from processes, operations, or equipment that are not part of the same facility, as defined in this section, shall not be aggregated; and
(3) For facilities that are production field facilities, only HAP emissions from glycol dehydration units and storage vessels with the potential for flash emissions shall be aggregated for a major source determination. For facilities that are not production field facilities, HAP emissions from all HAP emission units shall be aggregated for a major source determination.
Metal process furnaces are a subcategory of process heaters, as defined in this subpart, which include natural gas-fired annealing furnaces, preheat furnaces, reheat furnaces, aging furnaces, heat treat furnaces, and homogenizing furnaces.
Million Btu (MMBtu) means one million British thermal units.
Minimum activated carbon injection rate means load fraction multiplied by the lowest hourly average activated carbon injection rate measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.
Minimum oxygen level means the lowest hourly average oxygen level measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum pressure drop means the lowest hourly average pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum scrubber effluent pH means the lowest hourly average sorbent liquid pH measured at the inlet to the wet scrubber according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable hydrogen chloride emission limit.

Minimum scrubber liquid flow rate means the lowest hourly average liquid flow rate (e.g., to the PM scrubber or to the acid gas scrubber) measured according to Table 7 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit.

Minimum scrubber pressure drop means the lowest hourly average scrubber pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum sorbent injection rate means:

(1) The load fraction multiplied by the lowest hourly average sorbent injection rate for each sorbent measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits; or

(2) For fluidized bed combustion, the lowest average ratio of sorbent to sulfur measured during the most recent performance test.

Minimum total secondary electric power means the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the electrostatic precipitator measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum gas, as defined in ASTM D1835 (incorporated by reference, see § 63.14); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or

(4) Propane or propane derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the boiler or process heater unit. It is not necessary for fuel to be combusted for the entire 24-hour period.

Other combustor means a unit designed to burn solid fuel that is not classified as a dutch oven, fluidized bed, fuel cell, hybrid suspension grate boiler, pulverized coal boiler, stoker, sloped grate, or suspension boiler as defined in this subpart.

Other gas 1 fuel means a gaseous fuel that is not natural gas or refinery gas and does not exceed a maximum concentration of 40 micrograms/cubic meters of mercury.

Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler or process heater, firebox, or other appropriate location. This definition includes oxygen trim systems. The source owner or operator must install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device. A typical system consists of a flue gas oxygen and/or CO monitor that automatically provides a feedback signal to the combustion air controller.

Particulate matter (PM) means any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an approved alternative method.

Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler or process heater is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility.

Pile burner means a boiler design incorporating a design where the anticipated biomass fuel has a high relative moisture content. Grates serve to support the fuel, and underfire air flowing up through the grates provides oxygen for combustion, cools the grates, promotes turbulence in the fuel bed, and fires the fuel. The most common form of pile burning is the dutch oven.

Process heater means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a process heater unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition.

Pulverized coal boiler means a boiler in which pulverized coal or other solid fossil fuel is introduced into an air stream that carries the coal to the combustion chamber of the boiler where it is fired in suspension.

Qualified energy assessor means:

(1) Someone who has demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy using systems, including, but not limited to:

(i) Boiler combustion management.

(ii) Boiler thermal energy recovery, including

(A) Conventional feed water economizer,

(B) Conventional combustion air preheater, and

(C) Condensing economizer.

(iii) Boiler blowdown thermal energy recovery.

(iv) Primary energy resource selection, including

(A) Fuel (primary energy source) switching, and

(B) Applied steam energy versus direct-fired energy versus electricity.

(v) Insulation issues.

(vi) Steam trap and steam leak management.

(vi) Condensate recovery.

(viii) Steam end-use management.

(2) Capabilities and knowledge includes, but is not limited to:

(i) Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.

(ii) Familiarity with operating and maintenance practices for steam or process heating systems.

(iii) Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand.

(iv) Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods.

(v) Boiler-steam turbine cogeneration systems.

(vi) Industry specific steam end-use systems.

Refinery gas means any gas that is generated at a petroleum refinery and is combusted. Refinery gas includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Refinery gas includes gases generated from other facilities when that gas is combined and combusted in any proportion with gas generated at a refinery.

Regulated gas stream means an offgas stream that is routed to a boiler or process heater for the purpose of achieving compliance with a standard under another subpart of this part or part 60, part 61, or part 65 of this chapter.

Residential boiler means a boiler used to provide heat and/or hot water and/or as part of a residential combined heat and power system. This definition includes boilers located at an institutional facility (e.g., university campus, military base, church grounds) or commercial/industrial facility (e.g., farm) used primarily to provide heat and/or hot water for:
(1) A dwelling containing four or fewer families; or
(2) A single unit residence dwelling that has since been converted or subdivided into condominiums or apartments.
Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-10 (incorporated by reference, *see* § 63.14(b)).
Responsible official means responsible official as defined in § 70.2.
Secondary material means the material as defined in § 241.2 of this chapter.
Shutdown means the cessation of operation of a boiler or process heater for any purpose. Shutdown begins either when none of the steam from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or at the point of no fuel being fired in the boiler or process heater, whichever is earlier. Shutdown ends when there is no steam and no heat being supplied and no fuel being fired in the boiler or process heater.
Sloped grate means a unit where the solid fuel is fed to the top of the grate from where it slides downwards; while sliding the fuel first dries and then ignites and burns. The ash is deposited at the bottom of the grate. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a sloped grate design.
Solid fossil fuel includes, but is not limited to, coal, coke, petroleum coke, and tire derived fuel.
Solid fuel means any solid fossil fuel or biomass or bio-based solid fuel.
Startup means either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying steam or heat for heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam or heat from the boiler or process heater is supplied for heating, and/or producing electricity, or for any other purpose.
Steam output means:
(1) For a boiler that produces steam for process or heating only (no power generation), the energy content in terms of MMBtu of the boiler steam output,
(2) For a boiler that cogenerates process steam and electricity (also known as combined heat and power), the total energy output, which is the sum of the energy content of the steam exiting the turbine and sent to process in MMBtu and the energy of the electricity generated converted to MMBtu at a rate of 10,000 Btu per kilowatt-hour generated (10 MMBtu per megawatt-hour), and
(3) For a boiler that generates only electricity, the alternate output-based emission limits would be calculated using Equations 21 through 25 of this section, as appropriate:
(i) For emission limits for boilers in the unit designed to burn solid fuel subcategory use Equation 21 of this section:

$$EL_{OBE} = EL_T \times 12.7 \text{ MMBtu/Mwh} \quad \text{(Eq. 21)}$$

Where:
EL_{OBE} = Emission limit in units of pounds per megawatt-hour.
EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.
(ii) For PM and CO emission limits for boilers in one of the subcategories of units designed to burn coal use Equation 22 of this section:

$$EL_{OBE} = EL_T \times 12.2 \text{ MMBtu/Mwh} \quad \text{(Eq. 22)}$$

Where:
EL_{OBE} = Emission limit in units of pounds per megawatt-hour.
EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.
(iii) For PM and CO emission limits for boilers in one of the subcategories of units designed to burn biomass use Equation 23 of this section:

$EL_{OBE} = EL_T \times 13.9$ MMBtu/Mwh (Eq. 23)

Where:
EL_{OBE} = Emission limit in units of pounds per megawatt-hour.
EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.
(iv) For emission limits for boilers in one of the subcategories of units designed to burn liquid fuels use Equation 24 of this section:
$EL_{OBE} = EL_T \times 13.8$ MMBtu/Mwh (Eq. 24)
http://www.ecfr.gov/graphics/pdfs/er31ja13.028.pdf
Where:
EL_{OBE} = Emission limit in units of pounds per megawatt-hour.
EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.
(v) For emission limits for boilers in the unit designed to burn gas 2 (other) subcategory, use Equation 25 of this section:
$EL_{OBE} = EL_T \times 10.4$ MMBtu/Mwh (Eq. 25)

Where:
EL_{OBE} = Emission limit in units of pounds per megawatt-hour.
EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.
Stoker means a unit consisting of a mechanically operated fuel feeding mechanism, a stationary or moving grate to support the burning of fuel and admit under-grate air to the fuel, an overfire air system to complete combustion, and an ash discharge system. This definition of stoker includes air swept stokers. There are two general types of stokers: Underfeed and overfeed. Overfeed stokers include mass feed and spreader stokers. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a stoker design.
Stoker/sloped grate/other unit designed to burn kiln dried biomass means the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and is not in the stoker/sloped grate/other units designed to burn wet biomass subcategory.
Stoker/sloped grate/other unit designed to burn wet biomass means the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and any of the biomass/bio-based solid fuel combusted in the unit exceeds 20 percent moisture on an annual heat input basis.
Suspension burner means a unit designed to fire dry biomass/biobased solid particles in suspension that are conveyed in an airstream to the furnace like pulverized coal. The combustion of the fuel material is completed on a grate or floor below. The biomass/biobased fuel combusted in the unit shall not exceed 20 percent moisture on an annual heat input basis. Fluidized bed, dutch oven, pile burner, and hybrid suspension grate units are not part of the suspension burner subcategory.
Temporary boiler means any gaseous or liquid fuel boiler that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler is not a temporary boiler if any one of the following conditions exists:
(1) The equipment is attached to a foundation.
(2) The boiler or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.
(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.
(4) The equipment is moved from one location to another within the facility but continues to perform the

same or similar function and serve the same electricity, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

Total selected metals (TSM) means the sum of the following metallic hazardous air pollutants: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Traditional fuel means the fuel as defined in § 241.2 of this chapter.

Tune-up means adjustments made to a boiler or process heater in accordance with the procedures outlined in § 63.7540(a)(10).

Ultra low sulfur liquid fuel means a distillate oil that has less than or equal to 15 ppm sulfur.

Unit designed to burn biomass/bio-based solid subcategory includes any boiler or process heater that burns at least 10 percent biomass or bio-based solids on an annual heat input basis in combination with solid fossil fuels, liquid fuels, or gaseous fuels.

Unit designed to burn coal/solid fossil fuel subcategory includes any boiler or process heater that burns any coal or other solid fossil fuel alone or at least 10 percent coal or other solid fossil fuel on an annual heat input basis in combination with liquid fuels, gaseous fuels, or less than 10 percent biomass and bio-based solids on an annual heat input basis.

Unit designed to burn gas 1 subcategory includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition.

Unit designed to burn gas 2 (other) subcategory includes any boiler or process heater that is not in the unit designed to burn gas 1 subcategory and burns any gaseous fuels either alone or in combination with less than 10 percent coal/solid fossil fuel, and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, and no liquid fuels. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel during periods of gas curtailment or gas supply interruption of any duration are also included in this definition.

Unit designed to burn heavy liquid subcategory means a unit in the unit designed to burn liquid subcategory where at least 10 percent of the heat input from liquid fuels on an annual heat input basis comes from heavy liquids.

Unit designed to burn light liquid subcategory means a unit in the unit designed to burn liquid subcategory that is not part of the unit designed to burn heavy liquid subcategory.

Unit designed to burn liquid subcategory includes any boiler or process heater that burns any liquid fuel, but less than 10 percent coal/solid fossil fuel and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, either alone or in combination with gaseous fuels. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year are not included in this definition. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories during periods of gas curtailment or gas supply interruption of any duration are also not included in this definition.

Unit designed to burn liquid fuel that is a non-continental unit means an industrial, commercial, or institutional boiler or process heater meeting the definition of the unit designed to burn liquid subcategory located in the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Unit designed to burn solid fuel subcategory means any boiler or process heater that burns only solid fuels or at least 10 percent solid fuel on an annual heat input basis in combination with liquid fuels or gaseous fuels.

Vegetable oil means oils extracted from vegetation.

Voluntary Consensus Standards or VCS mean technical standards (*e.g.,* materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. EPA/Office of Air Quality Planning and Standards, by precedent, has only used VCS that are written in English. Examples of VCS bodies are: American Society of Testing and Materials (ASTM 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-B2959, (800) 262-1373, *http://www.astm.org*), American Society of Mechanical Engineers (ASME ASME, Three Park Avenue, New York, NY 10016-5990, (800) 843-2763, *http://www.asme.org*), International Standards Organization (ISO 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, *http://www.iso.org/iso/home.htm*), Standards Australia (AS Level 10, The Exchange Centre, 20 Bridge Street, Sydney, GPO Box 476, Sydney NSW 2001, + 61 2 9237 6171 *http://www.stadards.org.au*), British Standards Institution (BSI, 389 Chiswick High Road, London, W4 4AL, United Kingdom, +44 (0)20 8996 9001, *http://www.bsigroup.com*), Canadian Standards Association (CSA 5060 Spectrum Way, Suite 100, Mississauga, Ontario L4W 5N6, Canada, 800-463-6727, *http://www.csa.ca*), European Committee for Standardization (CEN CENELEC Management Centre Avenue Marnix 17 B-1000 Brussels, Belgium +32 2 550 08 11, *http://www.cen.eu/cen*), and German Engineering Standards (VDI VDI Guidelines Department, P.O. Box 10 11 39 40002, Duesseldorf, Germany, +49 211 6214-230, *http://www.vdi.eu*). The types of standards that are not considered VCS are standards developed by: The United States, *e.g.,* California (CARB) and Texas (TCEQ); industry groups, such as American Petroleum Institute (API), Gas Processors Association (GPA), and Gas Research Institute (GRI); and other branches of the U.S. government, *e.g.,* Department of Defense (DOD) and Department of Transportation (DOT). This does not preclude EPA from using standards developed by groups that are not VCS bodies within their rule. When this occurs, EPA has done searches and reviews for VCS equivalent to these non-EPA methods.

Waste heat boiler means a device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat boilers are also referred to as heat recovery steam generators. Waste heat boilers are heat exchangers generating steam from incoming hot exhaust gas from an industrial (e.g., thermal oxidizer, kiln, furnace) or power (e.g., combustion turbine, engine) equipment. Duct burners are sometimes used to increase the temperature of the incoming hot exhaust gas.

Waste heat process heater means an enclosed device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat process heaters are also referred to as recuperative process heaters. This definition includes both fired and unfired waste heat process heaters.

Wet scrubber means any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler or process heater to control emissions of particulate matter or to absorb and neutralize acid gases, such as hydrogen chloride. A wet scrubber creates an aqueous stream or slurry as a byproduct of the emissions control process.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

[78 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

Table 1 to Subpart DDDDD of Part 63—Emission Limits for New or Reconstructed Boilers and Process Heaters

As stated in § 63.7500, you must comply with the following applicable emission limits:

[Units with heat input capacity of 10 million Btu per hour or greater]

If your ber or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this oilspecified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn	a. HCl	2.2E-02 lb per MMBtu of heat input	2.5E-02 lb per MMBtu of steam output or 0.28 lb per	For M26A, collect a minimum of 1 dscm per run; for M26 collect a

solid fuel.			MWh	minimum of 120 liters per run.
	b. Mercury	8.0E-07 [a]lb per MMBtu of heat input	8.7E-07 [a]lb per MMBtu of steam output or 1.1E-05 [a]lb per MWh	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
2. Units designed to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	1.1E-03 lb per MMBtu of steam output or 1.4E-02 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 2.9E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
4. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day	1.2E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average	1 hr minimum sampling time.

		rolling average)		
7. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	5.8E-01 lb per MMBtu of steam output or 6.8 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 3.7E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	4.2E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (4.2E-03 lb per MMBtu of steam output or 5.6E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solids	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	2.2E-01 lb per MMBtu of steam output or 2.6 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 [a]lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 0.14 lb per MWh; or (1.1E-04 [a]lb per MMBtu of steam output or 1.2E-03 [a]lb per MWh)	Collect a minimum of 3 dscm per run.
10. Suspension burners designed to burn biomass/bio-	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run	1 hr minimum sampling time.

based solids		oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	average	
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	3.1E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (6.6E-03 lb per MMBtu of steam output or 9.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	330 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	3.5E-01 lb per MMBtu of steam output or 3.6 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	4.3E-03 lb per MMBtu of steam output or 4.5E-02 lb per MWh; or (5.2E-05 lb per MMBtu of steam output or 5.5E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solids	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen	1.1 lb per MMBtu of steam output or 1.0E+01 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 [a]lb per MMBtu of heat input)	3.0E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (5.1E-05 lb per MMBtu of steam output or 4.1E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to burn biomass/bio-based solids	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent	1.4 lb per MMBtu of steam output or 12 lb per MWh; 3-run average	1 hr minimum sampling time.

		oxygen, 30-day rolling average)		
	b. Filterable PM (or TSM)	2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	3.3E-02 lb per MMBtu of steam output or 3.7E-01 lb per MWh; or (5.5E-04 lb per MMBtu of steam output or 6.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel	a. HCl	4.4E-04 lb per MMBtu of heat input	4.8E-04 lb per MMBtu of steam output or 6.1E-03 lb per MWh	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.8E-07 [a]lb per MMBtu of heat input	5.3E-07 [a]lb per MMBtu of steam output or 6.7E-06 [a]lb per MWh	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
15. Units designed to burn heavy liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-02 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)	1.5E-02 lb per MMBtu of steam output or 1.8E-01 lb per MWh; or (8.2E-05 lb per MMBtu of steam output or 1.1E-03 lb per MWh)	Collect a minimum of 3 dscm per run.
16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 [a]lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	1.2E-03 [a]lb per MMBtu of steam output or 1.6E-02 [a]lb per MWh; or (3.2E-05 lb per MMBtu of steam output or 4.0E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to	0.13 lb per MMBtu of steam output or	1 hr minimum sampling time.

that are non-continental units		3 percent oxygen, 3-run average based on stack test	1.4 lb per MWh; 3-run average	
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	2.5E-02 lb per MMBtu of steam output or 3.2E-01 lb per MWh; or (9.4E-04 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 4 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	2.9E-03 lb per MMBtu of steam output or 1.8E-02 lb per MWh	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 7.0E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.
[b] Incorporated by reference, see § 63.14.
[c] If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before January 31, 2013, you may comply with the emission limits in Tables 11, 12 or 13 to this subpart until January 31, 2016. On and after January 31, 2016, you must comply with the emission limits in Table 1 to this subpart.
[78 FR 7193, Jan. 31, 2013]

Table 2 to Subpart DDDDD of Part 63—Emission Limits for Existing Boilers and Process Heaters
As stated in § 63.7500, you must comply with the following applicable emission limits:
[Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	**For the following pollutants . . .**	**The emissions must not exceed the following emission limits, except during startup and shutdown . . .**	**The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .**	**Using this specified sampling volume or test run duration . . .**
1. Units in all subcategories designed to burn solid fuel	a. HCl	2.2E-02 lb per MMBtu of heat input	2.5E-02 lb per MMBtu of steam output or 0.27 lb per MWh	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E-06 lb per MMBtu of heat input	6.4E-06 lb per MMBtu of steam output or 7.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 3 dscm.
2. Units design to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	4.0E-02 lb per MMBtu of heat input; or (5.3E-05 lb per MMBtu of heat input)	4.2E-02 lb per MMBtu of steam output or 4.9E-01 lb per MWh; or (5.6E-05 lb per MMBtu of steam output or 6.5E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
4. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	160 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3	0.14 lb per MMBtu of steam output or 1.7 lb per MWh; 3-run average	1 hr minimum sampling time.

		percent oxygen, 30-day rolling average)		
5. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1.3E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1.4 lb per MMBtu of steam output or 17 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.7E-02 lb per MMBtu of heat input; or (2.4E-04 lb per MMBtu of heat input)	4.3E-02 lb per MMBtu of steam output or 5.2E-01 lb per MWh; or (2.8E-04 lb per MMBtu of steam output or 3.4E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	4.2E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	3.7E-01 lb per MMBtu of steam output or 4.5 lb per MWh; or (4.6E-03 lb per MMBtu of steam output or 5.6E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to	4.6E-01 lb per MMBtu of steam	1 hr minimum sampling time.

burn biomass/bio-based solid		3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	output or 5.2 lb per MWh; 3-run average	
	b. Filterable PM (or TSM)	1.1E-01 lb per MMBtu of heat input; or (1.2E-03 lb per MMBtu of heat input)	1.4E-01 lb per MMBtu of steam output or 1.6 lb per MWh; or (1.5E-03 lb per MMBtu of steam output or 1.7E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solid	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	5.1E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	5.2E-02 lb per MMBtu of steam output or 7.1E-01 lb per MWh; or (6.6E-03 lb per MMBtu of steam output or 9.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	8.4E-01 lb per MMBtu of steam output or 8.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.8E-01 lb per MMBtu of heat input; or (2.0E-03 lb per MMBtu of heat input)	3.9E-01 lb per MMBtu of steam output or 3.9 lb per MWh; or (2.8E-03 lb per MMBtu of steam output or 2.8E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solid	a. CO	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen	2.4 lb per MMBtu of steam output or 12 lb per MWh	1 hr minimum sampling time.

	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (5.8E-03 lb per MMBtu of heat input)	5.5E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (1.6E-02 lb per MMBtu of steam output or 8.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate units designed to burn biomass/bio-based solid	a. CO (or CEMS)	2,800 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	2.8 lb per MMBtu of steam output or 31 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	4.4E-01 lb per MMBtu of heat input; or (4.5E-04 lb per MMBtu of heat input)	5.5E-01 lb per MMBtu of steam output or 6.2 lb per MWh; or (5.7E-04 lb per MMBtu of steam output or 6.3E-03 lb per MWh)	Collect a minimum of 1 dscm per run.
14. Units designed to burn liquid fuel	a. HCl	1.1E-03 lb per MMBtu of heat input	1.4E-03 lb per MMBtu of steam output or 1.6E-02 lb per MWh	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	2.0E-06 lb per MMBtu of heat input	2.5E-06 lb per MMBtu of steam output or 2.8E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784 [b]collect a minimum of 2 dscm.
15. Units designed to burn heavy liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	6.2E-02 lb per MMBtu of heat input; or (2.0E-04 lb per MMBtu of heat input)	7.5E-02 lb per MMBtu of steam output or 8.6E-01 lb per MWh; or (2.5E-04 lb per MMBtu of steam output or 2.8E-03 lb per MWh)	Collect a minimum of 1 dscm per run.

16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	7.9E-03 lb per MMBtu of heat input; or (6.2E-05 lb per MMBtu of heat input)	9.6E-03 lb per MMBtu of steam output or 1.1E-01 lb per MWh; or (7.5E-05 lb per MMBtu of steam output or 8.6E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.7E-01 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	3.3E-01 lb per MMBtu of steam output or 3.8 lb per MWh; or (1.1E-03 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	2.9E-03 lb per MMBtu of steam output or 1.8E-02 lb per MWh	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 2 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input or (2.1E-04 lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 7.0E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip

testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.
[b] Incorporated by reference, see § 63.14.
[78 FR 7195, Jan. 31, 2013]

Table 3 to Subpart DDDDD of Part 63—Work Practice Standards
As stated in § 63.7500, you must comply with the following applicable work practice standards:

If your unit is . . .	You must meet the following . . .
1. A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater	Conduct a tune-up of the boiler or process heater every 5 years as specified in § 63.7540.
2. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of less than 10 million Btu per hour in the unit designed to burn heavy liquid or unit designed to burn solid fuel subcategories; or a new or existing boiler or process heater with heat input capacity of less than 10 million Btu per hour, but greater than 5 million Btu per hour, in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid	Conduct a tune-up of the boiler or process heater biennially as specified in § 63.7540.
3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater	Conduct a tune-up of the boiler or process heater annually as specified in § 63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under this subpart. Units in all other subcategories will conduct this tune-up as a work practice for dioxins/furans.
4. An existing boiler or process heater located at a major source facility, not including limited use units	Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in § 63.7575:
	a. A visual inspection of the boiler or process heater system.

	b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
	c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.
	d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
	e. A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified.
	f. A list of cost-effective energy conservation measures that are within the facility's control.
	g. A list of the energy savings potential of the energy conservation measures identified.
	h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.
5. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 13 to this subpart during startup	You must operate all CMS during startup. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas.
	If you start firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases, you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, selective non-catalytic reduction (SNCR), and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose.
	You must comply with all applicable emission limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of startup, as specified in § 63.7535(b). You must keep records during

	periods of startup. You must provide reports concerning activities and periods of startup, as specified in § 63.7555.
6. An existing or new boiler or process heater subject to emission limits in Tables 1 or 2 or 11 through 13 to this subpart during shutdown	You must operate all CMS during shutdown. While firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR.
	You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in § 63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in § 63.7555.

[78 FR 7198, Jan. 31, 2013]

Table 4 to Subpart DDDDD of Part 63—Operating Limits for Boilers and Process Heaters
As stated in § 63.7500, you must comply with the applicable operating limits:

When complying with a Table 1, 2, 11, 12, or 13 numerical emission limit using . . .	You must meet these operating limits . . .
1. Wet PM scrubber control on a boiler not using a PM CPMS	Maintain the 30-day rolling average pressure drop and the 30-day rolling average liquid flow rate at or above the lowest one-hour average pressure drop and the lowest one-hour average liquid flow rate, respectively, measured during the most recent performance test demonstrating compliance with the PM emission limitation according to § 63.7530(b) and Table 7 to this subpart.
2. Wet acid gas (HCl) scrubber control on a boiler not using a HCl CEMS	Maintain the 30-day rolling average effluent pH at or above the lowest one-hour average pH and the 30-day rolling average liquid flow rate at or above the lowest one-hour average liquid flow rate measured during the most recent performance test demonstrating compliance with the HCl emission limitation according to § 63.7530(b) and Table 7 to this subpart.
3. Fabric filter control on units not using a PM CPMS	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average); or
	b. Install and operate a bag leak detection system according to § 63.7525 and operate the fabric filter such that the bag leak detection system alert is not activated more than 5 percent of the operating time during each 6-month period.
4. Electrostatic precipitator control on units not using a PM CPMS	a. This option is for boilers and process heaters that operate dry control systems (i.e., an ESP without a wet scrubber). Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (daily block average); or

	b. This option is only for boilers and process heaters not subject to PM CPMS or continuous compliance with an opacity limit (i.e., COMS). Maintain the 30-day rolling average total secondary electric power input of the electrostatic precipitator at or above the operating limits established during the performance test according to § 63.7530(b) and Table 7 to this subpart.
5. Dry scrubber or carbon injection control on a boiler not using a mercury CEMS	Maintain the minimum sorbent or carbon injection rate as defined in § 63.7575 of this subpart.
6. Any other add-on air pollution control type on units not using a PM CPMS	This option is for boilers and process heaters that operate dry control systems. Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (daily block average).
7. Fuel analysis	Maintain the fuel type or fuel mixture such that the applicable emission rates calculated according to § 63.7530(c)(1), (2) and/or (3) is less than the applicable emission limits.
8. Performance testing	For boilers and process heaters that demonstrate compliance with a performance test, maintain the operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test.
9. Oxygen analyzer system	For boilers and process heaters subject to a CO emission limit that demonstrate compliance with an O_2analyzer system as specified in § 63.7525(a), maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen concentration measured during the most recent CO performance test, as specified in Table 8. This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.7525(a).
10. SO_2CEMS	For boilers or process heaters subject to an HCl emission limit that demonstrate compliance with an SO_2CEMS, maintain the 30-day rolling average SO_2emission rate at or below the highest hourly average SO_2concentration measured during the most recent HCl performance test, as specified in Table 8.

[78 FR 7199, Jan. 31, 2013]

Table 5 to Subpart DDDDD of Part 63—Performance Testing Requirements

As stated in § 63.7520, you must comply with the following requirements for performance testing for existing, new or reconstructed affected sources:

To conduct a performance test for the following pollutant...	**You must...**	**Using...**
1. Filterable PM	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 to part 60 of this chapter.

	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the PM emission concentration	Method 5 or 17 (positive pressure fabric filters must use Method 5D) at 40 CFR part 60, appendix A-3 or A-6 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
2. TSM	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-1 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the TSM emission concentration	Method 29 at 40 CFR part 60, appendix A-8 of this chapter
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
3. Hydrogen chloride	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-2 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-2 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the hydrogen chloride emission concentration	Method 26 or 26A (M26 or M26A) at 40 CFR part 60, appendix A-8 of this chapter.

	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
4. Mercury	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-1 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the mercury emission concentration	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784.[a]
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
5. CO	a. Select the sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine oxygen concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-3 of this chapter, or ASTM D6522-00 (Reapproved 2005), or ANSI/ASME PTC 19.10-1981.[a]
	c. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	d. Measure the CO emission concentration	Method 10 at 40 CFR part 60, appendix A-4 of this chapter. Use a measurement span value of 2 times the concentration of the applicable emission limit.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7200, Jan. 31, 2013]

Table 6 to Subpart DDDDD of Part 63—Fuel Analysis Requirements

As stated in § 63.7521, you must comply with the following requirements for fuel analysis testing for existing, new or reconstructed affected sources. However, equivalent methods (as defined in § 63.7575) may be used in lieu of the prescribed methods at the discretion of the source owner or operator:

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Using . . .
1. Mercury	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 [a], or ASTM D7430 [a], or ASTM D6883 [a], or ASTM D2234/D2234M [a](for coal) or EPA 1631 or EPA 1631E or ASTM D6323 [a](for solid), or EPA 821-R-01-013 (for liquid or solid), or ASTM D4177 [a](for liquid), or ASTM D4057 [a](for liquid), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples), EPA SW-846-3020A [a](for liquid samples), ASTM D2013/D2013M [a](for coal), ASTM D5198 [a](for biomass), or EPA 3050 [a](for solid fuel), or EPA 821-R-01-013 [a](for liquid or solid), or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass), or ASTM D5864 [a]for liquids and other solids, or ASTM D240 [a]or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a], ASTM E871 [a], or ASTM D5864 [a], or ASTM D240, or ASTM D95 [a](for liquid fuels), or ASTM D4006 [a](for liquid fuels), or ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels), or equivalent.
	f. Measure mercury concentration in fuel sample	ASTM D6722 [a](for coal), EPA SW-846-7471B [a](for solid samples), or EPA SW-846-7470A [a](for liquid samples), or equivalent.
	g. Convert concentration into units of pounds of mercury per MMBtu of heat content	Equation 8 in § 63.7530.
	h. Calculate the mercury emission rate from the boiler or process heater in units of pounds per million Btu	Equations 10 and 12 in § 63.7530.
2. HCl	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 [a], or ASTM D7430 [a], or ASTM D6883 [a], or ASTM D2234/D2234M [a](for coal) or ASTM D6323 [a](for coal or biomass), ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples), EPA SW-846-3020A [a](for liquid samples), ASTM D2013/D2013M§[a](for coal), or ASTM D5198§[a](for

		biomass), or EPA 3050 [a]or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass), ASTM D5864, ASTM D240 [a]or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a]or ASTM E871 [a], or D5864 [a], or ASTM D240 [a], or ASTM D95[a](for liquid fuels), or ASTM D4006 [a](for liquid fuels), or ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels) or equivalent.
	f. Measure chlorine concentration in fuel sample	EPA SW-846-9250 [a], ASTM D6721 [a], ASTM D4208 [a](for coal), or EPA SW-846-5050 [a]or ASTM E776 [a](for solid fuel), or EPA SW-846-9056 [a]or SW-846-9076 [a](for solids or liquids) or equivalent.
	g. Convert concentrations into units of pounds of HCl per MMBtu of heat content	Equation 7 in § 63.7530.
	h. Calculate the HCl emission rate from the boiler or process heater in units of pounds per million Btu	Equations 10 and 11 in § 63.7530.
3. Mercury Fuel Specification for other gas 1 fuels	a. Measure mercury concentration in the fuel sample and convert to units of micrograms per cubic meter	Method 30B (M30B) at 40 CFR part 60, appendix A-8 of this chapter or ASTM D5954 [a], ASTM D6350 [a], ISO 6978-1:2003(E) [a], or ISO 6978-2:2003(E) [a], or EPA-1631 [a]or equivalent.
	b. Measure mercury concentration in the exhaust gas when firing only the other gas 1 fuel is fired in the boiler or process heater	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A or Method 102 at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784 [a]or equivalent.
4. TSM for solid fuels	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 [a], or ASTM D7430 [a], or ASTM D6883 [a], or ASTM D2234/D2234M [a](for coal) or ASTM D6323 [a](for coal or biomass), or ASTM D4177 [a],(for liquid fuels)or ASTM D4057 [a](for liquid fuels),or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples), EPA SW-846-3020A [a](for liquid samples), ASTM D2013/D2013M [a](for coal), ASTM D5198 [a]or TAPPI T266 [a](for biomass), or EPA 3050 [a]or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass), or ASTM D5864 [a]for liquids and other solids, or ASTM D240 [a]or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a]or ASTM E871 [a], or D5864, or ASTM D240 [a], or ASTM D95 [a](for liquid fuels), or ASTM D4006[a](for liquid fuels), or ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels), or equivalent.

	f. Measure TSM concentration in fuel sample	ASTM D3683 [a], or ASTM D4606 [a], or ASTM D6357 [a]or EPA 200.8 [a]or EPA SW-846-6020 [a], or EPA SW-846-6020A [a], or EPA SW-846-6010C [a], EPA 7060 [a]or EPA 7060A [a](for arsenic only), or EPA SW-846-7740 [a](for selenium only).
	g. Convert concentrations into units of pounds of TSM per MMBtu of heat content	Equation 9 in § 63.7530.
	h. Calculate the TSM emission rate from the boiler or process heater in units of pounds per million Btu	Equations 10 and 13 in § 63.7530.

[a] Incorporated by reference, see § 63.14.
[78 FR 7201, Jan. 31, 2013]

Table 7 to Subpart DDDDD of Part 63—Establishing Operating Limits
As stated in § 63.7520, you must comply with the following requirements for establishing operating limits:

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
1. PM, TSM, or mercury	a. Wet scrubber operating parameters	i. Establish a site-specific minimum scrubber pressure drop and minimum flow rate operating limit according to § 63.7530(b)	(1) Data from the scrubber pressure drop and liquid flow rate monitors and the PM or mercury performance test	(a) You must collect scrubber pressure drop and liquid flow rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the lowest hourly average scrubber pressure drop and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Electrostatic precipitator operating parameters (option only for units that operate wet scrubbers)	i. Establish a site-specific minimum total secondary electric power input according to § 63.7530(b)	(1) Data from the voltage and secondary amperage monitors during the PM or mercury performance test	(a) You must collect secondary voltage and secondary amperage for each ESP cell and calculate total secondary electric power input data every 15 minutes during the entire period of the performance tests.
				(b) Determine the average total secondary electric power input by computing

				the hourly averages using all of the 15-minute readings taken during each performance test.
2. HCl	a. Wet scrubber operating parameters	i. Establish site-specific minimum pressure drop, effluent pH, and flow rate operating limits according to § 63.7530(b)	(1) Data from the pressure drop, pH, and liquid flow-rate monitors and the HCl performance test	(a) You must collect pH and liquid flow-rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average pH and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Dry scrubber operating parameters	i. Establish a site-specific minimum sorbent injection rate operating limit according to § 63.7530(b). If different acid gas sorbents are used during the HCl performance test, the average value for each sorbent becomes the site-specific operating limit for that sorbent	(1) Data from the sorbent injection rate monitors and HCl or mercury performance test	(a) You must collect sorbent injection rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average sorbent injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the lowest hourly average of the three test run averages established during the performance test as your operating limit. When your unit operates at lower loads, multiply your sorbent injection rate by the load fraction (e.g., for 50 percent load, multiply the injection rate operating limit by 0.5) to determine the required injection rate.

	c. Alternative Maximum SO_2 emission rate	i. Establish a site-specific maximum SO_2 emission rate operating limit according to § 63.7530(b)	(1) Data from SO_2 CEMS and the HCl performance test	(a) You must collect the SO_2 emissions data according to § 63.7525(m) during the most recent HCl performance tests.
				(b) The maximum SO_2 emission rate is equal to the lowest hourly average SO_2 emission rate measured during the most recent HCl performance tests.
3. Mercury	a. Activated carbon injection	i. Establish a site-specific minimum activated carbon injection rate operating limit according to § 63.7530(b)	(1) Data from the activated carbon rate monitors and mercury performance test	(a) You must collect activated carbon injection rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average activated carbon injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the lowest hourly average established during the performance test as your operating limit. When your unit operates at lower loads, multiply your activated carbon injection rate by the load fraction (e.g., actual heat input divided by heat input during performance test, for 50 percent load, multiply the injection rate operating limit by 0.5) to determine the required injection rate.
4. Carbon monoxide	a. Oxygen	i. Establish a unit-specific limit for minimum oxygen level according to § 63.7520	(1) Data from the oxygen analyzer system specified in § 63.7525(a)	(a) You must collect oxygen data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average oxygen concentration by computing the hourly averages using all

				of the 15-minute readings taken during each performance test.
				(c) Determine the lowest hourly average established during the performance test as your minimum operating limit.
5. Any pollutant for which compliance is demonstrated by a performance test	a. Boiler or process heater operating load	i. Establish a unit specific limit for maximum operating load according to § 63.7520(c)	(1) Data from the operating load monitors or from steam generation monitors	(a) You must collect operating load or steam generation data every 15 minutes during the entire period of the performance test.
				(b) Determine the average operating load by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the average of the three test run averages during the performance test, and multiply this by 1.1 (110 percent) as your operating limit.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7203, Jan. 31, 2013]

Table 8 to Subpart DDDDD of Part 63—Demonstrating Continuous Compliance

As stated in § 63.7540, you must show continuous compliance with the emission limitations for each boiler or process heater according to the following:

If you must meet the following operating limits or work practice standards . . .	**You must demonstrate continuous compliance by . . .**
1. Opacity	a. Collecting the opacity monitoring system data according to § 63.7525(c) and § 63.7535; and
	b. Reducing the opacity monitoring data to 6-minute averages; and
	c. Maintaining opacity to less than or equal to 10 percent (daily block average).
2. PM CPMS	a. Collecting the PM CPMS output data according to § 63.7525;
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average PM CPMS output data to less than the operating limit established during the performance test according to § 63.7530(b)(4).

3. Fabric Filter Bag Leak Detection Operation	Installing and operating a bag leak detection system according to § 63.7525 and operating the fabric filter such that the requirements in § 63.7540(a)(9) are met.
4. Wet Scrubber Pressure Drop and Liquid Flow-rate	a. Collecting the pressure drop and liquid flow rate monitoring system data according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average pressure drop and liquid flow-rate at or above the operating limits established during the performance test according to § 63.7530(b).
5. Wet Scrubber pH	a. Collecting the pH monitoring system data according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average pH at or above the operating limit established during the performance test according to § 63.7530(b).
6. Dry Scrubber Sorbent or Carbon Injection Rate	a. Collecting the sorbent or carbon injection rate monitoring system data for the dry scrubber according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average sorbent or carbon injection rate at or above the minimum sorbent or carbon injection rate as defined in § 63.7575.
7. Electrostatic Precipitator Total Secondary Electric Power Input	a. Collecting the total secondary electric power input monitoring system data for the electrostatic precipitator according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average total secondary electric power input at or above the operating limits established during the performance test according to § 63.7530(b).
8. Emission limits using fuel analysis	a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and
	b. Reduce the data to 12-month rolling averages; and
	c. Maintain the 12-month rolling average at or below the applicable emission limit for HCl or mercury or TSM in Tables 1 and 2 or 11 through 13 to this subpart.
9. Oxygen content	a. Continuously monitor the oxygen content using an oxygen analyzer system according to § 63.7525(a). This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.7525(a)(2).
	b. Reducing the data to 30-day rolling averages; and
	c. Maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen level measured during the most recent CO performance test.

10. Boiler or process heater operating load	a. Collecting operating load data or steam generation data every 15 minutes.
	b. Maintaining the operating load such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test according to § 63.7520(c).
11. SO_2emissions using SO_2CEMS	a. Collecting the SO_2CEMS output data according to § 63.7525;
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average SO_2CEMS emission rate to a level at or below the minimum hourly SO_2rate measured during the most recent HCl performance test according to § 63.7530.

[78 FR 7204, Jan. 31, 2013]

Table 9 to Subpart DDDDD of Part 63—Reporting Requirements

As stated in § 63.7550, you must comply with the following requirements for reports:

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Compliance report	a. Information required in § 63.7550(c)(1) through (5); and	Semiannually, annually, biennially, or every 5 years according to the requirements in § 63.7550(b).
	b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and	
	c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard during the reporting period, the report must contain the information in § 63.7550(d); and	
	d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), or otherwise not operating, the report must contain the information in § 63.7550(e)	

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7205, Jan. 31, 2013]

Table 10 to Subpart DDDDD of Part 63—Applicability of General Provisions to Subpart DDDDD

As stated in § 63.7565, you must comply with the applicable General Provisions according to the following:

Citation	Subject	Applies to subpart DDDDD
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes. Additional terms defined in § 63.7575
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities and Circumvention	Yes.
§ 63.5	Preconstruction Review and Notification Requirements	Yes.
§ 63.6(a), (b)(1)-(b)(5), (b)(7), (c)	Compliance with Standards and Maintenance Requirements	Yes.
§ 63.6(e)(1)(i)	General duty to minimize emissions.	No. See § 63.7500(a)(3) for the general duty requirement.
§ 63.6(e)(1)(ii)	Requirement to correct malfunctions as soon as practicable.	No.
§ 63.6(e)(3)	Startup, shutdown, and malfunction plan requirements.	No.
§ 63.6(f)(1)	Startup, shutdown, and malfunction exemptions for compliance with non-opacity emission standards.	No.
§ 63.6(f)(2) and (3)	Compliance with non-opacity emission standards.	Yes.
§ 63.6(g)	Use of alternative standards	Yes.
§ 63.6(h)(1)	Startup, shutdown, and malfunction exemptions to opacity standards.	No. See § 63.7500(a).
§ 63.6(h)(2) to (h)(9)	Determining compliance with opacity emission standards	Yes.
§ 63.6(i)	Extension of compliance	Yes. Note: Facilities may also request extensions of compliance for the

		installation of combined heat and power, waste heat recovery, or gas pipeline or fuel feeding infrastructure as a means of complying with this subpart.
§ 63.6(j)	Presidential exemption.	Yes.
§ 63.7(a), (b), (c), and (d)	Performance Testing Requirements	Yes.
§ 63.7(e)(1)	Conditions for conducting performance tests	No. Subpart DDDDD specifies conditions for conducting performance tests at § 63.7520(a) to (c).
§ 63.7(e)(2)-(e)(9), (f), (g), and (h)	Performance Testing Requirements	Yes.
§ 63.8(a) and (b)	Applicability and Conduct of Monitoring	Yes.
§ 63.8(c)(1)	Operation and maintenance of CMS	Yes.
§ 63.8(c)(1)(i)	General duty to minimize emissions and CMS operation	No. See § 63.7500(a)(3).
§ 63.8(c)(1)(ii)	Operation and maintenance of CMS	Yes.
§ 63.8(c)(1)(iii)	Startup, shutdown, and malfunction plans for CMS	No.
§ 63.8(c)(2) to (c)(9)	Operation and maintenance of CMS	Yes.
§ 63.8(d)(1) and (2)	Monitoring Requirements, Quality Control Program	Yes.
§ 63.8(d)(3)	Written procedures for CMS	Yes, except for the last sentence, which refers to a startup, shutdown, and malfunction plan. Startup, shutdown, and malfunction plans are not required.
§ 63.8(e)	Performance evaluation of a CMS	Yes.
§ 63.8(f)	Use of an alternative monitoring method.	Yes.
§ 63.8(g)	Reduction of monitoring data	Yes.
§ 63.9	Notification Requirements	Yes.
§ 63.10(a), (b)(1)	Recordkeeping and Reporting Requirements	Yes.

§ 63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups or shutdowns	Yes.
§ 63.10(b)(2)(ii)	Recordkeeping of malfunctions	No. See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§ 63.10(b)(2)(iii)	Maintenance records	Yes.
§ 63.10(b)(2)(iv) and (v)	Actions taken to minimize emissions during startup, shutdown, or malfunction	No.
§ 63.10(b)(2)(vi)	Recordkeeping for CMS malfunctions	Yes.
§ 63.10(b)(2)(vii) to (xiv)	Other CMS requirements	Yes.
§ 63.10(b)(3)	Recordkeeping requirements for applicability determinations	No.
§ 63.10(c)(1) to (9)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(10) and (11)	Recording nature and cause of malfunctions, and corrective actions	No. See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§ 63.10(c)(12) and (13)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(15)	Use of startup, shutdown, and malfunction plan	No.
§ 63.10(d)(1) and (2)	General reporting requirements	Yes.
§ 63.10(d)(3)	Reporting opacity or visible emission observation results	No.
§ 63.10(d)(4)	Progress reports under an extension of compliance	Yes.
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No. See § 63.7550(c)(11) for malfunction reporting requirements.
§ 63.10(e)	Additional reporting requirements for sources with CMS	Yes.
§ 63.10(f)	Waiver of recordkeeping or reporting requirements	Yes.

§ 63.11	Control Device Requirements	No.
§ 63.12	State Authority and Delegation	Yes.
§ 63.13-63.16	Addresses, Incorporation by Reference, Availability of Information, Performance Track Provisions	Yes.
§ 63.1(a)(5),(a)(7)-(a)(9), (b)(2), (c)(3)-(4), (d), 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2)-(4), (c)(9).	Reserved	No.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7205, Jan. 31, 2013]

Table 11 to Subpart DDDDD of Part 63—Toxic Equivalency Factors for Dioxins/Furans

Dioxin/furan congener	**Toxic equivalency factor**
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.3
1,2,3,7,8-pentachlorinated dibenzofuran	0.03
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.0003

[76 FR 15664, Mar. 21, 2011]

Editorial Note: At 78 FR 7206, Jan. 31, 2013, Table 11 was added, effective Apr. 1, 2013. However Table

11 could not be added as a Table 11 is already in existence.

Table 12 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After June 4, 2010, and Before May 20, 2011

If your boiler or process heater is in this subcategory	For the following pollutants	The emissions must not exceed the following emission limits, except during periods of startup and shutdown	Using this specified sampling volume or test run duration
1. Units in all subcategories designed to burn solid fuel	a. Mercury	3.5E-06 lb per MMBtu of heat input	For M29, collect a minimum of 2 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
2. Units in all subcategories designed to burn solid fuel that combust at least 10 percent biomass/bio-based solids on an annual heat input basis and less than 10 percent coal/solid fossil fuels on an annual heat input basis	a. Particulate Matter	0.008 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 1 dscm per run.
	b. Hydrogen Chloride	0.004 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
3. Units in all subcategories designed to burn solid fuel that combust at least 10 percent coal/solid fossil fuels on an annual heat input basis and less than 10 percent biomass/bio-based solids on an annual heat input basis	a. Particulate Matter	0.0011 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 3 dscm per run.
	b. Hydrogen Chloride	0.0022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
4. Units designed to burn pulverized coal/solid fossil fuel	a. CO	90 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.003 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
5. Stokers designed to burn coal/solid fossil fuel	a. CO	7 ppm by volume on a dry basis corrected to	1 hr minimum sampling time.

		3 percent oxygen	
	b. Dioxins/Furans	0.003 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
6. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO	30 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.002 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
7. Stokers designed to burn biomass/bio-based solids	a. CO	560 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.005 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
8. Fluidized bed units designed to burn biomass/bio-based solids	a. CO	260 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.02 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
9. Suspension burners/Dutch Ovens designed to burn biomass/bio-based solids	a. CO	1,010 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.2 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
10. Fuel cells designed to burn biomass/bio-based solids	a. CO	470 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.003 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
11. Hybrid suspension/grate units designed to burn biomass/bio-based solids	a. CO	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.2 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
12. Units designed to burn liquid fuel	a. Particulate Matter	0.002 lb per MMBtu of heat input (30-day	Collect a minimum of 2 dscm per run.

		rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	
	b. Hydrogen Chloride	0.0032 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
	c. Mercury	3.0E-07 lb per MMBtu of heat input	For M29, collect a minimum of 2 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
	d. CO	3 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	e. Dioxins/Furans	0.002 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
13. Units designed to burn liquid fuel located in non-continental States and territories	a. Particulate Matter	0.002 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 2 dscm per run.
	b. Hydrogen Chloride	0.0032 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
	c. Mercury	7.8E-07 lb per MMBtu of heat input	For M29, collect a minimum of 1 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
	d. CO	51 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	e. Dioxins/Furans	0.002 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
14. Units designed to burn gas 2	a. Particulate	0.0067 lb per MMBtu	Collect a minimum of 1

(other) gases	Matter	of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	dscm per run.
	b. Hydrogen Chloride	0.0017 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	For M29, collect a minimum of 1 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
	d. CO	3 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	e. Dioxins/Furans	0.08 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.

[a] Incorporated by reference, see § 63.14.
[76 FR 15664, Mar. 21, 2011]
Editorial Note: At 78 FR 7208, Jan. 31, 2013, Table 12 was added, effective Apr. 1, 2013. However, Table 12 could not be added as a Table 12 is already in existence.

Table 13 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After December 23, 2011, and Before January 31, 2013

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.6E-07 [a]lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
2. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320	1 hr minimum sampling time.

	CEMS)	ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.8E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
3. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.8E-02 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
4. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
5. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
6. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (410 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
7. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.

	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
8. Fluidized bed units designed to burn biomass/bio-based solids	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 [a]lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
9. Suspension burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	5.1E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
10. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	810 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.6E-02 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
11. Fuel cell units designed to burn biomass/bio-based solids	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
12. Hybrid suspension grate boiler designed to burn biomass/bio-based solids	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

13. Units designed to burn liquid fuel	a. HCl	1.2E-03 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.9E-07 [a]lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
14. Units designed to burn heavy liquid fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (18 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-03 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
15. Units designed to burn light liquid fuel	a. CO (or CEMS)	130 [a]ppm by volume on a dry basis corrected to 3 percent oxygen; or (60 ppm by volume on a dry basis corrected to 3 percent oxygen, 1-day block average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 [a]lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
16. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test; or (91 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-hour rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
17. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum

			sample as specified in the method; for ASTM D6784 [b]collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[78 FR 7210, Jan. 31, 2013]

Indiana Department of Environmental Management
Office of Air Quality

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

Source Name:	Nucor Steel
Source Location:	4537 South Nucor Road, Crawfordsville, IN 47933
County:	Montgomery
SIC Code:	3312
Operation Permit No.:	T107-30293-00038
Operation Permit Issuance Date:	August 12, 2012
PSD/Significant Source Modification No.:	107-32615-00038
Significant Permit Modification No.:	107-32627-00038
Permit Reviewer:	Aida DeGuzman

On August 10, 2013, the Office of Air Quality (OAQ) had a notice published the second time in the Journal Review, Crawfordsville, Indiana, stating that Nucor Steel applied for a PSD/Significant Source Modification and a Significant Permit Modification. These permits will allow Nucor Steel to make some changes to the existing steel mini-mill.

The second notice also stated that OAQ proposed to issue permits for this change and provided information on how the public could review the proposed permits and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not these permits should be issued as proposed.

On August 29, 2013, Nucor Steel submitted the following comments to the draft PSD/Significant Source Modification No. 107-32615-00038 and Significant Permit Modification No. 107-32627-00038. Additions are **bolded** and deletions are ~~struck-through~~ for emphasis:

PERMIT COMMENTS

Comment 1:

Section A.3: D.4(k)(1) - Emission Units and Pollution Control Equipment Summary - Castrip LMS, Tundish, and Continuous Strip Caster

Nucor requests that IDEM remove the word "operate" in the statement "(only one ladle can operate at a time)" and replace the word with "(only one (1) ladle will have the electrode applied at any given time)." The electrode provides the power and heat and provides a definite answer to whether the unit is operating or not that is quickly ascertainable to an inspector. Nucor requests that the term be changed for clarification. Additionally Nucor requests that the last sentence be revised to clarify that "It can process heats and return them to Castrip or the Meltshop for casting" to clarify that casting can occur at either location.

Response 1:

The word "operate" in the statement "(only one ladle can operate at a time)" that is found in the emission unit description in Section A.3: D.4(k)(1) and Section D.4 already implies that in order a ladle will operate, the electrode must be applied and vice-versa. The word "operate" means the same as "electrode application" to make the system operate. Therefore the emission unit description in Section A.3: D.4(k)(1) will remain.

The last paragraph in Section A.3: D.4(k)(1) has been clarified as requested. The change is the following.

(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.

Comment 2:

A.3: D.29(qq) – Meltshop- Electric Arc Furnaces, Argon Oxygen Decarburization (AOD) Vessels, Desulfurization, Continuous Casters, EAF Dust Treatment Facility:

Nucor requests that IDEM add the following sentence to provide consistency with the rest of the permit: “Approved in 2013 for modification to allow casting of wider strips of steel.” Additionally, Nucor requests that IDEM correct the spelling of “Castrip” from “Casrtip” in the sentence “Casters can receive liquid steel from the EAF’s LMF’s, AOD, and the Castrip LMS or VTD.”

Response 2:

Section A.3 D.29(qq) has been changed to be consistent with the emission unit description in Section D.29. The change is the following:

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

(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 ~~Casrtip~~ **Castrip** LMS or VTD.

Comment 3:

A.4: D.30(a) Insignificant Activities List – Facility-wide. Nucor requests that (a)(i) and (a)(ii) be clarified by adding the word “each) after “Btu per hour

Response 3:

The word "each" was added in the emission description to clarify Section A.4 and Section D.30 .

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.**

Comment 4:

D.0(k) CASTRIP – LMS, TUNDISH, AND CONTINUOUS STRIP CASTER. Nucor requests that the second sentence of the second paragraph of (k)(1) be revised to read "It can process heats and return them to <u>Castrip</u> or the Meltshop for casting."

Response 4:

See the changes made in Response 1.

Comment 5:

D.0.2 EMISSIONS UNIT OPERATION CONDITIONS – Compliance Determination Requirements: Nucor requests that IDEM do not include EAF and AOD natural gas usage to calculate CO2 emissions as the CO2 emissions from the natural gas combustion in these units are collected by the baghouse CEMS. The CH4 and N2O emissions will be calculated using the natural gas usage for all units to determine the CO2e value. This correction will ensure consistency with the Electronic Greenhouse Gas Reporting Tool (e-GGRT), and prevents double counting of CO2 emissions.

Response 5:

Conditions D.0.2 and D.0.5 have been changed to clarify these conditions: The change is the following:

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

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 ~~calculation for GHG at the Castrip/strip caster line VTD and Castrip/strip caster line LMS-2 (carbon in - carbon out) or at the Castrip/strip caster line LMS-2 and Castrip VTD (carbon in - carbon out).~~

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 A (**eff. July 1, 2013).**

CH4 and N2O Emission Factor fromTable C-2 to Subpart C of Part 98—Default CH4 and N2 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.0.5 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 ~~VTD Castrip/strip caster line~~ LMS-2 and the amount of carbon output from the ~~Castrip/strip caster line VTD~~ **LMS-2** in tons/month; or

Amount of carbon input to the ~~Castrip/strip caster line~~ VTD ~~LMS-2~~ and the amount of carbon output from the ~~Castrip/strip caster line~~ ~~LMS-2~~ **VTD** in tons/month.

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

(~~d~~ **e**) Monthly records of the CO2e emissions.

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

Comment 6:

D.0.2 EMISSIONS UNIT OPERATION CONDITIONS – Compliance Determination Requirements: Nucor requests IDEM to clarify that the use of “total Natural Gas usage” and “total propane usage” is consistent with the restriction to the affected units made in response to the EPA comment. It appears this was done in D.0.5(b), but the clarification should be applied to the limit as well as the record keeping requirement.

Nucor recommends the following language:

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 the modified meltshop for CH4 and N2O only +
CO2e emissions calculated from the total Natural Gas usage from Modified NG Units +
CO2e emissions calculated from the total Propane usage from Modified NG Units +
~~CO2 from mass balance calculation for GHG at the Castrip/strip caster line VTD and Castrip/strip caster line LMS-2 (carbon in - carbon out) or at the Castrip/strip caster line LMS-2 and Castrip VTD (carbon in - carbon out).~~
CO2 emissions from VTD and LMS-2 on mass balance basis

where:
Modified NG Units means the Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2, Tunnel Furnace Snub

CO2e from the modified meltshop for CH4 and N2O only = EAF and AOD NG usage (MMCF/month) x N2O NG emission factor (lb/MMCF) x N2O GWP (310) + EAF and AOD NG usage (MMCF/month) * CH4 NG emission factor (lb/MMCF) x CH4 GWP (21)

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

CO2e from Modified NG Units from natural gas (NG) (tons/month) = ~~n.g.~~ (NG usage (MMCF/month) x CO2 ~~n.g.~~ NG Emission Factor (lb/MMCF) x CO2 GWP(1)) + (NG usage (MMCF/month) x N2O NG Emission Factor (lb/MMCF) x N2O GWP (310)) + (NG usage (MMCF/month) x CH4 NG Emission Factor (lb/MMCF) 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)~~

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

CO2 emissions from carbon mass balance on VTD (carbon in minus carbon out) + emissions from carbon mass balance on LMS-2 (carbon in minus carbon out), calculated based on a monthly sample at the VTD and LMS-2

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).

Response 6:

Please see the changes made to Condition D.0.2 in Response 5.

Comment 7:

D.0.2 EMISSIONS UNIT OPERATION CONDITIONS – Compliance Determination Requirements: Nucor requests that IDEM clarify the phrase "Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A" by stating the effective date to which it applies (e.g., July 1, 2012). Absent this clarification, the phrase will introduce ambiguity as EPA has proposed to change the GWPs. This results in a BACT change without permit review. Nucor requests that the GWPs should be "fixed" as to the time the BACT is established. This should apply to all references to Table C-1 and C-2 of Part 98.

Response 7:

The effective dates "Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A" have been included as the basis of the total greenhouse GHG (CO2e) emissions limit for modified emission units in this permitting action. Please see changes made to Condition D.0.2 in Response 5.

Comment 8:

D.0.5(b) EMISSIONS UNIT OPERATION CONDITIONS – Record Keeping Requirements: Natural gas usage from the EAFs and AOD should be included for purposes of calculating CH4 and N2O emissions.

Response 8:

Please see the changes made to Condition D.0.5 in Response 5.

Comment 9:

D.4(k)(1) - Emission Units and Pollution Control Equipment Summary – Castrip- LMS, Tundish, and Continuous Strip Caster: Nucor requests that IDEM remove the term "operate" and replace the term with "only one (1) ladle will have the electrode applied at any given time." The electrode provides the power and heat and provides a definitive answer to whether the unit is "operating" or not that is quickly ascertainable to an inspector. Nucor requests that IDEM change the term for clarification. Additionally, Nucor requests that the last sentence be revised to clarify that "It can process heats and return them to <u>Castrip or </u>the Meltshop for casting" to clarify that casting can occur at either location.

Response 9:

Please see related Response 1.

Comment 10:

D.4.8(c) FACILITY OPERATION CONDITIONS – Particulate PSD BACT:
Nucor requests that IDEM add "pursuant to Condition D.4.8(b)" to the end of the first phrase in D.4.8(c) to make it clear that this testing commences 2.5 years after the test in D.4.8(b) and continues once every 2.5 years thereafter.

Response 10:

The following condition has been revised for clarification.

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**.

~~(c)~~ ~~Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct opacity compliance stack tests for the LMS-2 baghouse stack (S-20) to demonstrate compliance with the emission limitations in Conditions D.4.1(d), and D.4.1(f), utilizing methods as approved by the Commissioner.~~

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.

~~(d) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct Mercury, Beryllium and Fluoride testing on the LMS-2 baghouse controlling the Castrip to demonstrate compliance with Condition D.4.5(b) through (d).~~

(e ~~)~~ ~~All compliance stack tests shall be repeated at least once every 2.5 years from the date of a 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.

Comment 11:

D.7(r) FACILITY OPERATION CONDITIONS – Slag Processing: Nucor requests that IDEM replace 350 tons per hour with the appropriate 2013 permitted capacity of 300 tons per hour. The 350 tons per hour appears to be a typo and this modification will ensure consistency with the process weight rates in the D.7.3 table.

Response 11:

The permanent screening plant capacity listed in D.7(r) is a typographical error. IDEM has corrected the capacity from 350 tons/hour to 300 tons/hour. This is consistent with the PTE Calculations on page 30 of 32 TSD Appendix A. The following is the correction:

D.7(r) 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 ~~350~~ **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.

Comment 12:

D.29(qq) – Meltshop- Electric Arc Furnaces, Argon Oxygen Decarburization (AOD) Vessels, Desulfurization, Continuous Casters, EAF Dust Treatment Facility: Nucor requests that IDEM add the following sentence to provide consistency with the rest of the permit: “Approved in 2013 for modification to allow casting of wider strips of steel.” Additionally, Nucor requests that IDEM correct the spelling of “Castrip” from “Casrtip” in the sentence “Casters can receive liquid steel from the EAF’s LMF’s, AOD, and the Casrtip LMS or VTD.”

Response 12:

Please related Response 2.

Comment 13:

D.30(a) Insignificant Activities List – Facility-wide. Nucor requests that (a)(i) and (a)(ii) be clarified by adding the word “each" after “Btu per hour”.

Response 13:

See related Response 3.

Comment 14:

E.2.2 FACILITY OPERATION CONDITIONS – National Emissions Standards for Hazardous Air Pollutants for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants [40 CFR Part 63, Subpart CCC]: Nucor requests that IDEM rewrite Section E.2.2 as follows: “Pursuant to 40 CFR Part 63, Subpart CCC, 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, Virgin HCl /regenerated acid storage tanks (T-867, T-868 and T-869) located in the Tank Farm shall comply with the following provisions.” This new language removes reference to the spent pickle liquor tanks (T 863, T 864, T 865, and T 866) because spent liquor tanks are not covered under this standard pursuant to the definition in 40 CFR 63.1156 (listing only virgin and regenerated acid tanks).

Response 14:

Hydrochloric acid (HCl) regeneration plant is defined in 40 CFR 63.1156 as the collection of equipment and processes configured to reconstitute fresh HCL pickling solution from spent pickle liquor using a thermal treatment process. Based upon this definition, spent pickle liquor, which is contained in tanks is reconstituted into fresh HCl. Therefore, spent pickle liquor tanks are part of the Hydrochloric acid regeneration plant and are subject to 40 CFR Part 63, Subpart CCC

National Emission Standards for Hazardous Air Pollutants for Steel Pickling—HCl Process Facilities and Hydrochloric Acid Regeneration Plants. However, spent pickle liquor tanks are not subject to 40 CFR 63.1159(b). Condition E.2.2 has been clarified as follows:

E.2.2 National Emissions Standards for Hazardous Air Pollutants for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants [40 CFR Part 63, Subpart CCC]

Pursuant to 40 CFR Part 63, Subpart CCC, 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) shall comply with the following provisions:

(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

Comment 15:

E.4 FACILITY OPERATION CONDITIONS – Emergency Generators: Nucor requests IDEM revise this section based on the status of all emergency generators located at the facility. All Emergency Generators at the facility are "existing" emergency generators as defined by either 40 CFR § 63.6590(a)(1)(i) (stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002) or 40 CFR § 63.6590(a)(1)(ii) (stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006). Thus, there are two, not three, categories of generators: (1) existing emergency generators greater than 500 HP and (2) existing emergency generators less than 500 HP.

The current draft permit incorrectly separates existing emergency generators less than 500 HP into two categories: GEN#3 and GEN#'s 5, 6 and 7. All of these generators have the same applicable requirements for existing stationary emergency generators less than 500 HP. Generators 3, 5, 6 and 7 are all subject to the same requirements under Subpart ZZZZ.

Nucor recommends the following revisions to Section E.4:

SECTION E.4 FACILITY OPERATION CONDITIONS

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

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.)

~~E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]~~

~~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 Cold Mill generator, identified as GEN #3 except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.~~

~~E.4.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ - Emission Units ≤ 500 HP Capacity, constructed before June 12, 2006]~~

~~Pursuant to 40 CFR Part 63, Subpart ZZZZ, the Cold Mill generator, identified as GEN #3 with capacity ≤ 500 HP, constructed before June 12, 2006 shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ no later than May 3, 2013:~~

~~(1) 40 CFR § 63.6580~~
~~(2) 40 CFR § 63.6585~~
~~(3) 40 CFR § 63.6590~~
~~(4) 40 CFR § 63.6602~~
~~(5) 40 CFR § 63.6605(a), (b)~~
~~(6) 40 CFR § 63.6625(e)(2), (f), (h), (i),~~
~~(7) 40 CFR § 63.6640(a), (b), (e), (f)~~

~~(8) 40 CFR § 63.6655(a), (b), (d), (e), (f)~~
~~(9) Table 2c to Subpart ZZZZ of Part 63, footnote 1 of Table 2c and footnote 2 of Table 2c~~
~~(10) Table 6 to Subpart ZZZZ of Part 63~~
~~(11) Table 8 to Subpart ZZZZ of Part 63~~

E.4.~~3~~1 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units > 500 HP capacities constructed before December 19, 2002]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, 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:

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
(9) 40 CFR § 63.6675

E.4.~~4~~2 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:

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) ~~(for Lip seal and Guard House Generators -<100 HP)~~
~~40 CFR § 63.6645(a)(1) (for VTD Generator -<500 HP)~~
~~(9) 40 CFR § 63.6650(h) (for VTD Generator - >100 HP)~~
(~~10~~9) 40 CFR § 63.6655(a)(1), (d), (f)(1)
(~~11~~10) 40 CFR § 63.6660
(~~12~~11) 40 CFR § 63.6665
Table 2c to Subpart ZZZZ, item (1)
Table 6 to Subpart ZZZZ, item 9
(General Provisions (40 CFR Part 63)) - Table 8, 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)

Response 15:

Conditions D.4.1 and D.4.2 were retained in the draft permit to show the existing emission units subject to this rule that are not affected in this permitting action (PSD/SSM No. 107-32615-00038. and SPM No. 107-32627-00038). However, based upon this comment and to avoid confusion, IDEM has grouped these emission units with the emission units addressed in this permitting action. Subsection (c) of 40 CFR § 63.6595 in E.4.3, now E.4.1 is applicable to these generators. Therefore it will remain in the permit. The following are the changes made to Section E.4:

E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]

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 ~~Cold Mill generator, identified as GEN #3~~ **existing generators** except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

~~E.4.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ - Emission Units ≤ 500 HP Capacity, constructed before June 12, 2006]~~

~~Pursuant to 40 CFR Part 63, Subpart ZZZZ, the Cold Mill generator, identified as GEN #3 with capacity ≤ 500 HP, constructed before June 12, 2006 shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ no later than May 3, 2013:~~

~~(1) 40 CFR § 63.6580~~
~~(2) 40 CFR § 63.6585~~
~~(3) 40 CFR § 63.6590~~
~~(4) 40 CFR § 63.6602~~
~~(5) 40 CFR § 63.6605(a), (b)~~
~~(6) 40 CFR § 63.6625(e)(2), (f), (h), (i),~~
~~(7) 40 CFR § 63.6640(a), (b), (e), (f)~~
~~(8) 40 CFR § 63.6655(a), (b), (d), (e), (f)~~
~~(9) Table 2c to Subpart ZZZZ of Part 63, footnote 1 of Table 2c and footnote 2 of Table 2c~~
~~(10) Table 6 to Subpart ZZZZ of Part 63~~
~~(11) Table 8 to Subpart ZZZZ of Part 63~~

E.4.~~3~~**2** National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units > 500 HP capacities constructed before December 19, 2002]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, 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:

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
(9) 40 CFR § 63.6675

E.4.~~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:

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) ~~(for Lip seal and Guard House Generators -<100 HP)~~
~~40 CFR § 63.6645(a)(1) (for VTD Generator -<500 HP)~~
~~(9) 40 CFR § 63.6650(h) (for VTD Generator - >100 HP)~~
(~~10~~9) 40 CFR § 63.6655(a)(1), (d), (f)(1)
(1~~1~~0) 40 CFR § 63.6660
(1~~2~~1) 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)) **-** ~~Table 8~~, 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)

TECHNICAL SUPPORT DOCUMENT COMMENTS

Comment 16:

TSD – D.4 (page 4): Please reflect the requested changes above in D.4(k)(1) to replace the term "operate" with "only one (1) ladle will have the electrode applied at any given time."

Response 16:

IDEM, OAQ prefers not to change the TSD in order to preserve the original information that formed the basis of the draft permit. However, any corrections to the TSD will be documented in this TSD Addendum.

See related Response 1.

Comment 17:

TSD – SSM No. 107-31415-00038, Steel Technologies Cleaner Section Project (page 6): Nucor requests that IDEM revise "straighter" to reflect the correct term "straightener."

Response 17:

The following paragraph in the original TSD on page 6 of 122 has been corrected as follows:

> **Steel Technologies Cleaner Section project -** This project involves adding a cleaner section to the leveler/~~straighter~~ **straightener** line located at Steel Technologies. It was needed to meet the customer's quality requirements for surface cleanliness. This cleaning section was permitted in 2009 but was never installed. The project was redesigned and re-permitted in 2012. It did not affect the production rate or total production of steel from the facility.

Comment 18:

TSD – SSM No. 107-29766-00038, Steel Technologies Cleaner Section Project (page 7): Nucor requests clarification from IDEM as to how this provision is different from permit 107-31415-00038 discussed above.

Response 18:

This section in the TSD summarized the source modifications and amendments permitted in 2011 and 2012 that have been evaluated for PSD aggregation purposes to determine whether these modifications and amendments are considered a single project under NSR that must be aggregated with the proposed PSD/SSM 107-32615-00038:

The project permitted in source modification SSM No. 107-29766-00038, issued on April 4, 2011 was described incorrectly. The following is the correction:

~~Steel Technologies Cleaner Section project - This project involves adding a cleaner section to the leveler/straightener line located at Steel Technologies. Its need is to meet the customer's quality requirements for surface cleanliness. This cleaning section was permitted in 2009 but was never installed. The project was redesigned and re-permitted in 2012. It does not affect the production rate or total production of steel from the facility.~~

(a) Addition of a magnetic separator to a new conveyor belt, exiting the modified 305 tons/hour Grizzly. This change will result in one (1) new drop point for the metal that is separated from the slag by the magnetic separator and goes into a new storage pile (drop point #1). The slag will pass through the magnetic separator and transfer to one of two new conveyors, identified as TSP-1 and TSP-5 (drop point #4), via a diverter box. The slag will then either be routed to the new 341 tons/hr replacement screen identified as TSP-2 via conveyor TSP-1 or be routed to the existing crusher via conveyor TSP-5 (drop point #2). From the crusher, slag is sent back to the replacement screen, TSP-2 (drop point #5). The existing crusher, TSP-6 will increase its rated capacity from 100 tons per hour to 305 tons/hour. Existing screening process, TSP-8, consisting of three (3) screeners with a total rated capacity of 305 tons/hr will be increased to 447 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.

(b) New Blend Plant, 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. The Blend Plant will process any slag material that is not processed by Melt Solutions, the temporary screening plant or that is processed as slag chips.

(c) Temporary Screening Plant, with maximum rated capacity of 60 tons per hour, powered by a 97 HP diesel generator, TSP-3. This screening plant will further screen the slag product from EU-10 to a smaller size for special applications. When this screen plant is not in operation this material will go to the Blend Plant.

(d) 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.

The following emission units which were permitted (but have not yet been constructed) on June 25, 2010 in SSM No. 107-29010-00038 have been aggregated in this proposed modification SSM No. 107-29766-00038 since these projects are related:

(a) Additional B-Scrap Beneficiation process to be operated by Melt Solution, LLC with the following emission units:

(1) Material handling process with one (1) front end-loader, identified as BSBP-1, with a maximum throughput rate of 100 tons per hour;

(2) Two (2) conveyor belts with magnetic separator, identified as BSBP-2, with a

maximum throughput rate of 100 tons per hour;

(3) One (1) jaw crusher, identified as BSBP-3, with a maximum throughput rate of 100 tons per hour;

(4) One (1) screener, identified as BSBP-4, with a maximum throughput rate of 100 tons per hour;

(5) One (1) 425 Brake Horsepower (BHP) diesel fuel-fired generator, identified as BSBP-5.

This process involves further processing of the finished product from the existing Slag Processing, EU-10. However, it will not increase the slag production. No operations at the plant will be affected by the B-Scrap Beneficiation process.

Comment 19:

TSD- Permit Level Determination Table-Baseline Actual Emissions (page 10): Nucor seeks clarification from IDEM as to what “West Plant” references in the “Total Baseline Actual (West Plant” row.

Response 19:

It is a typographical error and has been deleted from the table. The paragraph at the end of following table has also been corrected:

	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**	
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
ACTUAL TO POTENTIAL (ATP) TEST (ton/yr) - MODIFIED UNITS/INCREASE UTILIZATION									
BASELINE ACTUAL EMISSISONS									
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	PM	PM10	PM2.5	VOC	CO	SO2	NOx	GHGs (CO2e)	Pb
MMBtu/hr total									
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	69,469.63	--
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									
Castrip Caster	0.044	0.044	0.044	-	-	-	-		--
Total Baseline Actual ~~(West Plant)~~	120.64	120.64	113.91	69.45	1,163.85	196.01	207.35	330,869.06	0.035
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	103,686.0	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									

	PM	PM10	PM2.5	VOC	CO	SO2	NOx	GHGs (CO2e)	Pb
Castrip Caster	0.122	0.122	0.122	-	-	-	-		--
Total PTE	**412.96**	**416.25**	**405.39**	**337.40**	**4,513.31**	**726.42**	**907.41**	**620,465.19**	**1.05**
Emissions Increase from Modified Emission Units (ATP)	**292.32**	**295.61**	**291.48**	**267.95**	**3,349.46**	**530.41**	**700.06**	**289,596.13**	**1.02**
Total Emission Increase From Project (Hybrid Test)	**293.65**	**297.67**	**293.54**	**269.89**	**3,363.56**	**531.49**	**728.18**	**305,716.00**	**1.02**
PSD Significant Levels	**25**	**15**	**10**	**40**	**100**	**40**	**40**	**75,000**	**0.6**

Based on the hybrid test, this modification to an existing major stationary source is major for Prevention of Significant Deterioration under 326 IAC 2-2-1 for PM, PM10, PM2.5 VOC, SO2, CO, **NOx GHG** and Pb.

Comment 20:

TSD- Permit Level Determination Table (page 10): Nucor seeks clarification from IDEM as to why NOx or GHG are not included in the statement, "Based on the hybrid test, this modification to an existing major stationary source is major for Prevention of Significant Deterioration under 326 IAC 2-2-1 for PM, PM10, PM2.5 VOC, SO2, CO and Pb."

Response 20:

NOx and GHG were inadvertently left out from that paragraph. However, the project was evaluated for PSD BACT for these pollutants. See related Response 19:

Comment 21:

TSD- State Rule Applicability Determination(a) (page 15): Nucor seeks clarification from IDEM as to why this discussion differs from the statement under Permit Level Determination Table (page 10) that included Pb and did not include NOx or GHG.

Response 21:

See related Response 20.

Comment 22:

TSD- D.12 Compliance Determination and Monitoring Requirements, Existing Emission Units Affected by this Modification table (page 17): Nucor requests that IDEM remove the row for D.12 clean shred scrap plant to reflect the requested change stating this unit is to be deleted.

Response 22:

The testing in D.1 for the vacuum degasser has been changed to reflect the permit, while D.12 clean shred has been deleted from the following Compliance Determination Requirements table:

Existing Emission Units Affected by this Modification				
Emission Unit	**Control Device**	**Pollutant**	**Frequency of Testing/ Monitoring**	**Monitoring**
D.1 -Vacuum Degasser	Flare	CO	~~2.5 years after most recent stack test~~ **1 time testing**	Presence of flare pilot flame shall be monitored
D.4 - Castrip LMS	Baghouse	PM**/PM10/PM 2.5**, Lead	2.5 years after most recent stack test	Visible Emission Notation (VEN) of LMS-2 Baghouse and Pressure drop reading and recording
	No Control	NOx, CO, SO2	1 time testing	
D.7 Coil and Scrap Cutting, CC-1	Baghouse	PM/PM10 **and PM2.5**	2.5 years after most recent stack test	Visible Emission Notations of MSS-1 uncontrolled exhaust and CC-1 baghouse and Pressure drop reading and recording
~~D.12 clean shred scrap plant~~	~~No control~~	~~particulate~~	~~once/day VEN~~	~~Visible Emission Notations of clean shred scrap plant and scrap cutting~~
D.15 Pickling Lines 1 and 2	Scrubbers and Mist Eliminators	HCl in Particulate form	Pressure drop, recirculating water flow rate and makeup water flow rate	Scrubber Failure Detection
D.29 Meltshop Operation (EAFs, LMFs, AOD, CC, Preheaters and Dryers, EAF Dust Treatment)	Meltshop Baghouses 1 and 2	PM/PM10/**PM 2.5**, lead,	Once every 2.5 years from most recent stack test	VEN, Pressure Drop, BLDS, opacity (Method 9)
	No Control	CO, NOx, SO2	Continuous reading	CEMS

These monitoring conditions are necessary to meet the PSD BACT established, pursuant to 326 IAC 2-2-3 and to avoid the requirements of 326 IAC 2-2.

Comment 23:

TSD- D.29 Compliance Determination and Monitoring Requirements, Existing Emission Units Affected by this Modification table (page 17): Nucor requests clarification from IDEM if D.29 Meltshop Operation row/Pollutant column “PM, PM10, lead” should also include PM2.5.

Response 23:

See changes made to the Compliance Determination Requirements Table in Response 22.

Indiana Department of Environmental Management
Office of Air Quality

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

Source Description and Location

Source Name:	Nucor Steel
Source Location:	4537 South Nucor Road, Crawfordsville, IN 47933
County:	Montgomery
SIC Code:	3312
Operation Permit No.:	T107-30293-00038
Operation Permit Issuance Date:	August 12, 2012
PSD/Significant Source Modification No.:	107-32615-00038
Significant Permit Modification No.:	107-32627-00038
Permit Reviewer:	Aida DeGuzman

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 August 12, 2012. The source has since received the following approvals:

(a) First Significant Permit Modification No. 107-31578-00038, issued on August 30, 2012;

(b) Review Request No. 107-32334-00038, issued on September 27, 2012 and

(c) First Administrative Amendment No. 107-32565-00038, issued on December 12, 2012.

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 June 15, 2004, for the 8-hour ozone standard.[1]
PM10	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Montgomery County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$

Montgomery County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$, $SO_{2,}$ and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

Montgomery County has been classified as attainment or unclassifiable in Indiana for all the other 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

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	251
PM10	251
$PM_{2.5}$	438
SO_2	1,001.6
VOC	455.5
CO	4,876.2
NO_X	1,354.6
GHGs as CO_2e	461,003

HAPs	**Emissions (tons/yr)**
Single HAP	>10
Combined HAPs	>25

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a regulated pollutant is emitted at a rate of 100 tons per year or more, emissions of GHGs are equal to or greater than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) 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 December 14, 2012 relating to the modification of the plant which consists of the following activities:

Unpermitted Emission Units:

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

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

(c) VTD backup generator, identified as GEN #7, constructed in 2003 with a capacity of 134

HP with emissions uncontrolled,

(d) Transfer Car non-emergency generator, identified as GEN #8, constructed in 2002 with a capacity of 99 HP with emissions uncontrolled,

These generators are not part of the process subject to PSD review in this permitting action. However, they were conservatively included at Permittee's request.

New Emission Units:

(a) Four (4) natural gas-fired Tundish Nozzle Preheaters, installed through the years, permitted in 2013, each with a heat input capacity of 0.8 MMBtu/hour.

Modified Existing Emission Units:

(a) Meltshop-EAF Modification: (Section D.29) - Addition of six (6) new oxyfuel burners/lances, each with a designed rated capacity of 5 MMBtu per hour (MMBtu/hr) for a total of 30 MMBtu/hr to each electric arc furnace (EAF).

Note: Although the oxyfuel burners/lances combust natural gas, the emissions associated with combustion is accounted for in the scrap melting process at the Meltshop EAF. These oxyfuel burners are installed through the side of the two (2) EAF walls just above the steel liquid where they supply chemical energy, convection and flame radiation to transfer heat to the scrap metal.

(b) 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 and the following EAFs associated equipment:

(1) Charge buckets for single charge operation.

(2) Enhancements to scrap bay cranes and Melt Shop overhead cranes.

(3) Modifications, upgrades, repairs or additions to EAF, yard and LMF transformers to increase output.

(4) Switching to a one (1) bucket charge operation at the EAFs.

(5) Modifications to fans at both Melt Shop baghouse for increased energy efficiency.

(6) Modifications to existing carbon injection systems.

(c) (Section D.4) - Physical modification to the Castrip Caster and associated equipment including controls, modifications to structure, hot box, and transition piece to allow casting steel strip up to 80 inches wide. The Castrip Caster maximum capacity will remain at 270 tons per hour.

(1) Upgrades to overhead cranes to enhance operations.

(2) Addition of fluoride to the VTD at an average rate of less than or equal to 250 lbs/heat.

(3) Addition of second ladle access to the LMS. Only one (1) ladle will operate at any given time

(d) (Section D.25) - Physical modification to the Hot Strip Rolling Mill to allow the rolling of wider steel strip.

The change in the width of the steel strips produced at the CSP Casters will affect the following existing emission units:

(a) (Section D.29) - Increase in the actual steel melt at the Meltshop EAFs since the casters (Section D.4) will produce a wider steel strip. Likewise, the Meltshop Station which includes LMFs, Continuous Casters, Argon Oxygen (AOD) Vessels and Decarburization will also allow the processing of wider strip of steel.

(b) (Section D.25) -Tunnel Furnace System, including the shuttles and snub furnaces will be physically modified to process a wider strip of steel.

(c) (Section D.19) - Cold Mill Annealing furnaces - increase utilization but no physical modification to process wider strip of steel.

(d) (Section D.25) - Physical modification to the Hot Strip Mill including laminar cooling, run out roller table, new down coiler 1 and 2 and new or modified support equipment to allow rolling of wider strip of steel. This includes automation systems, controls, hydraulic systems, grease, lube and oil systems for all modified units

(e) (Section D.26) - Hot Strip Mill - Annealing Furnaces - increase utilization but no physical modification to process wider strip of steel.

(f) Increases in actual water recirculation rates at the caster cooling tower, hot mill contact and non-contact cooling towers, laminar cooling tower will occur but will not increase above the towers associated permitted average capacities

(g) (Section D. 15) - Physical modification to Pickle Line No.2 to allow the processing of wider strip of steel.

(h) Miscellaneous Changes:

(1) (Section D.29) - Increase burners to the five (5) Tundish Preheaters, TP1-TP5 at the Ladle Metallurgy Furnaces (LMFs) from 6 MMBtu/hr each to 12 MMBtu/hr each.

(2) (Section D.7) - Slag Processing, Handling and Storage -Increase in the actual slag production, processing and storage since the actual steel that will be melted at the EAFS will increase with no physical modification.

(3) Allow replacement or upgrades of controls, mill automation, server hardware upgrades, drive controls, drive replacements, PLC upgrades, crane upgrades of which do not result in any increase in the ability of the equipment or increase in production. These changes are required due to loss of vendor support and to maintain compatibility among systems.

(4) Transformer and spare upgrades, repairs and replacement for non EAF, LMF transformers.

(5) Upgrades to overhead cranes to enhance their operations in the Hot Mill and Cold Mills

Physical Modification to CSP casters CC#1 and CC#2

(a) New molds, strand guides and segments at both casters, includes automation systems, controls, hydraulic systems, grease, lube and oil systems for all modified units to allow for the casting of wider steel strip.

The following source modifications and amendments permitted in 2011 and 2012 have been evaluated for PSD aggregation purposes to determine whether these modifications and amendments are considered a single project under NSR that must be aggregated with the proposed PSD/SSM 107-32615-00038:

<u>Significant Permit Modification (SPM) No. 107-31578-00038, issued on August 30, 2012</u>

VTD Flare - This project involves the relocation of the existing Vacuum Tank Degasser flare and converting the enclosed flare to an open flare. The change was necessary due to maintenance issues with the enclosed flare and concerns about stack temperatures. The flares have identical design capacities and no production rate improvements or increase in total production were involved.

<u>Significant Source Modification (SSM) No. 107-31415-00038, issued on May 15, 2012</u>

This project involves the following activities:

Tunnel Furnace burner replacement - This is an energy efficiency project. It involved installing lower heat input rated burners, reducing heat input at the units. No production increases were associated with this project.

Caster Quench System - This project, which involved adding a water quench at both the casters, is a slab quality project needed for metallurgical requirements. No production increases were associated with this project as it does not affect process speed.

Linde Gas plant modification - LINDE is an on-site contractor who provides industrial gases to Nucor's operation. This project is a cost reduction project to reduce the number of trucks delivering oxygen to Nucor's facility. Trucking in oxygen is more expensive than on site produced oxygen. This project did not increase the supply of oxygen to the mill as it did not involve any delivery equipment modifications. Accordingly, there is no associated production increase.

Pickle line project - The pickle line flattener project involved replacement of the flattener equipment to maintain steel profile specifications. This project did not affect the production rate or total production at the pickle line.

Steel Technologies Cleaner Section project - This project involves adding a cleaner section to the leveler/straighter line located at Steel Technologies. It was needed to meet the customer's quality requirements for surface cleanliness. This cleaning section was permitted in 2009 but was never installed. The project was redesigned and re-permitted in 2012. It did not affect the production rate or total production of steel from the facility.

<u>SSM No. 107-30886-00038, issued on January 27, 2012</u>

DRI Handling Facility - This project, which involved installation of material handling equipment to allow offloading of direct reduced iron (DRI) pellets and their transfer to the melt shop, was needed for Nucor Crawfordsville to receive DRI material from its facility in Louisiana that is currently under construction. The project facilitates Nucor's use of DRI and scrap substitutes to offset the use of scrap that is becoming more scarce and costly. No production increase was associated with this project, which was primarily an adjustment in the ratio of already permitted scrap and scrap substitute feeds to the furnace.

<u>Administrative Amendment (AA) No. 107-31076, issued on December 19, 2011</u>

New CO_2 uses. - Nucor added carbon dioxide bubbler systems for storm water pH control and as a shrouding gas to address quality issues at Castrip. Neither the storm water pH control system nor the shrouding operation resulted in any production rate improvements or total production gain

AA No. 107-30459, issued on May 27, 2011

Replacement Ladle Dryers - This project is a like-kind replacement of burners used to dry newly installed refractory liners in ladles prior to use with steel. It is an off-line process with no production impact.

SSM No. 107-29766-00038, issued on April 4, 2011

Steel Technologies Cleaner Section project - This project involves adding a cleaner section to the leveler/straightener line located at Steel Technologies. Its need is to meet the customer's quality requirements for surface cleanliness. This cleaning section was permitted in 2009 but was never installed. The project was redesigned and re-permitted in 2012. It does not affect the production rate or total production of steel from the facility.

The above projects arose out of separate planning efforts to address quality issues, and reduce costs in different areas of the Crawfordsville mill. Due to the recent recession these cost saving projects were hurried through the corporate planning process and implemented as soon as possible to minimize losses and maintain profitability. The DRI material handling project, on the other hand, was tied to the initiation of construction of the DRI facility in Louisiana, with a corresponding need to install material handling facilities capable of handling the quantity of DRI product potentially destined for Crawfordsville. The timing was thus dictated primarily by the actions of the Louisiana Department of Environmental Quality and the U.S. EPA in issuing and reviewing permits for the Louisiana facility.

The proposed project in this PSD permitting action, on the other hand, involves potential production increases. The timing on these projects is in response to the improving economy and the availability of capital from Nucor Corporation that was not previously available for capacity expansion during the 2008-2011 recession period. Events in middle to late 2011 led the company to believe that market conditions may improve in 2013. Accordingly, the company initiated planning to ensure it is properly placed for improved market conditions

Based upon this justification IDEM determined that all of the projects grouped into each administrative amendment, significant source modifications or this proposed PSD project are separate and independent. All have arisen out of separate planning processes driven by the exigencies of the recessionary period, initiation of construction of a supply facility, or projects necessary to position the Crawfordsville mill for a potential market revival in 2013 or 2014 .

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

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."
The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	PTE Unpermitted Emission units (ton/yr)	PTE New Emission Units (tons/yr)	Total PTE
PM	1.08	0.03	1.11
PM10	1.08	0.10	1.18
$PM_{2.5}$	1.08	0.10	1.18
SO_2	1.01	0.01	1.02
VOC	1.24	0.08	1.32
CO	3.28	1.15	4.43
NO_X	15.23	1.37	16.6
Worst HAP	0.004 *Formaldehyde	0.0247 Hexane	0.0247 Hexane
Combined HAPs	0.013	0.0259	0.0389

* No Hexane is emitted

PTE Change of the Modified Process			
Pollutant	**PTE Before Modification** (ton/yr)	**PTE After Modification (ton/yr)**	**Increase from Modification (ton/yr)**
PM	346.7	454.5	108.2
PM_{10}	128.7	170.1	41.4
$PM_{2.5}$	124.4	163	38.5
SO_2	0.08	0.15	0.07
VOC	0.71	1.42	0.70
CO	10.82	21.64	10.82
NO_X	12.88	25.76	12.88

Total PTE Increase due to the Modification			
Pollutant	**PTE Unpermitted/New Emission Units (ton/yr)**	**Net Increase to PTE of Modified Emission Units (ton/yr)**	**Total PTE for New and Modified Units (ton/yr)**
PM	1.11	108.2	109.31
PM_{10}	1.18	41.4	42.58
$PM_{2.5}$	1.18	38.5	39.68
SO_2	1.02	0.07	1.09
VOC	1.32	0.70	2.02
CO	4.53	10.82	15.35
NO_X	16.6	12.88	29.5

Appendix A of this TSD reflects the unrestricted potential emissions of the modification.

No calculations for the potential change in PTE from the Meltshop because no increase in the throughput is anticipated from this modification.

(a) This source modification is subject to 326 IAC 2-7-10.5(g)(1), (4), since the modification is subject to 326 IAC 2-2. Further, at least one (1) pollutant PTE is equal to or greater than 25 tons per year.

(b) The modification will be incorporated into the Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12(d)(1) because it does not qualify as a minor permit modification or as administrative amendment and it involves case-by-case determination of PSD BACT emission limitations.

Permit Level Determination – PSD

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

	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**	
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
ACTUAL TO POTENTIAL (ATP) TEST (ton/yr) - MODIFIED UNITS/INCREASE UTILIZATION									
BASELINE ACTUAL EMISSISONS									
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	69,469.63	--
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									
Castrip Caster	0.044	0.044	0.044	-	-	-	-		--

	PM	PM10	PM2.5	VOC	CO	SO2	NOx	GHGs (CO2e)	Pb
Total Baseline Actual (West Plant)	120.64	120.64	113.91	69.45	1,163.85	196.01	207.35	330,869.06	0.035
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	103,686.0	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									
Castrip Caster	0.122	0.122	0.122	-	-	-	-		--
Total PTE	**412.96**	**416.25**	**405.39**	**337.40**	**4,513.31**	**726.42**	**907.41**	**620,465.19**	**1.05**
Emissions Increase from Modified Emission Units (ATP)	**292.32**	**295.61**	**291.48**	**267.95**	**3,349.46**	**530.41**	**700.06**	**289,596.13**	**1.02**
Total Emission Increase From Project (Hybrid Test)	**293.65**	**297.67**	**293.54**	**269.89**	**3,363.56**	**531.49**	**728.18**	**305,716.00**	**1.02**
PSD Significant Levels	**25**	**15**	**10**	**40**	**100**	**40**	**40**	**75,000**	**0.6**

Meltshop- includes emissions from the EAFs, LMFs, AOD, Desulfurization and Casters, all venting into the EAF baghouses.

*$PM_{2.5}$ listed is direct $PM_{2.5}$.

Based on the hybrid test, this modification to an existing major stationary source is major for Prevention of Significant Deterioration under 326 IAC 2-2-1 for PM, PM10, PM2.5 VOC, SO2, CO and Pb.

Federal Rule Applicability Determination

NSPS:

(a) **40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

This rule applies to manufacturers, owners and operators of stationary CI ICE that commence construction (date the engine was ordered) as specified below:

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of §60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(5) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

The following generators are not subject to the provisions of this NSPS because each engine model year or manufactured date, predates the applicability of this rule (April 1, 2006 for not fire pumps and July 1, 2006 for fire pump engines):

Generators ID	Site Rating (HP)	Model/Manufactured/ Constructed Year	Engine Displacement
Lip Seal Generator, GEN #5	30	1988	not known
Guard House Generator, GEN #6	67	2005	1
Transfer Car Generator, GEN #8	99	2002	
Emergency VTD Generator, GEN #7	134	2003	1

Note: The transfer car generator is a non-emergency unit. It is used throughout the year as it is the only source of power for the transfer car.

(b) 40 CFR Part 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

This rule applies to manufacturers, owners and operators of stationary CI ICE that commence construction (date the engine was ordered) as specified below:

(1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008.

(2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:

(i) On or after July 1, 2008; or
(ii) On or after January 1, 2009, for emergency engines.

(3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) On or after January 1, 2009, for emergency engines.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

(5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.

(6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

(7) The provisions of this subpart are not applicable to stationary SI ICE being tested at an engine test cell/stand.

(8) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(9) For the purposes of this subpart, stationary SI ICE using alcohol-based fuels are considered gasoline engines.

(10) Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 90 and 1048, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(11) Owners and operators of facilities with internal combustion engines that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

The lip seal generator, guard house generator, VTD generator and transfer car generator are not subject to NSPS, Subpart JJJJ because they are not spark ignition (SI) combustion engines.

(c) This modification will not affect the NSPS already determined for the existing emission units being modified, and there are no additional NSPS that will be applicable to the existing emission units as a result of this source modification.

NESHAP:

(a) 40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE).

The following generators and pump with a site rating of equal to or less than 500 brake HP located at a major source with commencement of construction before June 12, 2006

Generator ID	Site Rating (HP)	Model/Manufactured/Constructed Year
Transfer Car Generator, GEN #8	99	2002

Note: The transfer car generator is a non-emergency unit. It is used throughout the year as it is the only source of power for the transfer car.

Nonapplicable portions of the NESHAP will not be included in the permit. The following requirements shall apply to the non-emergency Transfer car Generator with compliance date no later than May 3, 2013:

(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)(1), (h), (i)
(7) 40 CFR § 63.6640(a), (b), (e)
(8) 40 CFR § 63.6645(a)(5)
(9) 40 CFR § 63.6655, except (c) and (f)
Table 2c to Subpart ZZZZ, item (2)
Table 6 to Subpart ZZZZ, item 9
General Provisions (40 CFR Part 63) - Table 8, 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)

Nonapplicable portions of the NESHAP will not be included in the permit. The following requirements shall apply to the following backup Generators with compliance date no later than May 3, 2013.

Generators ID	Site Rating (HP)	Model/Manufactured/ Constructed Year	Engine Displacement
Lip Seal Generator, GEN #5	30	1988	not known
Guard House Generator, GEN #6	67	2005	1
VTD Generator, GEN #7	134	2003	1

(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)
(8) 40 CFR § 63.6645(a)(5) (for Lip seal and Guard House Generators -<100 HP)
40 CFR § 63.6645(a)(1) (for VTD Generator -<500 HP)
(9) 40 CFR § 63.6655, except (c)
Table 2c to Subpart ZZZZ, item (1)
Table 6 to Subpart ZZZZ, item 9
General Provisions (40 CFR Part 63) - Table 8, 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)

(b) This modification will not affect the NESHAPs already determined for the source, and there are no additional NESHAPs that will be applicable to the source as a result of this source modification.

Compliance Assurance Monitoring (CAM)

(a) 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 CAM applicability determinations made in Part 70 No.107-30293-00038, issued on June 1, 2012 will not be affected by this modification because the potential to emit from existing modified emission units will not change.

State Rule Applicability Determination

(a) 326 IAC 2-2 (PSD)
Nucor Steel began operation in 1989. Nucor Steel belongs to one of the twenty-eight (28) listed source categories with a PSD major source threshold of 100 tons per year. Nucor Steel is an existing major PSD source. This modification is subject to 326 IAC 2-2-3 PSD BACT (Control Technology Review Requirements) for PM, PM10, PM2.5, SO2, VOC, NOX, CO and GHG (CO2e), since PTE from these pollutants are each at PSD significant level.

(b) 326 IAC 2-2-3 (Control Technology Review Requirements)
Section 3 of this rule requires that the major modification shall apply for each regulated NSR pollutant for which the modification would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase of the pollutant would occur as a result of a physical change or change in the method of operation in the unit.

(c) 326 IAC 2-2-4 (Air Quality Analysis Requirements)
Section (4)(a) of this rule, requires that the PSD application shall contain an analysis of ambient air quality in the area that the major stationary source would affect for pollutants that are emitted at major levels or significant amount. Nucor Steel has submitted an air quality analysis, which has been evaluated by IDEM's Technical Support and Modeling Section.

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

(1) Any estimates of ambient air concentrations used in the demonstration processes required by this section shall be based upon the applicable air quality models, data bases, and other requirements specified in 40 CFR Part 51, Appendix W (Requirements for Preparation, Adoption, and Submittal of Implementation Plans, Guideline on Air Quality Models)*.

(2) Where an air quality impact model specified in the guidelines cited in subdivision (1) is inappropriate, a model may be modified or another model substituted provided that all applicable guidelines are satisfied.

(3) Modifications or substitution of any model may only be done in accordance with guideline documents and with written approval from U.S. EPA and shall be subject to public comment procedures set forth in 326 IAC 2-1.1-6.

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

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

(g) 326 IAC 2-2-8 (Source Obligation)

(1) Pursuant to 2-2-8(1), approval to construct, shall become invalid if construction is not commenced within eighteen (18) months after receipt of the approval, if construction is discontinued for a period of eighteen (18) months or more, or if construction is not completed within a reasonable time.

(2) Approval for construction shall not relieve the Permittee of the responsibility to comply fully with applicable provisions of the state implementation plan and any other requirements under local, state, or federal law.

(h) 326 IAC 2-2-10 (Source Information)
The Permittee has submitted all information necessary to perform an analysis or make the determination required under this rule.

(i) 326 IAC 2-2-12 (Permit Rescission)
The permit issued under this rule shall remain in effect unless and until it is rescinded, modified, revoked, or it expires in accordance with 326 IAC 2-1.1-9.5 or section 8 of this rule.

(j) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The proposed new generators; Generator Lip Seal with site rating of 30 HP, Generator Guard House with a site rating of 67 HP, Generator Transfer Car with a site rating of 99 HP and Generator VTD with site rating of 134 HP are not subject to 326 IAC 6-3, because they are subject to a more stringent particulate emission limitations under 326 IAC 2-2-3, PSD best available control technology (BACT).

(k) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

The proposed new generators; Generator Lip Seal with site rating of 30 HP, Generator Guard House with a site rating of 67 HP, Generator Transfer Car with a site rating of 99 HP, Generator VTD with site rating of 134 HP and the additional thirty (30) Tundish Preheaters are not subject to 326 IAC 6-2 because they are not sources of indirect heating.

(l) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The operation of the unpemitted generators; Generator Lip Seal with site rating of 30 HP, Generator Guard House with a site rating of 67 HP, Generator Transfer Car with a site rating of 99 HP, Generator VTD with site rating of 134 HP and the additional thirty (30) Tundish Preheaters emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

(m) 326 IAC 7 (Sulfur Dioxide Emission Limitations)
This rule applies to all emission units with potential to emit 25 tons per year or 10 tons per hour of sulfur dioxide.

This rule does not apply to the diesel fired emergency generators because they do not have the potential to emit 25 tons per year or 10 tons per hour of sulfur dioxide.

Compliance Determination and Monitoring Requirements

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

Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

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

The Compliance Determination Requirements applicable to the existing modified emission units will remain as follows:

Existing Emission Units Affected by this Modification				
Emission Unit	**Control Device**	**Pollutant**	**Frequency of Testing/ Monitoring**	**Monitoring**
D.1 -Vacuum Degasser	Flare	CO	2.5 years after most recent stack test	Presence of flare pilot flame shall be monitored
D.4 - Castrip LMS	Baghouse	PM, Lead	2.5 years after most recent stack test	Visible Emission Notation (VEN) of LMS-2 Baghouse and Pressure drop reading and recording
	No Control	NOx, CO, SO2	1 time testing	
D.7 Coil and Scrap Cutting, CC-1	Baghouse	PM and PM10	2.5 years after most recent stack test	Visible Emission Notations of MSS-1 uncontrolled exhaust and CC-1 baghouse and Pressure drop reading and recording
D.12 clean shred scrap plant	No control	particulate	once/day VEN	Visible Emission Notations of clean shred scrap plant and scrap cutting
D.15 Pickling Lines 1 and 2	Scrubbers and Mist Eliminators	HCl in Particulate form	Pressure drop, recirculating water flow rate and makeup water flow rate	Scrubber Failure Detection
D.29 Meltshop Operation (EAFs, LMFs, AOD, CC, Preheaters and Dryers, EAF Dust Treatment)	Meltshop Baghouses 1 and 2	PM, PM10, lead,	Once every 2.5 years from most recent stack test	VEN, Pressure Drop, BLDS, opacity (Method 9)
	No Control	CO, NOx, SO2	Continuous reading	CEMS

These monitoring conditions are necessary to meet the PSD BACT established, pursuant to 326 IAC 2-2-3 and to avoid the requirements of 326 IAC 2-2.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 107-30293-00038 to incorporate PSD/SSM No. 107-32615-00038. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Section A.2 Changes:

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; **and**

~~(e) Heritage Environmental Services, the supporting operation, is located at 4537 South Nucor Road, Crawfordsville, Indiana, 47933; and~~

~~(f) Melt Solution, LLC, 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 **and** LINDE Gases, ~~Heritage Environmental Services and Melt Solution, LLC~~. The plant ID for the combined source is 107-00038.

Section A.3 Changes:

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, ~~to be modified~~ **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, ~~and operates with a minimum temperature of 1,400 °F.~~ The flare only operates when the vacuum degasser is under negative pressure (i.e., when CO must be controlled).

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

*** * ***

(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 th~~e lime silo, SAS#1 to be controlled by the bin vent filter~~. **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, ~~to be modified~~ **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)** ~~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 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 at wider widths**, **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.

Section D.7 has been amended to incorporate the increase in capacity of TSP-8 screen. In addition the mill scale screen has been deleted since it is no longer in operation.

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 water sprays and exhaust to the atmosphere.

Approved in 2011 for modification to add two (2) conveyors, 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.

~~(q) One (1) mill scale screen and conveyor system, identified as MSS-1, constructed in 2001, with a maximum throughput rate of 350 tons of mill scale per hour, with emissions uncontrolled, and exhausting to the atmosphere.~~

(~~r~~**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.

(~~s~~**r**) 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 rated capacity of 350 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.

(~~t~~**s**) 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.

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.

The clean shred scrap plant and its requirements have been deleted from the permit since it was never constructed.

~~D.12 – CLEAN SHRED SCRAP PLANT~~

~~(w) Clean shred scrap plant, permitted for construction in 2009 consisting of the following:~~

~~(1) One (1) loading pan with a maximum design throughput rate of 300 tons per hour, loaded by batch drop from front end loader, crane or truck, controlled by water sprays.~~

~~(2) Three (3) magnetic sorters and associated conveyor belts with a maximum design throughput rate of 300 tons per hour, with a total of eighteen (18) drop points. Water sprays will be used at the first conveyor belt in quantities sufficient enough that no additional water is necessary at the remaining downstream drop points.~~

~~This additional clean shred scrap plant will be used to sort scrap and scrap substitutes. This will also increase the size of the scrap metal storage area. However, it will not increase steel production since it does not increase the amount of scrap that can be supplied to the EAFs for melting.~~

D.13 – ~~EMERGENCY~~ GENERATORS

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

(1) Cold Mill C**ooling 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 ~~Cold Well~~ **emergency** generator, identified as GEN #2, constructed in 1996, with a capacity of 2,520 HP, with emissions uncontrolled.

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

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

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

(8i) Transfer Car non-emergency generator, identified as GEN #8, constructed in 2002 with a capacity of 99 HP with emissions uncontrolled,

SECTION 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.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.

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.

~~(z1) One (1) natural gas-fired Steel Technologies boiler with a maximum heat input capacity of 10.9 million British thermal units per hour (MMBtu/hr), constructed in 1994 and re-permitted under Nucor Steel in 2008.~~

~~Under 40 CFR Part 60, Subpart Dc, unit in (z1) is considered steam generating unit.~~

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 strips 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 ~~200~~ **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.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**,** ~~and~~ 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, ~~and~~ 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, ~~and~~ 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, ~~and~~ 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 MMBtu per hour for a total of 30 MMBtu per hour 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

(~~1~~**7)** Seven (7) small charge buckets, five (5) buckets constructed in 1989 and two (2) charge buckets approved for construction in 2007.

(~~2~~**8**) Three (3) additional large charge buckets used for single furnace charges on both EAFs, approved for construction in 2007.

(~~3~~**9**) Twenty-five (25) EAFs ladles, twenty-one (21) constructed in 1989, four (4) ladles approved for construction in 2007.

(~~4~~ **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.

(~~5~~**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.**

(~~3~~**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** ~~roof vent/monitor~~ 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.

(~~4~~**5**) The fugitive emissions generated during the **EAF** furnace operations are captured by the Meltshop Roof Canopies or contained within the Meltshop Building.

(~~5~~**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** ~~roof vent/monitor~~ identified as vent 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 identified as vent BH1 which exhausts to a ~~roof vent/monitor~~ **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 Casrtip LMS or VTD.**

(rr) An EAF dust **transfer** ~~treatment facility~~ **facilities**, identified as DTF, constructed in 2004, ~~with a capacity of 100,000 lb/hour~~, with emission control by bin vents for the silos, ~~scrubber for dust treatment~~ 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.**

~~(3) From silo to truck through a loading spout to transfer to the existing Meltshop Baghouses. Unloading from the truck at the existing Meltshop Baghouses also occurs in the building, transferring the dust through augers and a bucket elevator to the existing silo. In this option, the existing EAF dust treatment will have a maximum capacity of 100,000 lb/hr.~~

~~(4) Treating dust at the new silo and transferring to a truck. No loading spout is necessary because the material is no longer dusty, as treated.~~

~~The EAF dust treatment facility consists of the following:~~

~~(A) One (1) lime storage silo, identified as HRE #1, constructed in 1999, with a maximum capacity of 109 tons, emissions controlled by a bin vent filter, and exhausting to stack HR/E-2. Lime is pneumatically loaded to the silo at a maximum transfer rate of 40,000 pounds per hour.~~

~~(B) One (1) pugmill, identified as PM, constructed in 1999, with a maximum capacity of 100,000 pounds per hour, emissions controlled by one (1) venturi scrubber, and exhausting to stack HR/E-1. Lime is transferred to the pugmill via a screw conveyor system at a maximum transfer rate of 5,100 pounds per hour and EAF dust is transferred to the pugmill via gravity through an enclosed cone bottom loading spout at a maximum transfer rate of 100,000 pounds per hour.~~

(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**.

(3) Five (5) Tundish Preheaters, identified as TP1 - TP5, constructed in 1995, **approved in 2013 for modification by increasing each heater heat input capacity from** ~~each with a heat input capacity of~~ 6 MMBtu per hour **to 12 MMBtu/hr**, 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) ~~Four (4)~~ **Eight (8)** Tundish Nozzle Preheaters, identified as TNP #1- #~~4~~ **#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.

* * *

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.

~~(c) One (1) cleaner/degreaser, permitted for construction in 2009, with one (1) heated cleaning section, with two (2) 4.8 MMBtu/hr natural gas-fired burners, with burners venting inside the building and one (1) cold cleaning section, consisting of cleaning and rinsing, with a mist eliminator, AC-02 rated at 0.003 grain per dry standard cubic foot (gr/dscf), venting into the atmosphere, and~~

(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 – Melt Solution, LLC B-Scrap Beneficiation operations approved in 2011 for construction**~~

~~(a) Material handling process with one (1) Front End-Loader, identified as BSBP-1, with a maximum throughput rate of 100 tons per hour;~~

~~(b) Two (2) conveyor belts with magnetic separator, identified as BSBP-2, with a maximum throughput rate of 100 tons per hour;~~

~~(c) One (1) jaw crusher, identified as BSBP-3, with a maximum throughput rate of 100 tons per hour;~~

~~(d) One (1) screener, identified as BSBP-4, with a maximum throughput rate of 100 tons per hour;~~

~~(e) One (1) 425 brake horsepower (BHP) diesel fuel-fired generator, identified as BSBP-5.~~

~~This process involves further processing of the finished product from the existing Slag Processing, EU-10.~~

D.32 ~~D.33 -~~ Direct Reduced Iron (DRI) Handling System

Section A.4 Changes:

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) Baghouse #1 lime silo (HRE #1).~~

(~~3~~**2**) One (1) Iron Oxide Silo (IOS #1).

(~~4~~**3**) Three (3) Baghouse Dust Silos (BHS#1, BHS#2, BHS#3).

(~~5~~**4**) One (1) Lime Silo (#1 SEAF).

(~~6~~**5**) One (1) Lime Silo (#2 SEAF).

(~~7~~**6**) One (1) Lime Silo (#3 NEAF).

(~~8~~**7**) One (1) Lime Silo (#4 NEAF).

(~~9~~**8**) One (1) Injection Carbon Silo #1**,** with bin vent filter and capacity of 3,625 cubic feet, permitted in 2010 for construction.

(~~10~~**9**) One (1) Injection Carbon Silo #2**, approved in 2013 for replacement**.

(~~11~~**10**) One (1) Charge Carbon Silo #1**, approved in 2013 for replacement**.

(~~12~~**11**) One (1) Charge Carbon Silo #2**, approved in 2013 for replacement**.

(~~13~~**12**) Three (3) AOD alloy system silos (AOD#1, AOD#2, and AOD#3).

(~~14~~**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. 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

* * *

(4) One (1) 1,000 gallon diesel storage tank handling less than 500 gallons per day, installed in 2010.

* * *

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.
(ii) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000 Btu per hour.

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

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

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

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

(h) Closed loop heating and cooling systems.

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

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

(k) 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.

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

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

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

(o) Heat exchanger cleaning and repair.

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

(q) 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.

(r) 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.

(s) 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.

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

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

(i) On-site fire training using fire extinguisher.
(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.

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

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

(x) Portable blast cleaning equipment with enclosures.

(y) Indoor and outdoor kerosene heaters.

(z) Rolling oil recovery systems.

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

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

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

(dd) 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.

Section D.0 has been added in the permit to address GHG source-wide emissions:

SECTION D.0 EMISSIONS UNIT OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]: Entire Source **Plant-Wide Combustion Sources** **Meltshop Station** **CASTRIP- LMS** **(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) The use of natural gas, and diesel as the main fuels, kerosene and the use of

propane as backup fuels for all combustion sources at the plant.

(B) Source-wide Greenhouse GHG (COe2) emissions shall not exceed 931,316 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance Determination Requirements

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

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

CO2 emissions from Meltshop Baghouses 1 and 2 using CO2 CEMS readings + CO2e emissions calculated from the total Natural Gas usage + Propane usage + No. 2 Fuel Oil usage + kerosene usage in all combustion sources at the plant + mass balance calculation for GHG at the Castrip VTD (carbon in) and Castrip LMS (carbon out).

where:

Natural gas CO2e =(CO2 x CO2 GWP (1) +N2O x N2O GWP (310) +CH4 x CH4 GWP (21)

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

(a) To document the compliance status with Condition D.0.1, the Permittee shall maintain records of the readings of the GHG CEMS in pounds per hour.

(b) To document the compliance status with Condition D.0.1, the Permittee shall maintain records of each fuel usage.

D.0.6 Reporting Requirements

(a) 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(34).

(b) The Permittee shall submit a quarterly report of excess sourcewide CO2 emissions based upon the CO2 CEMS readings, using the Quarterly Deviation and Compliance Monitoring Report or equivalent.

This report 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(34).

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: Plantwide
Parameter: GHG (CO2e) Emissions
Limit: Shall not exceed 931,316 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
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: ________________________________

Section D.1 Changes:

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

CASTRIP – VACUUM DEGASSER AND FLARE

(a) One (1) vacuum degasser with process gas lances, identified as V #1, constructed in 2004, ~~to be modified~~ **approved** in 2006 **for modification**, **approved in 2013 for modification to incorporate fluoride additions** 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, ~~and operates with a minimum temperature of 1,400 °F~~. The flare only operates when the vacuum degasser is under negative pressure (i.e., when CO must be controlled).

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

Section D.3 Changes:

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]:
CASTRIP – PREHEATERS, DRYERS, AND ALLOY UNLOADING

* * *

(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 lime silo, SAS#1 to be controlled by the bin vent filter~~. **the Castrip Baghouse**

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

IDEM, Compliance and Enforcement Branch has decided to delete the testing requirements in Condition D.3.11 and parametric monitoring in Condition D.3.13 for the Bin Vent Filter because the particulate emissions from the lime silo screw auger will be re-routed to the Castrip Baghouse in Section D.4 for control. The Castrip Baghouse has its own monitoring requirements.

*** * ***

Compliance Determination Requirements

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

~~Within sixty (60) days after achieving maximum production rate but no later than one hundred eighty (180) days after initial startup of the Screw Auger for the Lime Silo SAS #1, permitted in SSM 107-31415-00038, the Permittee shall conduct performance test for PM10 and PM2.5 on the Lime Silo SAS #1 bin vent filter, controlling the Screw Auger to verify compliance with the~~

~~PM10 and PM2.5 emission limits in Condition D.3.9, utilizing methods as approved by the Commissioner. These tests shall be repeated once every 5 years from the date of 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.3.~~12~~**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.

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

~~D.3.13 Bin Vent Filter Parametric Monitoring~~

~~The Permittee shall record the pressure drop across the Lime Silo, SAS #1 bin vent filter used in conjunction with the Screw Auger for Lime Silo SAS #1 at least once per day when the Screw Auger 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. 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.3.~~14~~**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) To document the compliance status with Condition D.3.13, the Permittee shall maintain once per day records of the pressure drop across the Lime Silo, SAS #1 bin vent filter used in conjunction with the Screw Auger for Lime Silo SAS #1 during normal operation and the reason for the lack of pressure drop notation (e.g. the process did not operate that day).~~

(~~c~~ **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 Changes:

SECTION D.4 FACILITY OPERATION CONDITIONS

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

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, ~~to be modified~~ **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 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.)

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 ~~filterable PM/PM$_{10}$~~ **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 ~~filterable and condensable PM/PM$_{10}$~~ **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.4.5 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.4.8 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 performance tests on the LMS-2 baghouse associated with the continuous strip caster CS-1 for PM, PM10, PM2.5 and Pb, to demonstrate compliance with Conditions D.4.1(d), (e) and D.4.5(a), utilizing EPA Methods or other methods as approved by the Commissioner.**

(b) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct ~~PM and~~ opacity compliance stack tests for the LMS-2 baghouse stack (S-

20) to demonstrate compliance with the emission limitations in ~~Conditions D.4.1(d), and~~ D.4.1(f), utilizing methods as approved by the Commissioner.

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.

~~(b) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct particulate testing to demonstrate compliance with the emission limitations in Condition D.4.1(e), using a modified EPA Method~~**~~s~~** ~~5 of 40 CFR Part 60, Appendix A. Method 5 is modified to prevent the condensation of particulate matter after the filter, thereby facilitating the capture of all particulate matter fractions on the nozzle, probe and filter. The probe and filter temperature is maintained at or below 85 degrees Fahrenheit (^{0}F). The impinger temperature exit gas is maintained at or below 68 ^{0}F for volumetric/gravimetric moisture determination. The nozzle, probe liner and glass filter holder are rinsed with acetone and captured in seal glass container.~~ **or other methods as approved by the commissioner.**

(c) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct ~~Lead~~, Mercury, Beryllium and Fluoride testing on the LMS-2 baghouse controlling the Castrip to demonstrate compliance with Condition D.4.5**(b) through (d).**

~~(d) The particulate testing required to demonstrate compliance with Condition D4.1(d) shall be performed utilizing 40 CFR Part 60, Appendix A, Method 5, Method 201 or Method 201A.~~

(~~e~~**d**) All compliance stack tests shall be repeated at least once every 2.5 years from the date of a 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.

Section D.5 Changes:

SECTION D.5 FACILITY OPERATION CONDITIONS

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

INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS

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

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

~~(2) Baghouse #1 lime silo (HRE #1).~~

(~~3~~**2**) One (1) Iron Oxide Silo (IOS #1).

(~~4~~ 3) Three (3) Baghouse Dust Silos (BHS#1, BHS#2, BHS#3).

(~~5~~**4**) One (1) Lime Silo (#1 SEAF).

(~~6~~**5**) One (1) Lime Silo (#2 SEAF).

(~~7~~**6**) One (1) Lime Silo (#3 NEAF).

(~~8~~**7**) One (1) Lime Silo (#4 NEAF).

(~~9~~**8**) One (1) Injection Carbon Silo #1**,** with bin vent filter and capacity of 3,625 cubic feet, permitted in 2010 for construction.

(~~10~~**9**) One (1) Injection Carbon Silo #2**, approved in 2013 for replacement**.

(~~11~~**10**) One (1) Charge Carbon Silo #1**, approved in 2013 for replacement**.

(~~12~~**11**) One (1) Charge Carbon Silo #2**, approved in 2013 for replacement**.

(~~13~~**12**) Three (3) AOD alloy system silos (AOD#1, AOD#2, and AOD#3).

(~~14~~**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.)

Section D.6 Changes:

SECTION D.6 FACILITY OPERATION CONDITIONS

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

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.)

Section D.7 Changes:

All references to the Mill Scale have been removed since it has been removed from operation.

SECTION D.7 FACILITY OPERATION CONDITIONS

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

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 water sprays and exhaust to the atmosphere.

Approved in 2011 for modification to add two (2) conveyors, 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.

~~(q) One (1) mill scale screen and conveyor system, identified as MSS-1, constructed in 2001, with a maximum throughput rate of 350 tons of mill scale per hour, with emissions uncontrolled, and exhausting to the atmosphere.~~

(~~r~~**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.

(~~s~~**r**) 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 rated capacity of 350 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.

(~~t~~**s**) 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.

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

~~D.7.2 Prevention of Significant Deterioration (PSD) Minor Limit [326 IAC 2-2]~~

~~Pursuant to MSM 107-15599-00038, issued April 10, 2002, the mill scale throughput rate to the mill scale screen and conveyor system (MSS-1) shall not exceed 1,092,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month. Compliance with this limit is equivalent to less than or equal to 18.8 tons/yr of PM emissions and less than or~~

~~equal to 9.0 tons/yr of PM10 emissions. Emissions from the 2002 modification limited to less than 25 tons per year of PM and 15 tons per year of PM10. Compliance with this limit renders the requirements of 326 IAC 2-2 not applicable.~~

D.7.~~3~~**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:

* * *

(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 condition ~~including Conditions D.7.7 and D.32.1~~ shall limit the PM, PM10 and PM2.5 emissions to less than 25 tons/year for PM, less than 15 tons/year for PM10 and less than 10 tons/year for PM2.5, which renders the requirements of 326 IAC 2-2 (PSD) not applicable to source modification permitted under SSM No. 107-29766-00038.

D.7.~~4~~**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 mill scale screen and conveyor system (MSS-1) shall not exceed 64.8 pounds per hour when operating at a process weight rate of 350 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 sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

D.7.~~5~~**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 10 drop points[1]	305 each drop point	63.18 each drop point
Screening Process, TSP-8	**600** ~~447~~	**71.2** ~~67.6~~
EU-10 Slag 25 Drop Points[5]	**600** ~~447~~ each drop point	**71.2** ~~67.6~~ each drop point
Grizzly	305	63.18
Blend Plant		
Material handling, Front End-Loader, BP-1	305	63.18
Blend Plant - 6 Conveying Drop Points[2]	305 each drop point	63.18 each drop point
Permanent Screening Plant		

Process/Facility	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Permanent Screening Plant[3]- Screen	**300** ~~60~~	**63.0** ~~46.3~~
Permanent Screening Plant[3]- 8 Conveying Drop Points	**300** ~~60~~ each drop point	**63.0** ~~46.3~~each drop point
Permanent Screening Plant[3]- Front End Loader	**300** ~~60~~	**63** ~~46.3~~
Coil and Scrap Cutting, CC-1	70	47.8
Replacement Screen, TSP-2	341	64.5
Conveying Process (5 drop points)[4]	305 each drop point	63.18 each drop point

Note: **Drop points #5 through #10 in Conveying Process with 10 drop[1] shall use process weight rate of **600** ~~447~~ tons/hour that is in EU-10 Slag 25 Drop Points[5]

Condition D.7.6 was required for engines that were part of the Temporary Screening operation that was replaced with the Permanent Screening operation and the generators are no longer on-site. Therefore, Condition D.7.6 has been deleted from the permit;

~~D.7.6 Nonroad Engines 326 IAC 12] [40 CFR 60, Subpart IIII] [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ] [40 CFR 1068.30]~~

~~In order to render the requirements of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII), which are incorporated by reference as 326 IAC 12, and the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), which are incorporated by reference as 326 IAC 20-82, not applicable and to ensure that Generator, TSP-3 as described in item (s) of this SECTION D.7, description box is nonroad engine, as defined in 40 CFR 1068.30, the Permittee shall comply with the following:~~

~~(a) The diesel fired generator, TSP-3 with power rating of 130 Brake Horsepower (BHP) shall remain at a location for a period not to exceed twelve (12) consecutive months.~~

~~(b) For the purposes of this condition and pursuant to 40 CFR 1068.30 Nonroad Engine (2)(iii), a location is any single site at a building, structure, facility, or installation.~~

~~Compliance with this condition shall render the requirements of 40 CFR 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) not applicable to this generator.~~

D.7.~~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

D~~.7.8 PM/PM10 Emissions~~

~~Compliance with Condition D.7.2 shall be demonstrated within 30 days of the end of each month based on the total throughput weight for the most recent twelve (12) consecutive month period.~~

D.7.~~9~~**6** Particulate Control [326 IAC 2-7-6(6)]

In order to comply with Condition ~~D.7.3(b)~~ **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.~~10~~**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.7.3(b)~~ **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.7.3(b)~~ **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.~~11~~**8** Particulate Matter (PM) Control [326 IAC 2-2] [326 IAC 6-3-2]

In order to ensure compliance with Conditions ~~D.7.3 and D.7.5,~~ **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 and PM_{10} emissions from the 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.~~12~~ **9** Visible Emissions Notations

(a) Visible emission notations of the exhausts from ~~MSS-1 and~~ 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.~~13~~ **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.~~14~~ **11**Record Keeping Requirements

(a) To document the compliance status with Condition~~s~~ D.7.2 ~~and D.7.3~~, the Permittee shall maintain records of the throughput weight to the ~~mill scale and~~ EU-10 Slag emission units for each compliance period.

(b) To document the compliance status with Condition D.7.~~12~~ **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.~~13,~~**10** the Permitee 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) The Permittee shall maintain records of the dates and locations of installation and removal of diesel fired generator, TSP-3.~~

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

D.7.~~15~~**12** Reporting Requirements

A quarterly report of throughput weight to the ~~mill scale and~~ EU-10 Slag emission units and a quarterly summary of the information to document the compliance status with Condition~~s~~ D.7.2 ~~and D.7.3~~, 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 (34).

Section D.8 Changes:

The typographical error in the limit found in Condition D.8.2(b)(2) has been corrected as follows:

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 ~~140~~ **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.

The daily record keeping for the fuel usage in D.8.4 has been changed to monthly, since the limit in Condition D.8.2 is not based on daily averaging time.

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 ~~day~~ **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.10 Changes:

SECTION D.10 FACILITY OPERATION CONDITIONS

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

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.12 Changes:

The clean shred scrap plant and its requirements have been deleted from the permit since it was never constructed.

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

~~(w) Clean shred scrap plant, permitted for construction in 2009 consisting of the following:~~

~~(1) One (1) loading pan with a maximum design throughput rate of 300 tons per hour, loaded by batch drop from front end loader, crane or truck, controlled by water sprays.~~

~~(2) Three (3) magnetic sorters and associated conveyor belts with a maximum design throughput rate of 300 tons per hour, with a total of eighteen (18) drop points. Water sprays will be used at the first conveyor belt in quantities sufficient enough that no additional water is necessary at the remaining downstream drop points.~~

~~This additional clean shred scrap plant will be used to sort scrap and scrap substitutes. This will also increase the size of the scrap metal storage area. However, it will not increase steel production since it does not increase the amount of scrap that can be supplied to the EAFs for melting.~~

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, Iron Carbide

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.

~~D.12.2 PM and PM10/PM2.5 Emissions Prevention of Significant Deterioration (PSD) Minor Limits [326 IAC 2-2]~~

~~The Permittee shall comply with the following particulate emission limits at the clean shred scrap plant:~~

~~Facility ID~~	~~Control ID~~	~~PM Emissions Limit (pound/hour)~~	~~PM10/PM2.5 Emissions Limit (pound/hour)~~
~~Sorters /Conveyors~~	~~Water application at initial transfer point~~	~~2.01~~	~~0.52~~
~~Loading pan~~	~~Water sprays~~	~~1.4~~	~~0.53~~

~~Compliance with these limits shall render the requirements of 326 IAC 2-2, not applicable with respect to PM and PM10/PM2.5 emissions.~~

~~D.12.3 Particulate [326 IAC 6-3-2]~~

~~(a) Pursuant to 326 IAC 6-3-2, the particulate emissions from the clean shred scrap plant sorters/conveyors shall be limited to 63.0 pounds per hour at process weight rate of 300 tons per hour.~~

~~This limitation is based on the following equation:~~

$\cancel{E = 55 P^{0.11} - 40}$ ~~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.~~

~~(c) Pursuant to 326 IAC 6-3-2, the particulate emissions from the insignificant scrap cutting shall not exceed the 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~~

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

~~D.12.4 Particulate Control for Clean Shred Scrap Plant~~

~~In order to comply with Condition D.12.2 and D.12.3, the Permittee shall apply water or use wet suppression system on the scrap prior to sorting in the clean shred scrap plant to control particulate emissions.~~

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

D.12.~~5~~**2** Visible Emissions Notations

(a) Visible emission notations of ~~the clean shred plant and~~ scrap cutting shall be performed once per day ~~when the clean shred plant is in operation or~~ 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.~~6~~**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.~~5~~ **2**, the Permittee shall maintain records of the once per day visible emission notations from ~~the clean shred plant and~~ 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

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

~~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** ~~cold well~~ generator, identified as GEN #2, constructed in 1996, with a capacity of 2,520 HP, with emissions uncontrolled.

(**5) Lip Seal backup generator, identified as GEN #5, with a capacity of 30 HP with emissions uncontrolled.**

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

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

(8) Transfer Car non-emergency generator, identified as GEN #8, constructed in 2002, with a capacity of 99 HP 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 backup generators, **identified as GEN #1 through GEN #7** shall solely provide backup power when electric power is interrupted, or during maintenance or testing of generators.

(b) Each backup generator, **identified as GEN #1 through GEN#7** 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, **identified as GEN #1 through GEN #8** shall not exceed 0.05% by weight.

(d) Good combustion practices shall be performed for all generators, **identified as GEN #1 through GEN #8**.

(e) Perform good management practices - tune-ups and inspections for generators, identified s GEN #5 through GEN #8 must be performed biennially.

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**) **To document the compliance status with Condition D.13.1(e) record the results of each tune-ups and inspections.**

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

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 Changes:

SECTION D.14 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(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.

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

Section D.15 Changes:

SECTION D.15 FACILITY OPERATION CONDITIONS

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

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.)

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~~s~~ 1 ~~and 2~~ (PL1**)** ~~and PL2)~~ shall comply with the following BACT requirements:

(~~a~~**1**) ~~Each p~~**P**ickling line (PL1**)** ~~and PL2)~~ shall be controlled by its own scrubber and with an exhaust grain loading of no greater than 0.01 gr/dscf.

(~~b~~**2**) **The pickling** ~~Each~~ tank shall operate with a closed vent system, covered by lids, and maintained under negative pressure, except during loading and unloading.

(~~c~~**3**) Loading and unloading shall be conducted either through enclosed lines or each point shall be controlled.

(~~d~~**4**) The visible emissions from each pickling line scrubber stack shall not exceed 5% opacity, based on a 6-minute average.

(~~e~~ **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 condensable) 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.

Section D.16 Changes:

SECTION D.16 FACILITY OPERATION CONDITIONS

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

COLD MILL – COLD REVERSING MILL 1, COLD MILL BOILER (CMB #1) ~~AND STEEL TECHNOLOGIES BOILER~~

(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.

~~(z1) One (1) natural gas-fired Steel Technologies boiler with a maximum heat input capacity of 10.9 million British thermal units per hour (MMBtu/hr), constructed in 1994 and re-permitted under Nucor Steel in 2008.~~

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

D.16.4 Particulate Matter Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

~~(a)~~ 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.

~~(b) Pursuant to 326 IAC 6-2-4, the PM emissions from the 10.9 MMBtu/hr Steel Technologies Boiler shall be limited to 0.293 pound per MMBtu heat input.~~

~~These~~**This** limitation~~s~~ ~~are~~ **is** based on the following equation:

$Pt = 1.09 / Q^{0.26}$

where Pt = Pounds of particulate matter 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)

Although a boiler is removed from operation the value of Q does not change. Therefore, the Q below stays for informational purposes.

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)

Section D.22 Changes:

Emission unit in the Facility Description table, item (gg)(5) have been deleted since they were removed from operation.

SECTION D.22 FACILITY OPERATION CONDITIONS

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

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) emergency burners with a maximum heat input of 0.58 MMBtu/hr each in the Zinc Pot Section. The burners are natural gas fired and use propane as backup~~.

(~~6~~**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.)

Section D.25 Changes:

SECTION D.25 FACILITY OPERATION CONDITIONS

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

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 ~~200~~ **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 rolling 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.)

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 ~~any~~ 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.

~~(a) NOx emissions from tunnel furnaces No. 1 and No. 2 shall be limited to 140 pounds per million cubic feet of natural gas burned.~~

~~(b) NOx emissions from shuttle furnaces No. 1 and No. 2 shall be limited to 100 lbs per million cubic feet of natural gas burned.~~

(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 determined 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.

~~(c) Tunnel furnaces No. 1 and No. 2, shuttle furnaces No. 1 and No. 2, and the snub furnace shall burn natural gas as primary fuel and propane as back up fuel.~~

(~~d~~**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 ~~190~~ **100** lbs per million cubic feet of natural gas burned.

(b) The snub furnace shall be equipped and operated with low NOx burners.

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.29 Changes:

SECTION D.29 FACILITY OPERATION CONDITIONS

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

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, ~~and~~ 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, ~~and~~ 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, ~~and~~ 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, ~~and~~ 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 MMBtu per hour for a total of 30 MMBtu per hour 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**

(~~1~~**7)** Seven (7) small charge buckets, five (5) buckets constructed in 1989 and two (2)

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charge buckets approved for construction in 2007.

(~~2~~**8**) Three (3) additional large charge buckets used for single furnace charges on both EAFs, approved for construction in 2007.

(~~3~~**9**) Twenty-five (25) EAFs ladles, twenty-one (21) constructed in 1989, four (4) ladles approved for construction in 2007.

(~~4~~ **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.

(~~5~~**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.**

(~~3~~**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 ~~roof vent/monitor~~ **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

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exhausts to a stack identified as BH2.

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

(~~4~~ **5**) The fugitive emissions generated during the **EAF** furnace operations are captured by the Meltshop Roof Canopies or contained within the Meltshop Building.

(~~5~~**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 ~~roof vent/monitor~~ **stack i**dentified as ~~vent~~ 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 ~~roof vent/monitor~~ **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 increased 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 Casrtip LMS or VTD.**

(rr) An EAF dust **transfer** ~~treatment facility~~ **facilities**, identified as DTF, constructed in 2004, ~~with a capacity of 100,000 lb/hour~~, with emission control by bin vents for the silos, ~~scrubber for dust treatment~~ and baghouse for truck 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 through a loading spout **for offsite dust disposal.**

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

~~(3) From silo to truck through a loading spout to transfer to the existing Meltshop Baghouses. Unloading from the truck at the existing Meltshop Baghouses also occurs in the building, transferring the dust through augers and a bucket elevator to the existing silo. In this option, the existing EAF dust treatment will have a maximum capacity of 100,000 lb/hr.~~

~~(4)~~ Treating ~~dust at the new silo and transferring to a truck. No loading spout is necessary because the material is no longer dusty, as treated.~~

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~~The EAF dust treatment facility consists of the following:~~

~~(A) One (1) lime storage silo, identified as HRE #1, constructed in 1999, with a maximum capacity of 109 tons, emissions controlled by a bin vent filter, and exhausting to stack HR/E-2. Lime is pneumatically loaded to the silo at a maximum transfer rate of 40,000 pounds per hour.~~

~~(B) One (1) pugmill, identified as PM, constructed in 1999, with a maximum capacity of 100,000 pounds per hour, emissions controlled by one (1) venturi scrubber, and exhausting to stack HR/E-1. Lime is transferred to the pugmill via a screw conveyor system at a maximum transfer rate of 5,100 pounds per hour and EAF dust is transferred to the pugmill via gravity through an enclosed cone bottom loading spout at a maximum transfer rate of 100,000 pounds per hour.~~

(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 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

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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) ~~Four (4)~~ **Eight (8)** Tundish Nozzle Preheaters, identified as TNP #1- ~~#4~~ **#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.

(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**)** ~~particulate matter (PM)~~ 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**)** ~~PM10~~ 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.29.4 Meltshop EAF Dust and Alloy Handling~~/Treatment~~ 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 ~~and the Treatment 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.29.6 Ladle Preheaters PSD BACT [326 IAC 2-2]

* * *

(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 TPH~~4~~ **8**) 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) 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 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.

(~~1~~**5**) The Tundish Nozzle Preheaters (TPH1 through TPH8) shall only burn natural gas, except as specified below, and shall be limited to 0.8 million Btu per hour heat input each.

~~(2) PM/PM10 emissions from the Tundish Nozzle Preheaters (TPH1 through TPH4) shall be limited to 7.6 pounds per million cubic feet of natural gas burned, 0.02 pounds per hour (total).~~

~~(3) NOx emissions from the Tundish Nozzle Preheaters (TPH1 through TPH4) shall be limited to 100 pounds per million cubic feet of natural gas burned, 0.32 pounds per hour (total.~~

~~(4) CO emissions from the Tundish Nozzle Preheaters (TPH1 through TPH4) shall be limited to 84 pounds per million cubic feet of natural gas burned, 0.27 pounds per hour (total).~~

~~(5) VOC emissions from the Tundish Nozzle Preheaters (TPH1 through TPH4)) shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.02 pounds per hour (total).~~

~~(6) SO2 emission from the Tundish Nozzle Preheaters (TPH1 through TPH4) shall be limited to 0.6 lb per million cubic feet of natural gas burned, 0.002 pounds per hour (total).~~

(~~7~~**6**) Visible emissions shall not exceed 5% opacity, based on a 6-minute average.

~~(8) The Tundish Nozzle Preheaters (TPH1 through TPH4) shall only burn propane as a back-up fuel.~~

(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.

(~~1~~**5**) The Tundish Preheaters (TP1 through TP5) shall only burn natural gas, ~~except as specified below~~, and shall be limited to ~~6~~ **12**.0 million Btu per hour heat input each.

~~(2)~~ ~~PM/PM10~~ emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 7.6 pounds per million cubic feet of natural gas burned, ~~0.23~~ pounds per hour (total).

~~(3) NOx emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 100 pounds per million cubic feet of natural gas burned, 3.0 pounds per hour (total).~~

~~(4) CO emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 84 pounds per million cubic feet of natural gas burned, 2.5 pounds per hour (total).~~

~~(5) VOC emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.165 pounds per hour (total).~~

~~(6) SO2 emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 0.6 lb per million cubic feet of natural gas burned, 0.02 pounds per hour (total).~~

(~~7~~**6**) Visible emissions shall not exceed 5% opacity, based on a 6-minute average.

~~(8) The Tundish Preheaters (TP1 through TP5) shall only burn propane as a back-up fuel.~~

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

* * *

The dust treatment has been deleted since it is no longer performed at the plant. Dust is now sent offsite for disposal:

D.29.11 Meltshop EAF Dust Handling System and Dust ~~Treatment~~ **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 ~~Treatment~~ **Transfer** System ~~shall be equipped with a scrubber on the dust system and~~ shall incorporate baghouse(s) for evacuation on the truck loading buildings**.**

~~(c) Options for the dust transfer are:~~

~~(1) from silo to truck through a loading spout,~~

~~(2) from silo to railcar through a loading spout,~~

~~(3) from silo to truck through a loading spout to transfer to the existing Meltshop Baghouses. Unloading from the truck at the existing Meltshop Baghouses also occurs in the building, transferring the dust through augers and a bucket elevator to the existing silo. In this option, the existing EAF dust treatment will have a maximum capacity of 100,000 lb/hr.~~

~~(4) treating dust at the new silo and transferring to a truck. No loading spout is necessary because the material is no longer dusty, as treated.~~

(~~d~~**c**) **EAF** Dust transfer shall occur inside ~~the~~ 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 ~~and~~ 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) scrubber for dust treatment, and~~

(~~3~~ **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.**

~~Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct compliance stack 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 the following:~~

~~(1) Lead,~~

(~~2~~**1**) ~~Mercury,~~

~~(3~~**2**~~) Fluorides~~

~~(4~~**3**~~) Beryllium~~

~~(5) VOC~~

(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 ~~roof monitor~~ **stack** and Baghouse2 stack,

(2) Meltshop Roof monitor, and

(3) EAF Dust Handling System,

~~(d) The particulate testing required for condition D.29.1(a)(7)~~**)** ~~shall be performed utilizing 40 CFR Part 60, Appendix A, Method 5, Method 201 or 201A or other methods as approved by the Commissioner.~~

(e) ~~Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct particulate testing to demonstrate compliance with the emission limitations in Condition D.29.1(a)(8) shall be demonstrated by a modification of EPA Method~~**s** ~~5 of 40 C.F.R. Part 60, Appendix A.~~

~~Method 5 is modified to prevent the condensation of particulate matter after the filter, thereby facilitating the capture of all particulate matter fractions on the nozzle, probe and filter. The probe and filter temperatures are maintained at or below 85 degrees Fahrenheit. The impinger temperature exit gas is maintained at or below 68 degrees Fahrenheit for volumetric/gravimetric moisture determination. The nozzle, probe liner and glass filter holder are rinsed with acetone and captured in a sealed glass container.~~

(~~f~~**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.

(~~g~~**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.

(~~h~~**f**) ~~The PM, PM10, 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.~~ 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.

(~~i~~**h**) These tests shall be performed using methods as approved by the Commissioner.

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.

The dust treatment has been deleted since it is no longer performed at the plant. Therefore, the following conditions associated with this process have been deleted:

~~D.29.18 Scrubber Parametric Monitoring [326 IAC 2-7-5(3)(A)(iii)] [326 IAC 2-7-5(d)]~~

~~The Permittee shall continuously monitor the flow rate of the scrubbing liquid and record the flow rate as a 3-hour average when the EAF dust treatment facility is in operation. For the purposes of this condition, continuously means no less often than once per minute. When for any one reading, the flow rate is below the minimum of 10 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.~~

~~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 at least once annually.~~

~~D.29.19 Scrubber Detection [326 IAC 2-7-5] [326 IAC 2-7-6]~~

~~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.~~

Condition D.29.21(f) has been deleted since the dust treatment operation is no longer performed at the plant, instead the dust is loaded in trucks for offsite disposal:

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

D.29.21 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,

(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 EAF Dust Treatment scrubber and make available upon request to IDEM, OAQ, and the US EPA:~~

~~(1) The continuous flow rate records (on a 3-hour average basis) for the scrubber.~~

~~(2) Documentation of all reasonable response steps implemented for every flow rate reading that is outside of the range~~.

(~~g~~**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.

(~~h~~**g**) To document the compliance status with Condition ~~D.29.20~~ **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).

(~~i~~ **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.

(~~j~~ **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

Section D.31 Changes:

SECTION D.31 FACILITY OPERATION CONDITIONS

The source has requested the deletion of emission unit (c) from the description table since this unit will not be constructed.

Facility Description [326 IAC2-7-5(15)]

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) cleaner/degreaser, permitted for construction in 2009, with one (1) heated cleaning section, with two (2) 4.8 MMBtu/hr natural gas-fired burners, with burners venting inside the building and one (1) cold cleaning section, consisting of cleaning and rinsing, with a mist eliminator, AC-02 rated at 0.003 grain per dry standard cubic foot (gr/dscf), venting into the atmosphere, and~~

(**c**~~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.

(**d**~~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.

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

Section D.32 Changes:

The source has requested the deletion of Section D.32 since this operation will not be performed at the plant:

~~**SECTION D.32 FACILITY OPERATION CONDITIONS**~~

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

~~B-Scrap Beneficiation operations approved in 2011 for construction, performed by Melt Solution, LLC or by Whitesville Mill Service:~~

~~(a) Material handling process with one (1) Front End-Loader, identified as BSBP-1, with a maximum throughpu rate of 100 tons per hour;~~

~~(b) Two (2) conveyor belts with magnetic separator, identified as BSBP-2, with a maximum throughput rate of 100 tons per hour;~~

~~(c) One (1) jaw crusher, identified as BSBP-3, with a maximum throughput rate of 100 tons per hour;~~

~~(d) One (1) screener, identified as BSBP-4, with a maximum throughput rate of 100 tons per hour;~~

~~(e) One (1) 425 brake horsepower (BHP) diesel fuel-fired generator, identified as BSBP-5.~~

~~This process involves further processing of the finished product from the existing Slag Processing, EU-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.32.1 Prevention of Significant Deterioration (PSD) Minor Limit for PM, PM10 and PM2.5 Emissions [326 IAC 2-2]~~

~~(a) The PM, PM10 and PM2.5 emissions from the following emissions units associated with the B-Scrap Beneficiation process by Melt Solution, LLC 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)~~
~~Front End Loader - BSBP-1~~	~~150,000~~	~~0.0088~~	~~0.0043~~	~~0.0016~~
~~Conveyor, BSBP-2 (4 drop points)~~	~~150,000 (each drop point #1 - #4)[1]~~	~~0.003 (each drop point #1 - #4)[1]~~	~~0.0011 (each drop point #1 - #4)[1]~~	~~0.0011~~
~~screener (BSBP-4),~~	~~150,000~~	~~0.025~~	~~0.0087~~	~~0.0087~~
~~Crusher, BSBP-3~~	~~150,000~~	~~0.0054~~	~~0.0024~~	~~0.0024~~

~~[1] Four Drop Points~~
~~Drop point #1 front end loader to feed hopper of crusher~~
~~Drop point #2 hopper to crusher chamber~~
~~Drop point #3 crusher to belt conveyor~~
~~Drop point #4 magnetic separator of conveyor to steel and slag piles.~~

~~(b) The PM and PM10 emissions from Generator, BSBP-5 shall each not exceed 0.93 pound per hour and its operating hours shall not exceed 1,500 hours per twelve consecutive month period, with compliace at the end of each month.~~

~~Compliance with this condition and Condition D.7.3 shall limit the PM, PM10 and PM2.5 emissions to less than 25 tons/year for PM, less than 15 tons per year for PM10 and less than 10 tons per year for PM2.5 which renders the requirements of 326 IAC 2-2 (PSD) not applicable to SSM No. 107-29766-00038.~~

~~D.32.2 Prevention of Significant Deterioration (PSD) Minor Limit for Nitrogen Oxides (NOx) Emissions [326 IAC 2-2]~~

~~The NOx emissions from the 425 Brake Horsepower (BHP) diesel-fired generator, identified as BSBP-5 shall not exceed 13.17 pounds per hour and it shall not operate at more 1,500 operating hours per twelve (12) consecutive month period, with compliance determined at the end of each month.~~

~~Compliance with this condition shall limit the Nitrogen Oxides (NOx) emissions to less than 40 tons per year and render 326 IAC 2-2, PSD requirements not applicable.~~

~~D.32.3 Particulate Emissions Limitations [326 IAC 6-3-2]~~

~~Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from each of the following facilities shall not exceed the pound per hour limits listed in the table below:~~

~~Process/Facility~~	~~Process Weight Rate (tons/hour)~~	~~Particulate Emissions Limit (pounds/hour)~~
~~Material handling - one (1) Front End-Loader, identified as BSBP-1~~	~~100~~	~~51.27~~
~~Two (2) conveyor belts, identified as BSBP-2~~	~~100~~	~~51.27~~
~~One (1) jaw crusher, identified as BSBP-3~~	~~100~~	~~51.27~~
~~One (1) screener, identified as BSBP-4~~	~~100~~	~~51.27~~

~~The pound per hour limitation in the above table shall be calculated using 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:~~

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

~~D.32.4 Nonroad Engines 326 IAC 12] [40 CFR 60, Subpart IIII] [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ] [40 CFR 1068.30]~~

~~In order to render the requirements of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII), which are incorporated by reference as 326 IAC 12, and the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), which are incorporated by reference as 326 IAC 20-82, not applicable and to ensure that~~

~~Generator, BSBP-5 as described in item (e) of this SECTION D.32, description box is nonroad engine, as defined in 40 CFR 1068.30, the Permittee shall comply with the following:~~

~~(a) The diesel fired generator, BSBP-5 with power rating of 425 Brake Horsepower (BHP) shall remain at a location for a period not to exceed twelve (12) consecutive months.~~

~~(b) For the purposes of this condition and pursuant to 40 CFR 1068.30 Nonroad Engine (2)(iii), a location is any single site at a building, structure, facility, or installation.~~

~~Compliance with this condition shall render the requirements of 40 CFR 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) not applicable to this generator.~~

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

~~D.32.5 Record Keeping Requirements~~

~~(a) To document the compliance status with Condition D.32.1 the Permittee shall maintain records of the throughput to each of the material handling facilities (front end loader, BSBP-1), conveyor belts (BSBP-2), jaw crusher (BSBP-3), and screener (BSBP-4) each month.~~

~~(b) To document the compliance status with Condition D.32.2, the Permittee shall maintain records of the number of hours that the diesel-fired generator (BSBP-5) has operated each month.~~

~~(c) The Permittee shall maintain records of the dates and locations of installation and removal of diesel fired generator, BSBP-5.~~

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

~~D.32.6 Reporting Requirements~~

~~A quarterly report of the throughput from each of the B-Scrap Beneficiation emission units (BSBP-1, BSBP-2, BSBP-3 and BSBP-4) and hours of operation from generator, BSBP-5 and a quarterly summary of the information to document compliance with Condition D.32.1 and Condition D.32.2 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 records 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 Changes:

The following Steel Technologies boiler has been deleted since it was decommissioned and removed out of service:

SECTION E.1 FACILITY OPERATION CONDITIONS

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

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.

~~**COLD MILL – STEEL TECHNOLOGIES BOILER**~~

~~(z1) One (1) natural gas-fired Steel Technologies boiler with a maximum heat input capacity of 10.9 million British thermal units per hour (MMBtu/hr), constructed in 1994 and re-permitted under Nucor Steel in 2008.~~

Under 40 CFR Part 60, Subpart Dc, ~~these units are~~ **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.)

Section E.2 Changes:

SECTION E.2 FACILITY OPERATION CONDITIONS

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

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.)

Section E.3 Changes:

SECTION E.3 FACILITY OPERATION CONDITIONS

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

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, ~~and~~ 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, and 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, and 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, ~~and~~ 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 MMBtu per hour for a total of 30 MMBtu per hour 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

SECTION E.3 FACILITY OPERATION CONDITIONS

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

(~~1~~**7)** Seven (7) small charge buckets, five (5) buckets constructed in 1989 and two (2) charge buckets approved for construction in 2007.

(~~2~~**8**) Three (3) additional large charge buckets used for single furnace charges on both EAFs, approved for construction in 2007.

(~~3~~**9**) Twenty-five (25) EAFs ladles, twenty-one (21) constructed in 1989, four (4) ladles approved for construction in 2007.

(~~4~~ **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.

(~~5~~**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,**

SECTION E.3 FACILITY OPERATION CONDITIONS

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.

(~~3~~**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 ~~roof vent/monitor~~ **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.

(~~4~~ **5**) The fugitive emissions generated during the **EAF** furnace operations are captured by the Meltshop Roof Canopies or contained within the Meltshop Building.

(~~5~~**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 ~~roof vent/monitor~~ **stack i**dentified as ~~vent~~ 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 ~~roof vent/monitor~~ **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 increased by approximately 30,000 cubic feet per minute (cfm). **Approved in 2013 for modification to allow casting of wider strip of steel**

(rr) An EAF dust **transfer** ~~treatment facility~~ **facilities**, identified as DTF, constructed in 2004, with a capacity of 100,000 lb/hour, with emission control by bin vents for the silos, ~~scrubber for dust treatment~~ and baghouse for truck 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:

SECTION E.3 FACILITY OPERATION CONDITIONS

(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.**

~~(3) From silo to truck through a loading spout to transfer to the existing Meltshop Baghouses. Unloading from the truck at the existing Meltshop Baghouses also occurs in the building, transferring the dust through augers and a bucket elevator to the existing silo. In this option, the existing EAF dust treatment will have a maximum capacity of 100,000 lb/hr.~~

~~(4)~~ Treating ~~dust at the new silo and transferring to a truck. No loading spout is necessary because the material is no longer dusty, as treated.~~

~~The EAF dust treatment facility consists of the following:~~

~~(A) One (1) lime storage silo, identified as HRE #1, constructed in 1999, with a maximum capacity of 109 tons, emissions controlled by a bin vent filter, and exhausting to stack HR/E-2. Lime is pneumatically loaded to the silo at a maximum transfer rate of 40,000 pounds per hour.~~

~~(B) One (1) pugmill, identified as PM, constructed in 1999, with a maximum capacity of 100,000 pounds per hour, emissions controlled by one (1) venturi scrubber, and exhausting to stack HR/E-1. Lime is transferred to the pugmill via a screw conveyor system at a maximum transfer rate of 5,100 pounds per hour and EAF dust is transferred to the pugmill via gravity through an enclosed cone bottom loading spout at a maximum transfer rate of 100,000 pounds per hour.~~

(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.

SECTION E.3 FACILITY OPERATION CONDITIONS

(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) ~~Four (4)~~ **Eight (8)** Tundish Nozzle Preheaters, identified as TNP #1- ~~#4~~ **#8**, constructed in 1995, 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.

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

E.3.1 General Provisions Relating to NSPS [326 IAC 12-1-1] [40 CFR Part 60, Subpart A]

The Permittee shall comply with the requirements of 40 CFR 60, Subpart A– General Provisions, which are incorporated by reference as 326 IAC 12-1-1, 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 ~~treatment~~ **transfer** facility, identified as DTF, in accordance with schedule in 40 CFR Part 60, Subpart A.

E.3.2 New Source Performance Standards for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 [40 CFR Part 60, Subpart AAa]

Pursuant to 40 CFR Part 60, Subpart AAa, 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 ~~treatment~~ **transfer** facility, identified as DTF, shall comply with the following provisions:

(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 Changes:

SECTION E.4 FACILITY OPERATION CONDITIONS

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

~~EMERGENCY~~ GENERATORS

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

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

(~~ii~~ **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.

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

(~~iv~~ **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 backup generator, identified as GEN #5, with a capacity of 30 HP with emissions uncontrolled.**

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

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

(8) Transfer Car non-emergency generator, identified as GEN #8, constructed in 2002, with a capacity of 99 HP with emissions uncontrolled

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

E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]

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 Cold Mill generator, identified as GEN #3 except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

E.4.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ - Emission Units ≤ 500 HP Capacity, constructed before June 12, 2006]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, the Cold Mill generator, identified as GEN #3 with capacity ≤ 500 HP, constructed before June 12, 2006 shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ no later than May 3, 2013:

(1) 40 CFR § 63.6580
(2) 40 CFR § 63.6585
(3) 40 CFR § 63.6590
(4) 40 CFR § 63.6602
(5) 40 CFR § 63.6605(a), (b)
(6) 40 CFR § 63.6625(e)(2), (f), (h), (i),
(7) 40 CFR § 63.6640(a), (b), (e), (f)
(8) 40 CFR § 63.6655(a), (b), (d), (e), (f)
(9) Table 2c to Subpart ZZZZ of Part 63, footnote 1 of Table 2c and footnote 2 of Table 2c
(10) Table 6 to Subpart ZZZZ of Part 63
(11) Table 8 to Subpart ZZZZ of Part 63

E.4.3 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units > 500 HP capacities constructed before December 19, 2002]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, 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:

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 § 63.6640(f)(2)(i) through (iii)
(5) 40 CFR § 63.6675

E.4.4 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 non-emergency stationary Transfer Car Generator, GEN #8 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:

(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)(1), (h), (i)
(7) 40 CFR § 63.6640(a), (b), (e)
(8) 40 CFR § 63.6645(a)(5)
(9) 40 CFR § 63.6655, except (c) and (f)
Table 2c to Subpart ZZZZ, item (2)
Table 6 to Subpart ZZZZ, item 9
General Provisions (40 CFR Part 63) - Table 8, 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)

E.4.5 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:

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

(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)
(8) 40 CFR § 63.6645(a)(5) (for Lip seal and Guard House Generators -<100 HP)
40 CFR § 63.6645(a)(1) (for VTD Generator -<500 HP)
(9) 40 CFR § 63.6655, except (c)
Table 2c to Subpart ZZZZ, item (1)
Table 6 to Subpart ZZZZ, item 9
General Provisions (40 CFR Part 63) - Table 8, 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)

Fugitive Dust Control Plan (FDCP) Changes:

The following equivalent control measure has been added in Section 2 of the FDCP which will not require BACT re-evaluation

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.

Section E.5 Changes

SECTION E.5 FACILITY OPERATION CONDITIONS

The final rule, 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Process Heaters has been finalized on December 20, 2012. This rule applies to boilers and indirect fired process heaters. Metal process furnaces are subcategories of process heaters. Metal process furnaces include natural gas-fired annealing furnaces, preheat furnaces, reheat furnaces, aging furnaces, heat treat furnaces and homogenizing furnaces as defined in this rule. Therefore, Nucor's Tunnel Furnaces and the preheat section of the Galvanizing Line are not subject to this NESHAP since they are direct fired units.

Section E.5 has been revised to include the applicable compliance options for these boilers and process heaters. The following boilers and process heaters identified in Section E.5 table below are subject to this NESHAP.

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

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.

~~(z1) One (1) natural gas-fired Steel Technologies boiler with a maximum heat input capacity of 10.9 million British thermal units per hour (MMBtu/hr), constructed in 1994 and re-permitted under Nucor Steel in 2008.~~

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.

(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.)

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, 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** ~~Castrip Boiler ID No. 501, Linde Gases Boilers No. 1, No. 2 and No.3, Cold Mill Boiler, identified as CMB#1 and Steel~~

~~Technologies Boiler~~ as specified in Table 10 of 40 CFR 63, Subpart DDDDD in accordance with schedule in 40 CFR 63 Subpart DDDDD.

~~(b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition.~~

(~~c~~**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 ~~Applicability of~~ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters Requirements [40 CFR Part 63, Subpart DDDDD]

~~(a)~~ The 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 ~~source~~ **emission units and shall comply with the following provisions no later than January 31, 2016** . ~~A copy of this rule is available on the US EPA Air Toxics Website at http://www.epa.gov/ttn/atw/boiler/boilerpg.html.~~

~~(b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition.~~

~~E.5.3 Requirement to Submit a Significant Permit Modification Application [326 IAC 2-7-12][326 IAC 2-7-5]~~

~~The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information regarding which compliance option or options will be chosen in the Part 70 permit.~~

~~(a) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Part 70 permit the applicable requirements of 40 CFR 63, Subpart DDDDD, a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.~~

~~(b) The significant permit modification application shall be submitted no later than June 21, 2013.~~

~~(c) The significant permit modification application shall be submitted to:~~

~~IDEM Air Permits Administration~~
~~ATTN: Incoming Application~~
~~100 North Senate Avenue~~
~~MC 61-53, IGCN 1003~~
~~Indianapolis, IN 46204-2251~~

(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(e)
(8) 40 CFR § 63.7540(a)(10)
(9) 40 CFR § 63.7545(f)
(10) 40 CFR § 63.7550(c)(1) through (3), (12),
(11) 40 CFR § 63.7555(a)(1)
(11) 40 CFR § 63.7560
(12) 40 CFR § 63.7565
(13) 40 CFR§ 63.7570
(14) 40 CFR§ 63.7575
Table 3 to Subpart DDDDD of Part 63, items (1) through (3)
Table 10 to Subpart DDDDD of Part 63

~~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: B-Scrap Beneficiation Process by Melt Solution, LLC -~~
~~Front end loader, (BSBP-1), conveyor belts (BSBP-2), crusher (BSBP-3) and screener (BSBP-4)~~
~~Parameter: Throughput~~
~~Limit: 150,000 tons per twelve (12) consecutive month period.~~

~~QUARTER:__________ YEAR:____________~~

~~**Month**~~	~~Column 1 Throughput This Month~~				~~Column 2 Throughput 11 Months~~				~~Column 1+2 Throughput -12 Month Total~~			
	~~BSBP-1~~	~~BSBP-2 (each drop point #1-#4)~~	~~BSBP-3~~	~~BSBP-4~~	~~BSBP-1~~	~~BSBP-2 (each drop point #1-#4)~~	~~BSBP-3~~	~~BSBP-4~~	~~BSBP-1~~	~~BSBP-2 (each drop point #1-#4)~~	~~BSBP-3~~	~~BSBP-4~~
~~Month 1~~												
~~Month 2~~												
~~Month 3~~												

[1]~~Four Drop Points~~
~~Drop point #1 front end loader to feed hopper of crusher~~
~~Drop point #2 hopper to crusher chamber~~
~~Drop point #3 crusher to belt conveyor~~
~~Drop point #4 magnetic separator of conveyor to steel and slag 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:~~ ~~425 BHP Diesel Generator, BSBP-5 (Melt Solution, LLC)~~
~~Parameter:~~ ~~Hours of Operation~~
~~Limit:~~ ~~1,500 operating hours per twelve (12) consecutive month period.~~

~~QUARTER:~~__________ ~~YEAR:~~_____________

~~Month~~	~~Column 1 Hours Operated This Month~~	~~Column 2 Hours Operated 11 Months~~	~~Column 1+2 Hours Operated 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:~~ ____

~~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: The steel mill service screen and conveyor system~~
~~Parameter: Steel Mill related material throughput~~
~~Limit: Less than 1,092,000 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~~
~~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:~~ ____________________

Changes to draft permits subsequent to first public notification dated March 15, 2013 through April 14, 2013

The following changes have been made to draft permits PSD/SSM No.107-32615-00038 and SPM No.107-32627-00038 subsequent to the first public notification period dated March 15, 2013 through April 14, 2013 based on US EPA comments submitted April 15, 2013, Nucor Steel comments submitted on April 10, 2013 and IDEM, OAQ changes. These changes involve significant changes to a case by case PSD BACT limitation and compliance determination that require a re-public notification to give the public a chance to make comments to these changes:

On April 15, 2013, U.S. EPA, Region 5, made the following comments to the draft PSD/Significant Source Modification and Significant Permit Modification. Additions are **bolded** and deletions are ~~struck-through~~ for emphasis:

U.S. EPA, REGION 5 PERMIT COMMENTS:

Comment 1:

The greenhouse gas (GHG) best available control technology (BACT) analysis considers only carbon dioxide (C02) and does not consider non-CO2 GHGs because you assert that there are no known add-on controls for them (Appendix B, page 79). Although: there may not be any known add-on controls at this time, the GHG BACT analysis should address these non-CO2 GHG pollutants to the extent that they are emitted from the facility. Please explain whether the GHG emission rate limit determined as GHG BACT is sufficient to address the emissions of non-CO2 GHGs.

Response 1:

Although the BACT Analysis focuses only in the evaluation of add-on controls for CO2 emissions because of no known add-on control options for the non-CO2 (e.g. CH4, N2O) GHG emissions, the combustion sources where the non CO2 GHGs are coming from were addressed in the analysis. The use of natural gas, diesel, kerosene and propane for fuels which is BACT for combustion sources at the plant, emits less CO2, CH4 and N2O, as compared to coal, petroleum coke, etc. Further, the BACT emission limitation accounted for the CH4, N2O emissions. Therefore, the BACT for these sources is sufficient to address and account for all the non-CO2 GHGs at the source. IDEM, OAQ has revised the compliance determination in Condition D.0.2. See response 2.

Comment 2:

Condition D.0.2 (permit, page 56) presents an equation that the Permittee must use to determine compliance with GHG BACT for the entire facility. The equation takes as its inputs the amount of CO2 measured from a CO2 continuous emission monitor, a mass balance of CO2 in and out at the Castrip unit, and the amount each type of fuel used at the facility. The equation, as written, does not require a conversion from the amount of propane and #2 fuel oil used at the facility to the amount of carbon dioxide equivalents (CO2e) emitted as a result of using these fuels. Please correct the equation, to ensure that CO2e is being added together within the equation. Please also clarify whether this equation accounts for all sources of non-CO2 GHGs or otherwise explain how this is sufficient to ensure compliance with the GHG BACT.

Response 2:

CO and CO2 are generated from the charge materials and carbon electrodes used in steel scrap melting and refining. There are no non CO2 GHGs emitted from these processes.

GHGs are likewise, emitted during natural gas, propane and no. 2 fuel oil combustion at the tunnel furnace system and tundish pre-heaters. Nearly all of the fuel carbon (99.9 percent) in natural gas is converted to CO2 during the combustion process. Fuel carbon not converted to CO2 results in CH4 and CO emissions and is due to incomplete combustion. Fuel combustion is the only source of non CO2 GHG emissions from the affected sources.

IDEM, OAQ has clarified that the GHG BACT limit only applies to the new and modified emission units, (Meltshop, Castrip, Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2 and Tunnel Furnace Snub). Therefore, Section D.0, which reflects the GHG BACT has been revised to reflect this:

SECTION D.0 EMISSIONS UNIT OPERATION CONDITIONS

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

~~Plant-Wide Combustion Sources~~

~~Meltshop Station~~

~~CASTRIP- LMS~~

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 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

SECTION D.0 EMISSIONS UNIT OPERATION CONDITIONS

(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) ~~The use of natural gas, and diesel as the main fuels, kerosene and the use of propane as backup fuels for all combustion sources at the plant~~

Combustion emission units where fuel type is specified by a 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) ~~Source-wide~~ **The total** Greenhouse GHG (COe2) emissions f**rom 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 ~~931,316~~ **544,917** tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance Determination Requirements

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

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

~~CO2 emissions from Meltshop Baghouses 1 and 2 using CO2 CEMS readings + CO2e emissions calculated from the total Natural Gas usage + Propane usage + No. 2 Fuel Oil usage in the emergency generators + mass balance calculation for GHG at the Castrip VTD (carbon in) and Castrip LMS (carbon out).~~

~~where:~~
~~Natural gas CO2e =(CO2 x CO2 GWP (1) + N2O x N2O GWP (310) + CH4 x CH4 GWP (21)~~

CO2e emissions (tons/month) =
CO2 emissions from Meltshop Baghouses 1 and 2 using CO2 CEMS readings +
CO2e emissions calculated from the total Natural Gas usage +
CO2e emissions calculated from the total Propane usage +
CO2 from mass balance calculation for GHG at the Castrip VTD (carbon in) and Castrip LMS (carbon out).
CO2 from mass balance calculation for GHG at the Castrip/strip caster line VTD and Castrip/strip caster line LMS (carbon in - carbon out) or at the Castrip/strip caster line LMS-2 and Castrip VTD (carbon in - carbon out).

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

CH4 and N2O Emission Factor fromTable C-2 to Subpart C of Part 98—Default CH_4 and N_2O Emission Factors for Various Types of Fuel

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

* * *

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

D.0.5 Record Keeping Requirements

~~(a) To document the compliance status with Condition D.0.1, the Permittee shall maintain records of the readings of the GHG CEMS in pounds per hour.~~

~~(b) To document the compliance status with Condition D.0.1, the Permittee shall maintain records of each fuel usage.~~

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 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 Castrip/strip caster line LMS-2 and the amount of carbon output from the Castrip/strip caster line VTD in tons/month; **or**

Amount of carbon input to the Castrip/strip caster line VTD and the amount of carbon output from the Castrip/strip caster line LMS-2 in tons/month.

(d) Monthly records of the CO2e emissions.

(e) 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)~~ 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(34).

~~(b) The Permittee shall submit a quarterly report of excess sourcewide CO2 emissions based upon the CO2 CEMS readings, using the Quarterly Deviation and Compliance Monitoring Report or equivalent.~~

~~This report 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(34).~~

Comment 3:

The equation in Condition D.0.2 includes as part of its input the mass balance of carbon into the Castrip vacuum tank degasser and carbon out of the Castrip ladle, metallurgy station. The permit does not have a condition requiring recordkeeping of the input and output of the Castrip unit in order to verify compliance with the GHG BACT requirements. Please add a condition to the permit requiring appropriate recordkeeping to ensure compliance with the GHG BACT.

Response 3:

Please see changes made to Condition D.0.5 in Response 2 under USEPA comments:

Comment 4:

Conditions D.4.2 through D.4.5 (permit, page 71) incorporate nitrogen oxide (NOx), carbon monoxide (CO), and sulfur dioxide (SO2) emission rates determined through BACT requirements. The permit currently does not require the Permittee to test, measure, or otherwise record the amount of these pollutants that are emitted from the baghouse stack. Please explain how compliance with these emission rate limits is determined and add appropriate testing, monitoring, and recordkeeping conditions to the permit to ensure compliance with the same.

Response 4:

IDEM has determined that only one (1) time testing is required to measure NOx, CO and SO2 emissions from the LMS Castrip operation as these pollutants are not controlled by a control device. In SSM 107-31415-00038 and Part 70 Renewal 107-30293-00038 issued on May 15, 2012 and June 1, 2012, respectively, the condition that required the one time testing has been deleted since the source has already complied with it.

The LMS Castrip has no add-on controls for these pollutants and no parameters established during the stack tests that can be continuously monitored and maintained to ensure compliance with the limits. As long as the source operates at the same operating conditions during the stack tests, it is assumed that these limits are continuously being met. In addition, the Castrip caster line throughput is limited to 2,365,200 tons per twelve (12) consecutive month period. One time testing requirement to verify compliance with NOx, CO and SO2 limits due to the modification of the Castrip in this permitting action has been added in Condition D.4.8 of the draft permit:

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.

(~~a~~ **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 PM, PM10, PM2.5 and Pb, to demonstrate compliance with Conditions D.4.1(d), (e) and D.4.5(a), utilizing EPA Methods or other methods as approved by the Commissioner.

(~~b~~**c**) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct opacity compliance stack tests for the LMS-2 baghouse stack (S-20) to demonstrate compliance with the emission limitations in Conditions D.4.1(d), and D.4.1(f), utilizing methods as approved by the Commissioner.

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.

(~~c~~**d**) Within 2.5 years after the most recent valid compliance demonstration, the Permittee shall conduct Mercury, Beryllium and Fluoride testing on the LMS-2 baghouse controlling the Castrip to demonstrate compliance with Condition D.4.5(b) through (d).

(~~d~~**e**) All compliance stack tests shall be repeated at least once every 2.5 years from the date of a 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.

Comment 5:

On September 19, 2012, EPA published a final rule revising 40 C.F.R. 63 Subpart CCC. (See 77 FR 58251.) These revisions include changes to 40 C.F.R. §§ 63.1161, 63.1164, and 63.1165. Condition E.2.2 (permit, page 158) lists the requirements of 40 C.F.R. 63 Subpart CCC to which the facility is subject. However, this list refers to requirements that may no longer exist or may have changed. Please, re-examine which conditions of 40 C.F.R. 63 Subpart CCC still apply to the facility and update attachment D to the permit as necessary to reflect the most recent changes to the rule.

Response 5:

Section E.2, Section E.4 and Section E.5 have been re-evaluated to determine if existing conditions have been been affected by the updates made to 40 CFR Part 63, Subpart CCC, 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 63, Subpart DDDDD. In addition, all NSPS and NESHAP Attachments have been changed to reflect the current updates.

E.2.2 National Emissions Standards for Hazardous Air Pollutants for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants [40 CFR Part 63, Subpart CCC]

Pursuant to 40 CFR Part 63, Subpart CCC, 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) shall comply with the following provisions:

(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)**
(5) 40 CFR § 63.1160 (a)(1), (b)(1)**(i) through (vii),** (2)(i) through (iii), (~~iv)(A) through (E), (v) through (vii), (3)(i) through (iii)~~
(6) 40 CFR § 63.1161 (a) ~~(1) through (3),~~ (b), (c)(1) ~~& (2),~~ (d)**(1)**(i) through **(iv),** ~~(v),~~ (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) ~~(1) through (3).~~
(10) 40 CFR § 63.1165 (a)(1) through ~~(11),~~ **(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.5:

E.5.2 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters Requirements [40 CFR Part 63, Subpart DDDDD]

The 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 shall comply with the following provisions no later than ~~March 21, 2014~~ **January 31, 2016**.

(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~~(e)~~ (**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) ~~through (3), (12),~~ **(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

On April 10, 2013, Nucor Steel made the following comments to the draft PSD/Significant Source Modification and Significant Permit Modification. Additions are **bolded** and deletions are ~~struck-through~~ for emphasis:

NUCOR PERMIT COMMENTS

Technical Support Document:

IDEM, OAQ prefers not to change the TSD in order to preserve the original information that formed the basis of the draft permit. However, any corrections to the TSD will be documented in this TSD Addendum.

Comment 1:

Under the Source Status Nucor noted that the PM_{10} and $PM_{2.5}$ numbers are apparently in error, as $PM_{2.5}$ cannot be greater than PM_{10}.

Response 1:

The PTE calculation in the TV Renewal was reviewed and there is a typographical error in the table. Since both PM10 and PM2.5 have the same limit of 0.0052 grain/dry standard cubic feet per minute (filterable and condensable), PM10 emission is the same as PM2.5 at 438 tons/year. Therefore, the source status table should have read as follows:

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	251
PM10	~~251~~ **438**
$PM_{2.5}$	438
SO_2	1,001.6
VOC	455.5
CO	4,876.2
NO_X	1,354.6
GHGs as CO_2e	461,003

HAPs	**Emissions (tons/yr)**
Single HAP	>10
Combined HAPs	>25

Comment 2:

Description of Proposed Modification

The Transfer Car generator is not a stationary source, but a mobile source. It is used to provide electrical power for the transfer car, much the same way that the diesel engine on a locomotive provides electrical power to the traction motors that actually move the locomotive. Therefore, it is a mobile source.

Federal Rule Applicability

NSPS/NESHAP

As noted above, the Transfer Car generator is not a stationary source, but a mobile source. It is used to provide electrical power for the transfer car, much the same way that the diesel engine on a railroad locomotive provides electrical power to the traction motors that actually move the locomotive. Therefore, it is a mobile source and is not subject to the NSPS, which is limited to stationary sources. Similarly, it is not subject to the NESHAP, which also applies to stationary sources only.

Specifically, 40 CFR 60.4219 (NSPS) and 40 CFR 63.6585(a) (NESHAP) state that the regulation applies to stationary RICE which are *not mobile*. "Stationary RICE differs from mobile RICE in that *a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30*, and is not used to propel a motor vehicle…" Nonroad engine means:

(1) Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine that meets any of the following criteria:

(i) It is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers).

(ii) It is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers).

(iii) By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(2) An internal combustion engine is not a nonroad engine if it meets any of the following criteria:

(i) The engine is used to propel a motor vehicle, an aircraft, or equipment used solely for competition.

(ii) The engine is regulated under 40 CFR part 60, (or otherwise regulated by a federal New Source Performance Standard promulgated under section 111 of the Clean Air Act (42 U.S.C. 7411)).

(iii) The engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. See § 1068.31 for provisions that apply if the engine is removed from the location.

40 CFR 1068.30. The Transfer Car Generator both meets the criteria for non-road engine and is propelling a vehicle, as described above. The Transfer Car generator is self-propelled and propels itself and/or performs another function (i.e., provides electric power to the motive wheels of the Transfer Car to move the car on the tracks). The Transfer Car generator is certainly portable or transportable as it moves with the Transfer Car on the tracks. The fact that the transfer car is on rails does not result in the transfer car “remaining in one location” for more than 12 months. If that were the case, any locomotive which does not leave the facility (i.e., never exits the facility’s gates) would be a stationary engine, which is clearly not the case. We have attached guidance from EPA Region 7 which addresses a similar case.

Response 2:

U.S. EPA Region 5, made a determination addressed to Owen Seltz of Minnesota Pollution Control Agency, dated, December 5, 2008, for a diesel engine own by Hibbing Taconite Company. In this determination, EPA stated that the diesel engine is regularly moved through the facility and is not stationary at one location for a period of more than 12 months. In fact, the engine is moved at least once every seven days. Based on this, EPA determined that this diesel engine is classified as a nonroad engine and therefore, is not subject to 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ.

IDEM, OAQ had determined in the draft permit that Nucor's Transfer Car generator is a stationary source because it remains within the plant for more than 12 months. IDEM, OAQ has changed its determination to be consistent with this EPA's determination. Therefore, Nucor's Transfer Car generator is considered a nonroad engine and it is not subject to 40 CFR Part 63, Subpart ZZZZ. Due to this change in applicability, Section E.4 of the permit has been amended by removing the Transfer Car generator applicable requirements. In addition, existing requirements have been re-evaluated due to the changes made to this NESHAP:

SECTION E.4 FACILITY OPERATION CONDITIONS

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

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 ~~backup~~ **emergency** generator, identified as GEN #5, constructed in 1988, permitted in 2013, with a capacity of 30 HP with emissions uncontrolled

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

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

~~(8) Transfer Car non-emergency generator, identified as GEN #8, constructed in 2002 with a capacity of 99 HP with emissions uncontrolled,~~

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

E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A]

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 Cold Mill generator, identified as GEN #3 except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

E.4.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ - Emission Units ≤ 500 HP Capacity, constructed before June 12, 2006]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, the Cold Mill generator, identified as GEN #3 with capacity ≤ 500 HP, constructed before June 12, 2006 shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ no later than May 3, 2013:

(1) 40 CFR § 63.6580
(2) 40 CFR § 63.6585
(3) 40 CFR § 63.6590
(4) 40 CFR § 63.6602
(5) 40 CFR § 63.6605(a), (b)
(6) 40 CFR § 63.6625(e)(2), (f), (h), (i),
(7) 40 CFR § 63.6640(a), (b), (e), (f)
(8) 40 CFR § 63.6655(a), (b), (d), (e), (f)
(9) Table 2c to Subpart ZZZZ of Part 63, footnote 1 of Table 2c and footnote 2 of Table 2c

(10) Table 6 to Subpart ZZZZ of Part 63
(11) Table 8 to Subpart ZZZZ of Part 63

E.4.3 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine [40 CFR Part 63, Subpart ZZZZ- Emission Units > 500 HP capacities constructed before December 19, 2002]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, 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**:

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)**
~~(4)~~**(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
~~(5)~~**(9)** 40 CFR § 63.6675

~~E.4.4 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 non-emergency stationary Transfer Car Generator, GEN #8 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:~~

~~(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)(1), (h), (i)~~
~~(7) 40 CFR § 63.6640(a), (b), (e)~~
~~(8) 40 CFR § 63.6645(a)(5)~~
~~(9) 40 CFR § 63.6655, except (c) and (f)~~
~~Table 2c to Subpart ZZZZ, item (2)~~
~~Table 6 to Subpart ZZZZ, item 9~~
~~General Provisions (40 CFR Part 63) - Table 8, 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)~~

E.4.5 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:

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

(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) (for Lip seal and Guard House Generators -<100 HP) 40 CFR § 63.6645(a)(1) (for VTD Generator -<500 HP)
(9) 40 CFR § 63.6650(h) (for VTD Generator - >100 HP)
(~~9~~ **10**) 40 CFR § 63.6655**(a)(1), (d), (f)(1)**~~except (c)~~
(11) 40 CFR § 63.6660
(12) 40 CFR § 63.6665
Table 2c to Subpart ZZZZ, item 1.
Table 6 to Subpart ZZZZ, item 9.
General Provisions (40 CFR Part 63) - Table 8, 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)

Comment 3:

Under **State Rule Applicability** please add in (l)

(l) "MMBTU/HR input from the" after "Additional thirty (30)"

Response 3:

IDEM, OAQ agrees that Section (l) under **State Rule Applicability should have included** "MMBtu/hr input capacity" after "additional thirty (30)"as follows:

(l) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The operation of the unpemitted generators; Generator Lip Seal with site rating of 30 HP, Generator Guard House with a site rating of 67 HP, Generator Transfer Car with a site rating of 99 HP, Generator VTD with site rating of 134 HP and the additional thirty (30) **MMBtu/hr input capacity** Tundish Preheaters emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

Comment 4:

Under Existing Emission Units Affected by this Modification Table:

Row for D.7 Coil and Scrap Cutting, under column "Monitoring"
Remove "of MSS-1 uncontrolled exhaust" as it no longer exists

Row for D.12 Clean shred scrap plant, under column "Monitoring"
Remove "clean shred scrap plant and" as it was never built

Response 4:

The **"Existing Emission Units Affected by this Modification Table**" under Compliance Determination and Monitoring Requirements should've been as follows:

Existing Emission Units Affected by this Modification				
Emission Unit	**Control Device**	**Pollutant**	**Frequency of Testing/ Monitoring**	**Monitoring**
D.4 - Castrip LMS	Baghouse	PM, Lead	2.5 years after most recent stack test	Visible Emission Notation (VEN) of LMS-2 Baghouse and Pressure drop reading and recording
	No Control	NOx, CO, SO2	1 time testing	
D.7 Coil and Scrap Cutting, CC-1	Baghouse	PM and PM10	2.5 years after most recent stack test	Visible Emission Notations of ~~MSS-1~~ uncontrolled exhaust and CC-1 baghouse and Pressure drop reading and recording
D.12 ~~clean shred scrap plant~~ **Scrap Handling and Processing**	No control	particulate	once/day VEN	Visible Emission Notations of ~~clean shred scrap plant and~~ scrap cutting

Comment 5:

On page 51 of 91 of the TSD, Condition D.13.2 for the emergency generators is stated twice.

Response 5:

IDEM, OAQ agrees the TSD should have been as follows:

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**) **To document the compliance status with Condition D.13.1(e) record the results of each tune-ups and inspections.**~~

~~(b**c**) Section C - General Record Keeping Requirements contains the Permittee's obligations~~

~~with regard to the records required by this condition.~~

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.

<u>Comments on Permit Conditions (both Permit and TSD)</u>

Comment 6:

Section A.3

D.7 (p) - Remove the words “water sprays” after “weather permitting”.

D.13 (w1) - This condition should be revised by deleting the Transfer Car generator, which is not a stationary source subject to permitting for the reasons set forth above.

Response 6:

Section D.7 (p) in the draft permit has been corrected as follows:

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 ~~water sprays~~ and exhaust to the atmosphere.

Section D.13 (w1)(8) has been deleted from the draft permit since the Transfer Car generator is a nonroad engine and is not a stationary source, as defined in 326 IAC 2-2-1(yy). The following is the deletion:

GENERATORS

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

* * *

~~(8) Transfer Car non-emergency generator, identified as GEN #8, constructed in 2002, permitted in 2013, with a capacity of 99 HP with emissions uncontrolled,~~

Comment 7:

Section D.0 Entire Source

D.0.1(a) Nucor requests that this provision be changed because it is incorrect as applied to “all combustion sources” at the facility. While major sources use natural gas, diesel or propane as primary fuels, and other fuels as backup, minor and insignificant sources may use other fuels, such as acetylene. Nucor proposes that this condition be revised as follows:

Combustion units where fuel type is specified by 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.

D.0.1(b) Change “COe2” to “CO_2e”.

Response 7:

Condition D.0.1 has been addressed in Response 2 under U.S. EPA comments.

Comment 8:

Section D.7 Slag Processing

Description Remove the words “water sprays” after “weather permitting.”

D.7.3 The mill scale screen and conveyor system (MSS-1) no longer exist and should be removed from the permit. Condition D.7.3 should be deleted.

Response 8:

Please see related response in Response 6 under Nucor comments.

Condition D.7.3 has been deleted from the permit since the emission units no longer exist at the plant. The following is the deletion:

~~D.7.3 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 mill scale screen and conveyor system (MSS-1) shall not exceed 64.8 pounds per hour when operating at a process weight rate of 350 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 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~~

Comment 9:

Section D.13 Emergency Generators

Description -As discussed above, the Transfer Car Generator should be deleted from the permit. Alternatively, it could be retained, but with the following note: “This unit is a mobile source not subject to permit requirements, but is included to document its mobile source status only.” See discussion above.

D.13.1(a) Nucor requests that this wording be changed to clarify that Nucor may use these units for plant maintenance, regardless of whether primary power to the plant has been interrupted. Nucor has always used these generators to provide minor incidental power during plant maintenance, such as periods when primary power to the area or unit(s) served by the generator is unavailable due to plant electrical or other work. Nucor has always restricted the generators use to the 500 hours or less as provided by its BACT determinations. Nucor needs to retain this flexibility to maintain its equipment. The proposed revision would read:

The emergency generators, identified as GEN #1 through GEN #7 shall solely provide backup power when electric power is interrupted, ~~or~~ during **plant or equipment** maintenance**,** or **during maintenance or** testing of **the** generators.

D.13.1(c)-(e) The Transfer Car Generator (#8) should be deleted from these conditions as it is a mobile source not subject to this permit. See discussion above.

D.13.2(a) Add “for generators identified as GEN #1 to GEN #7” at the end to clarify that this condition does not apply to the Transfer Car Generator (#8).

D.13.2(b) Add “for generators identified as GEN #1 to GEN #7” at the end to clarify that this condition does not apply to the Transfer Car Generator (#8).

Response 9:

D.13.1 The lip seal, guard house and VTD generators are not subject to PSD BACT since they were determined to be not part of the process subject to PSD. Therefore, BACT requirements for these generators were all removed.

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 ~~backup~~ **emergency** generators, ~~identified as GEN #1 through GEN #7~~ shall solely provide backup power when electric power is interrupted, during plant or equipment maintenance or during maintenance or testing of generators.

(b) Each ~~backup~~ **emergency** generator, ~~identified as GEN #1 through GEN#7~~ 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, ~~identified as GEN #1 through GEN #7~~ shall not exceed 0.05% by weight.

(d) Good combustion practices shall be performed for all generators~~, identified as GEN #1 through GEN #7.~~

~~(e) Perform good management practices - tune-ups and inspections for generators, identified as GEN #5 through GEN #8 must be performed biennially.~~

D.13.1(c)-(e) The Transfer Car Generator has been totally removed from the permit. See related response in Response 6.

D.13.2(a) It is not necessary to clarify this condition because the Transfer Car Generator including the three generators have been removed from the permit.

Comment 10:

Section D.29 EAFs etc.

D.29.5(a) Remove “except as specified below” as we do not know what it is referencing

D.29.6(c)(5) Remove “except as specified below” as we do not know what it is referencing

D.29.6(d)(5) Remove “shall only burn natural gas, and” as these units are permitted to use propane as stated in D.29.6(d)(4).

D.29.11(b) Change “truck loading” to “truck/railcar loading”

D.29.21(f) In the italicized comment in the TSD, it should note that materials are shipped by “truck/railcar” not just truck.

Response 10:

D.29.5(a) IDEM, OAQ has corrected a typographical error in this condition. The following is the correction:

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, ~~except as specified below,~~ and shall be limited to 5.0 million Btu per hour heat input, each.

D.29.6(c)(5) IDEM, OAQ has corrected a typographical error in this condition. The following is the correction:

D.29.6 Ladle Preheaters PSD BACT [326 IAC 2-2]

* * *

(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:

* * *

(5) The Tundish Nozzle Preheaters (TPH1 through TPH8) shall only burn natural gas, ~~except as specified below~~, and shall be limited to 0.8 million Btu per hour heat input each.

D.29.6(d)(5) IDEM has clarified this condition to better reflect the BACT determination made in this permitting action for Tundish Preheaters (TP1-TP5).

D.29.6 Ladle Preheaters PSD BACT [326 IAC 2-2]

* * *

(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:

(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.

D.29.11(b) This condition has been corrected for a typographical error: The following is the correction:

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 loading~~ **truck/rail car loading** buildings**.**

(c) EAF Dust transfer shall occur inside buildings located at both Meltshop baghouses.

D.29.21(f) This note in the TSD has been documented here for correction:

*Condition D.29.21(f) has been deleted since the dust treatment operation is no longer performed at the plant, instead the dust is loaded in trucks**/rail cars** for offsite disposal:*

Comment 11:

Section E.3 Meltshop, EAF Etc.

Description In (rr), add “/railcar” after truck.

Response 11:

Section E.3 has been corrected as follows:

(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,

Comment 12:

Section E.4 Emergency Generators

Description As noted above, Transfer Car Generator #8 is a mobile source and is not subject to the NESHAP controls. It should be deleted from this condition or else flagged with the note: “This unit is a mobile source not subject to permit requirements, but is included to document its mobile source status only.” See discussion above.

E.4.4 As noted above, Transfer Car Generator #8 is a mobile source and is not subject to the NESHAP controls. This condition should be deleted in its entirety.

Response 12:

This unit has been deleted from the permit. See related response to EPA comments in Response 2 under Nucor's Permit comments.

Comment 13:

<u>Appendix B, BACT Analysis</u>

Transfer Car Generator #8
For the reasons stated earlier, this is not a stationary unit and is not subject to stationary source permit control. The references to the Transfer Car Generator should be removed.

Response 13:

All references to the Transfer Car Generator including the other three generators (lip, guard house and VTD) in all the permit documents except the TSD have been removed. See related response in Response 10.

Comment 14:

BACT Summary Table
The language on emergency generators should be revised to reflect “Solely used for backup power, plant and equipment maintenance, and maintenance and testing of the generators” consistent with the prior language. These units have been used in this restricted fashion since installation.

Response 14:

See related response in Response 9 under Nucor's Permit comments:

Comment 15:

GHG BACT Determination

IDEM, OAQ should specify that the facility-wide BACT limit applies only to existing sources and not new sources added after the date of this BACT determination.

The BACT determination should be revised to reflect Nucor's proposed language, to avoid inadvertently precluding Nucor from using portable acetylene torches, kerosene heaters, and similar minor and insignificant equipment.

Response 15:

The BACT performed and established in this PSD permit PSD/SSM 107-32615 only applies to the emission units affected by this permitting action. It does not apply to emission units added after this permitting action.

IDEM, OAQ has deleted the unpermitted emergency generators (lip seal, guard house and VTD) from the BACT since they are not part of the process subject to PSD review. In addition, the GHG emissions limit has been revised for a typographical error on the meltshop GHG emissions and to account for the source's change to the Castrip VTD GHG emission factor from 0.79 lb/ton to 3.67 lb/ton. The limit was revised from 931,316 tons/year to 544,917 (558,396 tons/year - 13,479 tons/yr = 544,917 tons/yr).

	GREENHOUSE GASES (CO2e) (tons/year)		
Emissions Units	**POTENTIAL**	**BASELINE ACTUAL**	**NET INCREASE**
Section D.29- Meltshop Station	~~527,702.4~~ **454,044**	~~270,660~~ **232,881**	~~257,042.4~~ **221,163**
Section D.29- Tundish Preheaters TP1-TP5	31,106	15,553	15,553
Section D.25 -Tunnel Furnace No. 1 and No.2	51,843	34,735	17,108
Section D.25 -Tunnel Furnace Shuttles 1 and 2	13,479	13,479	0.0
Section D.25- Tunnel Furnace Snub	3,111	0.0	3,111
Section D.25- Hot Strip Mill	0.0	0.0	0.0
Section D.4 - Castrip **VTD**	**4,340**	**63.7**	**4,263.8**
Castrip Caster LMS	**473**	**74.7**	**398.3**
TOTAL GHG (CO2e) NET EMISSIONS INCREASE FROM MODIFICATION	**558,396**	**296,786.4**	**261,597**

Note: The hot strip mill (D.25) and Tunnel Furnace Shuttle 1 and 2) are not subject to PSD for GHG since their modification did not result in GHG emissions increase.

See the changes made to Condition D.0.1 due to this comment and EPA comment in Response 2 under U.S. EPA comments.

Comment 16:

Nucor inadvertently submitted the wrong capacity of 5 MMBtu/hr for each of the oxyfuel burners/lances for a total of 30 MMBtu/hr. The correct capacity is 5.5 megawatt per hour for each oxyfuel burner/lance for a total of 33 MW/hr.

Response 16:

IDEM, OAQ has made the following revision to Sections A.3, D.29 and E.3 to reflect the correct capacity:

SECTION A.3, D.29, and E.3 changes:

(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 MMBtu per hour~~ **5.5 megawatt per hour (MW/hr)** for a total of ~~30 MMBtu per hour~~ **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:

The increase in the GHG emissions from this change in the capacity has already been accounted for in the plantwide increase in the natural gas usage.

IDEM, OAQ Changes:

Condition D.0.6 has been corrected for a typographical error and since there is no specific limit to CO2, IDEM, OAQ has deleted Condition D.0.6(b), the requirement to report excess CO2 CEMS readings.

D.0.6 Reporting Requirements

~~(a)~~ 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(34).

~~(b) The Permittee shall submit a quarterly report of excess sourcewide CO2~~~~**e**~~ ~~emissions based upon the CO2 CEMS readings using the Quarterly Deviation and Compliance Monitoring Report or equivalent.~~

~~This report 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(34).~~

The following table in the TSD has been corrected due to inadvertently multiplying twice the number of tunnel furnaces in calculating their GHG emissions and to correct the GHG emissions from the Castrip to reflect the changes made by the source as shown in Response 15 under Nucor's Permit Comments.

Permit Level Determination – PSD

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

	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**	
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
ACTUAL TO POTENTIAL (ATP) TEST (ton/yr) - MODIFIED UNITS/INCREASE UTILIZATION									
BASELINE ACTUAL EMISSISONS									
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	~~69,469.63~~ **34,734**	--
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	-	-	-	-	-	--

	PM	PM10	PM2.5	VOC	CO	SO2	NOx	GHGs (CO2e)	Pb
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**	
Castrip Caster **LMS**	0.044	0.044	0.044	-	-	-	-	**74.7**	--
Total Baseline Actual (West Plant)	120.64	120.64	113.91	69.45	1,163.85	196.01	207.35	~~330,869.06~~ **296,273**	0.035
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	~~103,686.0~~ **51,843**	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 **LMS**	0.122	0.122	0.122	-	-	-	-	473	--
Total PTE	**412.96**	**416.25**	**405.39**	**337.40**	**4,513.31**	**726.42**	**907.41**	~~**620,465.19**~~ **573,435**	**1.05**
Emissions Increase from Modified Emission Units (ATP)	~~**292.32**~~ **292.08**	~~**295.61**~~ **294.63**	~~**291.48**~~ **290.5**	~~**267.95**~~ **267.24**	~~**3,349.46**~~ **3,338.64**	~~**530.41**~~ **530.33**	~~**700.06**~~ **687.18**	~~**289,596.13**~~ **261,609.8**	~~**1.02**~~ **1.09**
Total Emission Increase From Project (Hybrid Test)	~~**293.65**~~ **293.19**	~~**297.67**~~ **295.8**	~~**293.54**~~ **291.68**	~~**269.89**~~ **268.55**	~~**3,363.56**~~ **3,343.08**	~~**531.49**~~ **531.34**	~~**728.18**~~ **703.79**	~~**305,716.00**~~ **263,836**	**1.02**
PSD Significant Levels	**25**	**15**	**10**	**40**	**100**	**40**	**40**	**75,000**	**0.6**

The Fugitive Dust Control Plan (FDCP) appeared twice in the draft permit; therefore, IDEM has deleted the second one.

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	Whitesville Mill Service (Slag Processing)
Environmental Manager	Plant Manager
4537 South Nucor Road	4537 South Nucor Road
Crawfordsville, Indiana 47933-9450	Crawfordsville, Indiana 47933-9450
Telephone: (765) 361-2659	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 and approved for use, in writing, by IDEM 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 e 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.

~~**FUGITIVE DUST CONTROL PLAN**~~

~~**NUCOR STEEL**~~
~~**4537 South Nucor Road**~~
~~**Crawfordsville, IN 47933**~~

~~**SECTION 1 – INTRODUCTION**~~

~~The following control plan, when implemented is designed to reduce uncontrolled fugitive dust, based on a PM_{10} mass emission rate basis. From paved roadways and parking lots control 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 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~~	~~Whitesville Mill Service (Slag Processing)~~
~~Environmental manager~~	~~Plant Manager~~
~~4537 South Nucor Road~~	~~4537 South Nucor Road~~
~~Crawfordsville, IN 47933-9450~~	~~Crawfordsville, IN 47933-9450~~
~~Telephone: (765) 361-2659~~	~~Telephone: (765) 364-9251~~

~~**SECTION 2 – PAVED ROADS AND PARKING LOTS**~~

~~Dust from paved roads and parking lots shall be controlled by the use of a vehicular sweeper or by water application and shall be performed at least once every 14 days to achieve the limit of 16.8 pounds of silt per mile.~~

~~On request of the Assistant Commissioner, Nucor shall sample and provide 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.~~
~~(c) It is raining at the time of the scheduled cleaning.~~
~~(d) Road and parking lots are frozen or covered by ice, snow or standing water.~~
~~(e) Ambient temperature is near freezing.~~

~~SECTION 3 – UNPAVED ROADS~~

~~Unpaved roads at the slag processing facility and unpaved roads outside of the slag processing area will be tarred-and-chipped, treated with asphaltic emulsion, petroleum resin, chemical dust suppressant, or watered as needed for 90% instantaneous control based on~~ PM_{10} ~~mass emission basis dust control. 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.~~

~~Applications of asphaltic emulsion, petroleum resin or chemical dust suppressant will be applied based on vendor recommendations.~~

~~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 cleaning.~~
~~(b) The road segments are saturated with water such that the asphaltic emulsion, petroleum resin, or chemical 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.~~
~~(e) It is raining at the time of the scheduled treatment.~~
~~(f) Ambient temperature is near freezing.~~

~~SECTION 4 – 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.~~

~~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 applications 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 5 – SLAG PROCESSING~~

~~Emissions from slag processing shall be controlled through the application of water, weather permitting, or limiting drop height for processed slag transfer operations.~~

~~SECTION 6 – MATERIAL SPILL CONTROL~~

~~Incidents of material spillage on plant property leading to visible fugitive dust shall be investigated and promptly cleaned up.~~

~~SECTION 7 – 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 poisoned 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 visual emission opacities at 15-second intervals along the 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 in Sections 3 and 4.~~

~~SECTION 8 – APPROVED DUST SUPPRESSANTS~~

~~The following asphaltic emulsions, petroleum resins, and chemical dust suppressants have been previously approved for use at the Nucor facility:~~

1. ~~Soil Cement~~
2. ~~Calcium Chloride~~
3. ~~Road Pro Plus; Road Pro NT~~
4. ~~Road OYL; Road OYL NT~~
5. ~~Petrotac~~
6. ~~Coherex~~
7. ~~HydroPine~~
8. ~~Pennzsuppress~~
9. ~~Envirokeen 35 (EK35)~~
10. ~~Earth Armour~~
11. ~~Dust Fyghter~~

~~SECTION 9 – REFERENCES~~

1. ~~C. Cowherd, Jr., et al., Iron and Steel Open Dust Source Fugitive Emission Evaluation, EPA 600/2-79-103, U.S. Environmental protection Agency, Cincinnati, OH, May, 1979.~~

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed PSD/Significant Source Modification No. 107-32615-00038 and Significant Permit Modification No. 107-32627-00038. The staff recommends to the Commissioner that this Part 70 PSD/Significant Source Modification and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Aida DeGuzman 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) 233-4972 or toll free at 1-800-451-6027 extension 3-4972.

(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's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Company Name: Nucor Steel
Address City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-32615
SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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	346.45	127.70	123.38	-	-	-	-	-	-
TOTAL PTE BEFORE MODIFICATION	**346.70**	**128.68**	**124.36**	**0.71**	**10.82**	**0.08**	**12.88**	**15552.90**	
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	454.45	168.14	160.92	-	-	-	-	-	-
TOTAL PTE AFTER MODIFICATION	454.94	170.09	162.88	1.42	21.64	0.15	25.76	31,105.81	0.00
PTE INCREASE FROM MODIFIED UNITS	**108.24**	**41.42**	**38.52**	**0.71**	**10.82**	**0.08**	**12.88**	**15,553**	**1.28824E-04**
PROJECT TOTAL PTE CHANGE	**109.35**	**42.60**	**39.70**	**2.02**	**15.26**	**1.09**	**29.49**	**31672.77**	**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 EMISSISONS									
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	-
LMS	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)	**293.19**	**295.82**	**291.68**	**268.55**	**3,343.08**	**531.34**	**703.79**	**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: 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.: 107-32615
SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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-Heaters (TP1-TP5)	1020	257.6
60.0		1020	515.3

	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
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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: Nucor Steel
Address City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-32615
SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

	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
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				
	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
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
Greenhouse Gas Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

	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).

Company Name: Nucor Steel
Address City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
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SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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.

Company Name: **Nucor Steel**
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PSD/SSM No.: **107-32615**
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Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

[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

Company Name: Nucor Steel
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PSD/SSM No.: 107-32615
SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

[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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - TUNNEL FURNACE 1 and 2

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
Greenhouse Gas Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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.: 107-32615
SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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

	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
Greenhouse Gas Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - (Section D.25) SHUTTLE FURNACES 1 AND 2

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
Greenhouse Gas Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - (Section D.25) SHUTTLE FURNACES 1 AND 2

26 MMBtu/hr

13 MMBtu/hr each shuttle furnace	Greenhouse Gas		
	CO_2	CH_4	N_2O
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		
CO_2e Total in tons/yr	13,479		

Methodology
The N_2O Emission Factor for uncontrolled is 2.2. The N_2O 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
CO_2e (tons/yr) = CO_2 Potential Emission ton/yr x CO_2 GWP (1) + CH_4 Potential Emission ton/yr x CH_4 GWP (21) + N_2O Potential Emission ton/yr x N_2O 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.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - (Section D.25) SNUB FURNACE

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
Greenhouse Gas Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - (Section D.25) SNUB FURNACE

6 MMBtu/hr

	Greenhouse Gas		
	CO_2	CH_4	N_2O
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.:	**107-32615**
SPM No.:	**107-32627**
Plt ID:	**107-00038**
Reviewer:	**Aida DeGuzman**
Date:	**Dec. 11, 2012**

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

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - (Section D.26) 2 HOT STRIP ANNEALING FURNACES (HM #1 AND HM 32)

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
Greenhouse Gas Emissions

Company Name: **Nucor Steel**
Address City IN Zip: **4537 South Nucor Road, Crawfordsville, IN 47933**
PSD/SSM No.: **107-32615**
SPM No.: **107-32627**
Plt ID: **107-00038**
Reviewer: **Aida DeGuzman**
Date: **Dec. 11, 2012**

POTENTIAL TO EMIT - (Section D.26) 2 HOT STRIP ANNEALING FURNACES (HM #1 AND HM 32)

29.01			
14.505 MMBtu/hr each anneal furnace	Greenhouse Gas		
	CO_2	CH_4	N_2O
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		
CO_2e Total in tons/yr	15,040		

Methodology
The N_2O Emission Factor for uncontrolled is 2.2. The N_2O 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
CO_2e (tons/yr) = CO_2 Potential Emission ton/yr x CO_2 GWP (1) + CH_4 Potential Emission ton/yr x CH_4 GWP (21) + N_2O Potential Emission ton/yr x N_2O GWP (310).

Company Name: Nucor Steel
Address City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-32615
SPM No.: 107-32627
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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

Company Name: Nucor Steel
Address City IN Zip: 4537 South Nucor Road, Crawfordsville, IN 47933
PSD/SSM No.: 107-32614
SPM No.: 107-32565
Plt ID: 107-00038
Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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

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Reviewer: Aida DeGuzman
Date: Dec. 11, 2012

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

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Reviewer: Aida De Guzman
Date : Dec. 11, 2012

POTENTIAL TO EMIT FROM THE SLAG OPERATIONS AFTER THE MODIFICATION

					CONTROLLED PTE (TONS/YEAR)			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)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
*Crusher, TSP-6	305	0.00016	0.000072	0.000072	0.21	0.10	0.10	7.21	3.21	3.21
*10 Conveying Drop Points[1]	305	0.00009	0.000033	0.000033	1.20	0.44	0.44	40.08	14.69	14.69
*5 Conveying Drop Points[4]	305	0.00009	0.000033	0.000033	0.60	0.22	0.22	20.04	7.35	7.35
* Screen, TSP-8	600	0.00075	0.00026	0.00026	1.97	0.68	0.68	65.70	22.86	22.86
*Screen, TSP-2	341	0.00075	0.00026	0.00026	1.12	0.39	0.39	37.34	12.99	12.99
*EU-10, Slag 25 Drop Points[5]	600	0.00009	0.000033	0.000033	5.91	2.17	2.17	197.10	72.27	72.27
*Blend Plant - Material handling Front-End Loader, BP-1	305	0.00026	0.000130	0.000048	0.35	0.17	0.06	11.76	5.74	2.14
*Blend Plant - 6 Conveying Drop Points[2]	305	0.00009	0.000033	0.000033	0.72	0.26	0.26	24.05	8.82	8.82
*Permanent Screening Plant[3] - Screen, PS1 to Conveyor #2	300	0.00075	0.000260	0.000260	0.99	0.34	0.34	3.94	1.45	1.45
*Permanent Screening Plant[3] - Screen, PS1 to Conveyor #5	300	0.00075	0.000260	0.000260	0.99	0.34	0.34	3.94	1.45	1.45
*Permanent Screening Plant[3] - Conveyor #2 to Crusher	300	0.00016	0.000072	0.000072	0.21	0.09	0.09	3.94	1.45	1.45
*Permanent Screening Plant[3] - 7 Conveying Drop Points	300	0.00009	0.000033	0.000033	0.83	0.30	0.30	27.59	10.12	10.12
*Permanent Screening Plant[3] - Front-End Loader to Grizzly Feed Hopper	305	0.00026	0.000130	0.000048	0.35	0.17	0.06	11.76	5.74	2.14
TOTAL PTE					**15.45**	**5.69**	**5.47**	**454.45**	**168.14**	**160.92**

* 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	305	0.0054	0.0024	0.0024	7.21	3.21	3.21	Table 11.19-2-2
*10 Conveying Drop Points[1]	305	0.0030	0.0011	0.0011	40.08	14.69	14.69	Table 11.19-2-2
*5 Conveying Drop Points[4]	305	0.0030	0.0011	0.0011	20.04	7.35	7.35	Table 11.19-2-2
* Screen, TSP-8	447	0.0250	0.0087	0.0087	48.95	17.03	17.03	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
*EU-10, Slag 25 Drop Points[5]	447	0.0030	0.0011	0.0011	146.84	53.84	53.84	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 - 6 Conveying Drop Points[2]	305	0.0030	0.0011	0.0011	24.05	8.82	8.82	Table 11.19-2-2
*Permanent Screening Plant[3] - Screen, PS1 to Conveyor #2	60	0.0030	0.0011	0.0011	0.79	0.29	0.29	Table 11.19-2-2
*Permanent Screening Plant[3] - Screen, PS1 to Conveyor #5	60	0.0030	0.0011	0.0011	0.79	0.29	0.29	Table 11.19-2-2
*Permanent Screening Plant[3] - Conveyor #2 to Crusher	60	0.0030	0.0011	0.0011	0.79	0.29	0.29	Table 11.19-2-2
*Permanent Screening Plant[3] - 7 Conveying Drop Points	60	0.0030	0.0011	0.0011	5.52	2.02	2.02	Table 11.19-2-2
*Permanent Screening Plant[3] - Front-End Loader to Grizzly Feed Hopper	60	0.0088	0.0043	0.0016	2.31	1.13	0.42	Table 12.5-4
TOTAL PTE					**346.45**	**127.70**	**123.38**	

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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

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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	--

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 B

CONTROL TECHNOLOGY / PSD BACT ANALYSIS

Nucor Steel

Source Background and Description

Source Location:	**4537 South Nucor Road, Crawfordsville, Indiana 47933**
County:	**Montgomery**
SIC Code:	**3312**
Part 70 Operating Permit No.:	**T107-30293-00038**
Part 70 Issuance Date:	**June 1, 2012**
SSM/PSD No.:	**107-32615-00038**
SPM No.:	**107-32627-00038**
Permit Reviewer:	**Aida De Guzman**

Nucor Steel submitted a permit application on December 10, 2012 relating to the following proposed changes to the plant that will allow the production of wider width steel strips for the following modifications to its steel mini-mill:

New Emission Units:

(a) Four (4) natural gas-fired Tundish Nozzle Preheaters, installed through the years, permitted in 2013, each with a heat input capacity of 0.8 MMBtu/hour.

Modified Existing Emission Units:

(a) Meltshop-EAF Modification: (Section D.29) - Addition of six (6) new oxyfuel burners/lances, each with a designed rated capacity of 5.5 Megawatt per hour (MW/hr) for a total of 33 MW/hr to each electric arc furnace (EAF).

Note: Although the oxyfuel burners/lances combust natural gas, the emissions associated with combustion is accounted for in the scrap melting process at the Meltshop EAF. These oxyfuel burners are installed through the side of the two (2) EAF walls just above the steel liquid where they supply chemical energy, convection and flame radiation to transfer heat to the scrap metal.

(b) Installation of 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 and the following EAF-associated equipment:

(1) Charge buckets for single charge operation.

(2) Enhancements to scrap bay cranes and Melt Shop overhead cranes.

(3) Modifications, upgrades, repairs or additions to EAF, yard and LMF transformers to increase output.

(4) Switching to a one (1) bucket charge operation at the EAF's.

(5) Modifications to fans at both Melt Shop baghouses for increased energy efficiency.

(6) Modifications to existing carbon injection systems.

(b) (Section D.4) - Physical modification to the Castrip Caster and associated equipment including controls, modifications to structure, hot box, and transition piece to allow casting up to 80 inches wide of steel strip. The Castrip Caster maximum capacity will remain at 270 tons per hour.

(1) Upgrades to overhead cranes to enhance operations.

(2) Addition of fluoride to the VTD at an average rate of less than or equal to 250 lbs/heat.

(3) Addition of second ladle access to the LMS.

(c) (Section D.25) - Physical modification to the Hot Strip Rolling Mill to allow the rolling of wider steel strip.

The change in the width of the steel strips produced at the Castrip Caster will affect the following existing emission units:

(a) (Section D.29) - Increase in the actual steel melt at the Meltshop EAFs since the Castrip (Section D.4) will produce a wider steel strip. Likewise, the Meltshop Station which includes LMFs, Continuous Casters, Argon Oxygen (AOD) Vessels and Decarburization will also allow the processing of wider steel strip.

(b) (Section D.25) - Tunnel Furnace System, which includes Tunnel Furnace Nos. 1 and 2, Shuttle Furnace Nos. 1 and 2 and the Snub Furnace will be physically modified to process a wider steel strip.

(c) (Section D.19) - Cold Mill Annealing furnaces - increase utilization but no physical modification to process wider steel strip.

(e) (Section D.25) - Physical modification to the Hot Strip Mill including laminar cooling, run out roller table, new down coiler 1 and 2 and new or modified support equipment to allow rolling of wider steel strip.

(d) (Section D.26) - Hot Strip Mill - Annealing Furnaces - increase utilization but no physical modification to process wider steel strip.

(e) (Section D.15) - Physical modification to Pickle Line No.2 to allow the processing of wider steel strip.

(f) (Section D.29) - Increase burners to the five (5) Tundish Preheaters, TP1-TP5 at the Ladle Metallurgy Furnaces (LMFs) from 6 MMBtu/hr each to 12 MMBtu/hr each.

(g) (Section D.7) - Slag Processing, Handling and Storage - Increase in the actual slag production, processing and storage since the actual steel that will be melted at the EAFs will increase with no physical modification.

The proposed modification is subject to PSD review under 326 IAC 2-2-3(2), (PSD Rule: Control Technology Review Requirements) for PM, PM10, PM2.5, VOC, CO, NOx, SO2, lead and GHG (CO2e) because the net emissions increase of each regulated pollutant is at or above the significant level.

BACT requirements apply to each new and physically modified emission unit and pollutant-emitting activity at which an emissions increase would occur.

The BACT analysis submitted by Nucor Steel, which has been reviewed and analyzed by IDEM, OAQ is based on the draft “Top-Down approach: BACT Guidance” published by USEPA, Office of Air Quality Planning Standards, March 15, 1990. The BACT analysis has been based on the following sources of information which have been reviewed or contacted:

(1) RACT/BACT/LAER Information System; USEPA, BACT/LAER Clearinghouse;
(2) Compilation of Control Technology; USEPA, BACT/LAER Clearinghouse
(3) EPA, State, and Local Air Quality permits and applications where related;
(4) Control equipment and material vendors; and,
(5) OAQPS Control Cost Manual.

The following new and modified emission units with emissions increases are required to apply BACT under 326 IAC 2-2-3 (Control Technology Review Requirements) for PM, PM10, PM2.5, NOx, VOC, CO and SO2:

<u>New Emission Units:</u>

(a) Four (4) Tundish Nozzle Preheaters

<u>Physically Modified Emission Units:</u>

(a) (Section D.4) - CASTRIP Continuous Strip Caster

(b) (Section D.29) - Meltshop Station which includes EAFs, LMFs, Continuous Casters, Argon Oxygen (AOD) Vessels and Decarburization

(c) (Section D.25) - Tunnel Furnaces System which includes Tunnel Furnace Nos. 1 and 2, Shuttle Furnace Nos. 1 and 2 and the Snub Furnace

(d) (Section D.25) - Hot Strip Mill

(e) (Section D.29) - Tundish Preheaters,

(f) (Section D.15) - Pickle Line No. 2

The following new emission units and modified emission units with emissions increases are required to apply BACT under 326 IAC 2-2-3 (Control Technology Review Requirements) for GHGs and Lead (Pb):

<u>New Emission Units:</u>

(a) Four (4) Tundish Nozzle Preheaters

Physically Modified Emission Units:

(a) (Section D.29) - Meltshop Station which includes two (2) EAFs, three (3) LMFs, two (2) Continuous Casters, Argon Oxygen Decarburization (AOD) and Desulfurization

(c) (Section D.25) - Tunnel Furnace System

(c) (Section D.29) - Tundish Preheaters

BACT Definition and Applicability

Federal guidance on BACT requires an evaluation that follows a “top down” process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by the regulation or the permit, or the controls achieved in practice. The highest level of the control is then evaluated for technical feasibility.

The five basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially “available” control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies and controls applied to similar source categories.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering and source-specific factors related to safe and successful use of the controls.

Step 3: Rank The Remaining Control Technologies By Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate The Most Effective Controls And Document The Results

The fourth step entails an evaluation of energy, environmental and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

BACT FOR PARTICULATE INCLUDING METALLIC LEAD (PM, PM10, PM2.5 AND PB EMISSIONS):

The proposed modification has a net increase of 25 tons or greater of PM per year, 15 tons or greater of PM10 per year, 10 tons or greater of PM2.5 per year and 0.6 ton of metallic Pb per year. Therefore, the following new and physically modified emission units that emit these pollutants are required to apply Best Available Control Technology (BACT), pursuant to 326 IAC 2-2-3:

(Section D.29) Meltshop - EAFs, LMFs, Casters, AOD Vessels and Desulfurization

The operations which generate emissions at the meltshop are charging scrap, melting and refining, removing slag, and tapping steel. These processes produce metal dusts and gaseous products. The amount and composition of the particulate matter (PM) with components of other metallic HAPs, like Lead (Pb) emitted can vary depending on the scrap composition and types and amounts of furnace additives such as fluxes that are added to aid in slag formation. Iron or iron oxides are the primary component of the particulate.

The PM emission increase from the Meltshop is 285.8 tons/year, 285.8 tons of PM10 per year, 288.2 tons of PM2.5 per year and 1.02 tons of Lead (Pb) per year. Only the Meltshop Station has Lead emissions. The emissions increase of Lead from the Meltshop Station is 1.02 tons per year based upon potential to baseline actual emissions.

A BACT analysis will be conducted for the Meltshop Station which includes the two (2) EAFs, three (3) LMFs, AOD vessels, desulfurization station and two (2) continuous casters instead of individual emission units due to comingling of emissions. It is impractical to try to enclose each individual operation given the size and length of the product, equipment arrangement, and necessity to have access for the ladles' movement to the LMFs and casters. This process arrangement is reflected in most steel mills' BACT limits. Therefore, Nucor's BACT analysis for all pollutants affected (PM, PM10, PM2.5, VOC, NOx, CO, SO2 and Pb) from these operations was conducted as the Meltshop process. Note: Only the Meltshop is subject to BACT for Pb.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control PM, PM10, PM2.5 including metallic lead (Pb) emissions from the Meltshop Station:

(a) Electrostatic Precipitator (ESP),
(b) High Efficiency Cyclones,
(c) High Energy Scrubbers, and
(d) Fabric Filters (i.e., baghouses).

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing PM, PM10, PM2.5 and metallic Pb emissions from the Meltshop Station. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(a) ESPs - use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, including metallic Pb, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds such as those emitted from the meltshop operation. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge, resulting in ineffectiveness of the ESP. In addition, the exhaust gas stream from the steel mill meltshop contains high levels of zinc (10% - 20%) and other metal compounds which can foul ESP electrodes. Thereby, making the ESP ineffective. Therefore, an ESP is considered technically infeasible for controlling particulate emissions from the Meltshop. The OAQ is not aware of a steel mill where an ESP has been operated to control particulate emissions including metallic Pb from steel mill meltshop operations.

(b) High Efficiency Cyclones - Particulate removal including metallic Pb in cyclone collectors is achieved through the action of inertial forces, especially centrifugal. As the gas stream enters the top of the cyclone, a vortex is induced as it is forced to travel a circular path. Centrifugal forces cause the heavier particles to concentrate near the outer wall of the cyclone and particles of lesser mass to remain closer to the center of the vortex. Frictional and gravitational forces then act on the particles closest to the wall, causing them to fall toward the bottom of the cyclone, where they are collected in a hopper. Within the lower segment of the cyclone, the direction of the gas-flow vortex is reversed, and an inner ascending vortex is formed. The inner vortex consists of comparatively particulate-free air, which is collected through an outlet duct at the top of the cyclone. Cyclone collectors are considered technically feasible. However, they achieve the lowest particulate including metallic Pb removal efficiencies (less than 90%) of all particulate control devices, especially for submicron particulates and metallic Pb that will be emitted from the Meltshop Station. The OAQ is not aware of a steel mill where a cyclone collector has been operated to effectively control particulate emissions including metallic Pb from a steel mill meltshop.

(c) High Energy Scrubbers - High energy wet scrubbers are technically feasible and can achieve a high particulate removal rate including metallic Pb collection efficiency (90% or better), but at the expense of a punitive pressure drop (ranging from 6 - 20 inches of water), higher operational utilities, generation of large quantities of sludge along with the associated problem of sludge handling, de-watering, and disposal. The OAQ is not aware of a steel mill where a high energy wet scrubber has been operated to control particulate emissions including metallic Pb from a steel mill meltshop.

(d) Fabric filters or baghouses are technically feasible for collecting fine particulate matter emissions associated with metals from steel mill meltshops that have high particulate emissions. They can also achieve the highest control efficiency, among other particulate control devices, as applied to steel mill meltshops. Positive pressure baghouses or negative pressure baghouses have been used in the steelmaking industry.

(i) Positive pressure baghouses operate at internal pressures greater than atmospheric pressure. Typically, the fans are located upstream of the fabric filters. This allows the fans to pull air from the Meltshop Station and push the dust laden air through the fabric filters and into the ambient air via a continuous ridge vent (old design) rather than a stack. The discharge area of a ridge vent is on the order of four times that of a single stack.

(ii) Negative pressure baghouses operate at internal pressures less than atmospheric. The fans are located downstream of the fabric filters. This allows the fans to pull the gas laden air from the Meltshop Station, through the fabric filters, then push the air up through a central stack.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The following remaining control options are in order of descending control effectiveness:

(a) Fabric filters or baghouses - 99.9%

(b) High Energy Scrubbers - 90% or more

(c) High Efficiency Cyclones - 50 to 90%

Step 4 – Evaluate the Most Effective Controls and Document Results

Fabric filtration is the predominant control option for abatement of particulate emissions from meltshop operations due to its effectiveness. Scrubbers and cyclones are not considered as effective as fabric filters or baghouses for controlling particulate emissions including metallic Pb from the Meltshop Station.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other state agencies identified the following with respect to the Meltshop operations:

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitations**	**PM, PM10, PM2.5 and Pb Control Technology/PM, PM10, PM2.5 and Pb Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	502 tons/hr and [1]4,397,520 tons/yr	Baghouses PM - 0.0018 gr/dscf PM10 - 0.0052 gr/dscf PM2.5 - 0.0052 gr/dscf
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003 (Indiana)	502 tons/hr and [1]4,397,520 tons/yr	Baghouses PM - 0.0018 gr/dscf PM10 - 0.0052 gr/dscfl Lead - 0.24 lb/hr (3-hr block ave)
STEEL MILLS WITH CONTINUOUS FEED (CONSTEEL) PROCESS				
[1]Nucor Steel – Darlington, SC	0820-0001-CW	1/8/1998 (South Carolina)	[1]1,314,000 billet tons/yr	**Baghouse:** **PM/PM10 - 0.0015 gr/dscf**
Nucor Steel - Hertford County	08680T09	11/23/2004 (North Carolina)	capacity unknown	Baghouse: PM - 0.0018 gr/dscf PM10 - 0.0052 gr/dscf
Ameristeel – Charlotte, NC	19-99v-567	4/29/1999 (North Carolina)	569,400 tons/yr	Baghouse: PM/PM10 - 0.0052 gr/dscf
New Jersey Steel - Sayreville	-	- (New Jersey)	capacity unknown	no limit
STEEL MILLS WITH BATCH PROCESS				
[1]Osceola Steel Company	PSD 6123-10-0006	3/15/2010 (Georgia)		Baghouse: PM10 - 0.0018 gr/dscf with direct evacuation control (DEC) using baghouse for control PM and Pb - not limited
[1]Charter Steel – Ozaukee County	00DCF041	6/9/2000 (Wisconsin)	[1]750,000 tons/yr	**Baghouse:** **PM 0.0015 gr/dscf and 6.05 lbs/hr** **PM10 - 0.0014 gr/dscf and 5.56 lbs/hr**

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitations**	**PM, PM10, PM2.5 and Pb Control Technology/PM, PM10, PM2.5 and Pb Emissions Limit**
				Pb - 0.000065 gr/dscf or 0.57 lb/hr
Nucor Steel – Tuscaloosa, Inc.	413-0033	6/6/2006 (Alabama)	300 tons/hr	Baghouse: PM10 - 0.0018 gr/dscf PM - no limit Pb - 0.5 lb/hr
Gerdau AmeriSteel – Duval County	031057-007-AC (PSD-FL-349)	9/25/2005 (Florida)	1,192,800 tons/yr	Baghouse: PM - 0.0018 gr/dscf
Nucor Steel - Memphis	0710-04PC	11/6/2000 (Tennessee)	150 tons/hr	Baghouse: PM10 - 0.0020 gr/dscf
SDI - Pittsboro	PSD 063-16628-00037	8/29/2003 (Indiana)	[1]1,095,000 tons/hr	Baghouse: Filterable PM - 0.0018 gr/dscf and 19.81 lbs/hr Filterable and Condensable PM10 - 0.0052 gr/dscf and 57.22 lbs/hr
[1] Nucor-Yamato Steel – Blytheville	-	(Arkansas)	450 tons/hr	[1]Baghouse: PM /PM10- 0.0018 gr/dscf Pb - 0.40 lb/hr
Nucor Steel – Hickman	1139-AOP-R5	6/9/2003 (Arkansas)	425 tons/hr	Baghouse: PM10 - 0.0018 gr/dscf
Gallatin – Ghent	-	(Kentucky)	capacity - unknown-	Baghouse: PM/PM10 - 0.0018 gr/dscf
Chaparral Steel – Petersburg	51264	4/24/1998 (Virginia)	215 tons/hr	Baghouse: PM - 0.0018 gr/dscf PM10 - 0.0018 gr/dscf
Nucor Steel - Plymouth	-	Utah	capacity unknown	Baghouse: PM - 0.0033 gr/dscf PM10 - 0.0026 gr/dscf
[1]SDI – Butler, IN	CP033-8091-00043	6/25/1997 (Indiana)	[2]200 tons/hr	Baghouse: Filterable PM - 0.0052 for all EAFs Filterable PM/PM10 0.0018 gr/dscf and 20.1 lbs/hr EAF #1 Filterable PM/PM10 - 0.0018 gr/dscf and 15.3 lbs/hr EAF #2 PM10 - Filterable and Condensable PM - 0.0052 gr/dscf and 57.9 lbs/hr for EAF #1 PM10 - Filterable and Condensable PM - 0.0052 gr/dscf and 44.3 lbs/hr for EAF#2 Pb - 0.19 lb/hr (total for 2 baghouses controlling 2 EAFs, 2 casters)
[1]Minnesota Steel Industries, LLC	06100067-001	5/4/2007, Minnesota	[1]2,500,000 tons/year	[1]Baghouse: Total PM - 0.0018 gr/dscf and 9 lbs/hr (3-hr average)

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitations**	**PM, PM10, PM2.5 and Pb Control Technology/PM, PM10, PM2.5 and Pb Emissions Limit**
				PM10 - 0.0030 gr/dscf (3-hr average)
Nucor Steel – Decatur, (formerly Trico Steel)	712-0037	7/11/2002 (Alabama)	440 tons/hr (2 EAFs, and 3 LMFs)	Baghouse: PM (Filterable) - 0.0032 gr/dscf Pb - 0.002 lb/ton - 0.88 lb/hr
Nucor Steel – Jewett	PSD-1029	1/5/2003 (Texas)	240 tons/hr	Baghouse: PM - 0.0052 gr/dscf PM10 - 0.0052 gr/dscf Pb - 0.8800 lb/hr
IPSCO – Axis	503-8065	10/16/1998 (Alabama)	200 tons/hr	Baghouse: PM - 0.0033 gr/dscf
IPSCO – Montpelier, IA	-	(Iowa)	capacity unknown	Baghouse: PM - 0.0033 gr/dscf PM10 - 0.0033 gr/dscf
Roanoke Electric Steel – Roanoke, VA	20131	11/6/1998 (Virginia)	100 tons/hr	Baghouse: PM - 0.0034 gr/dscf PM10 - 7.5 lbs/hr
Nucor Steel –Berkeley County	-	(South Carolina)	capacity unknown	Baghouse: PM - 0.0035 gr/dscf PM10 - 0.0035 gr/dscf
Gerdau Ameristeel - Knoxville	-	(Tennessee)	500,000 tons/yr	Baghouse: PM - 0.004 gr/dscf PM10 - 0.004 gr/dscf
[1] Nucor Auburn Steel	7-0501-00044/00007	6/22/2004 (New York)	[1]665,000 tons/yr	Baghouse: PM - 0.0052 gr/dscf PM10 - 0.0052 gr/dscf
[1]Beta Steel	PSD 127-9642-00036	5/30/2003 (Indiana)	151 tons/hr	[1]PM - - 0.0052 gr/dscf PM10 - 0.0052 gr/dscf
Nucor Steel – Norfolk	35677RC3	6/22/2004 (Nebraska)	EAF - (capacity unknown)	Baghouse: PM - 0.0052 gr/dscf PM10 - 0.0052 gr/dscf
Arkansas Steel – Newport	35-AOP-R3	1/5/2001 (Arkansas)	50 tons/hr	Baghouse: PM - 0.0052 gr/dscf
[1]Charter Steel	PSD No. 13-04176	2/12/2008 (Ohio)	[1]772,391 tons/yr	[1]Baghouse: PM/PM10 - 12.43 lbs/hr and 40.15 tons/yr with DEC for capture and baghouse for control
Thyssenkrupp Steel	AL-0230	8/17/2007(Alabama)	126 tons/hr	PM10 - 0.0018 No PM limit No Pb limit

Notes: [1] limits are reflected in the actual permit.
[2] Not limited in the actual permit.
All the other capacities were not verified in the actual permits.

Lead Conclusion:
The review of the RBLC indicates the consistent use of a baghouse from all sources identified in controlling Metallic Lead (Pb) from Meltshops with a range of Pb BACT emissions limitations from 0.19 lb/hr to 0.88 lb/hr.

SDI Butler, Indiana - This source has the lowest Pb limit of 0.19 pound per hour, using a baghouse. This limit is for two (2) EAFS and two (2) casters. This source is not comparable with Nucor Indiana because Nucor is almost three (3) times the size of SDI Butler. A small source will have fewer emissions than a large source, which is why SDI can meet a lower emission limit.

Thyssenkrupp Steel - This source listed a limit for AOD and 2 LMFs vented to a common baghouse with PM10 emissions limit of 0.0018 gr/dscf. This limit is not comparable with Nucor, Indiana because Nucor is almost four (4) times the size of Thyssenkrupp. In addition, only two (2) sources of emissions are being controlled by the baghouse, as compared to multiple emissions points being controlled by the Meltshop baghouse at Nucor.

Nucor Indiana - Nucor has an existing lead limit of 0.24 pound per hour for the Meltshop Station, using a baghouse to control its lead emissions, which is the next most stringent limit from among the sources identified in the RBLC. Therefore, Nucor's BACT for Pb from the Meltshop Station shall remain the same.

IDEM, OAQ BACT Determination:

Nucor's BACT for the Meltshop which includes the two EAFs, three LMFs, AOD vessel, desulfurization station and two Meltshop continuous casters is the continued use of two baghouses to control metallic Pb emissions with the following emission limitations:

(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.

Particulate Conclusion:

The review of the RBLC indicates the consistent use of a baghouse in controlling particulate emissions from Meltshops with a wide range of particulate BACT emission limitations from 0.0014 gr/dscf to 0.0052 gr/dscf.

Nucor Steel in Darlington, South Carolina and Charter Steel in Ozaukee, Wisconsin have the most stringent PM emissions limits of 0.0015 gr/dscf, while Charter Steel PM10 is the most stringent at 0.0014 gr/dscf.

Nucor Steel – Darlington uses a Consteel® process (see below for the process detailed description) in its steel production. It is not comparable to Nucor Steel, Indiana which uses a batch operation. There is less dust generated in a Consteel® process than in a batch process. More dust input to the meltshop baghouse results in more output from the meltshop baghouse and vice-versa.

Consteel®- is the process of continuously feeding and preheating the metallic charge (scrap, pig iron, HB, etc.) to the EAF while controlling gaseous emissions. The charge is loaded directly from the scrap yard or rail car conveyor. The charge is then automatically and continuously transported to the EAF as it is preheated by off gases leaving the furnace through the preheat conveyor. Once preheated, the charge discharges into the EAF where it is continuously melted by the liquid steel. The conveyor leads the scrap from the yard directly into the EAFs continuously, eliminating charge buckets and the need to open the furnace roof. The elimination of the charge buckets minimizes dust formation in the canopy hood, and the preheating section of the conveyor acts like a deposit chamber allowing dust to settle on the scrap for recycling inside the furnace. Therefore, there is less dust or particulate generated by this Consteel® process to be controlled by the meltshop baghouse, which results in a lower baghouse output. Thus, meeting a more stringent limit as in the case of Nucor, Darlington.

Batch Melting process - The Meltshop EAF in this type of process produces batches of molten steel known "heats". The EAF operating cycle is called a tap-to-tap cycle and is made up of the following operations:

(a) Furnace Charging - The roof and electrodes are raised and are swung to the side of the furnace to allow the scrap-charging crane to move a full bucket of scrap into place over the furnace. The bucket bottom is usually a clamshell design; i.e. the bucket opens up by retracting two segments on the bottom of the bucket. The scrap falls into the furnace and the scrap crane removes the scrap bucket. The roof and electrodes swing back into place over the furnace. The roof is lowered and then the electrodes are lowered to strike an arc on the scrap. This commences the melting portion of the cycle. Continuous charging operations such as Consteel® eliminate the charging cycle.

(b) Melting - The melting period is the heart of Meltshop EAF operations. The Meltshop EAF has evolved into a highly efficient melting apparatus. Melting is accomplished by supplying energy to the furnace interior. This energy can be electrical or chemical.

(c) Refining - Refining operations in the electric arc furnace have traditionally involved the removal of phosphorus, sulfur, aluminum, silicon, manganese and carbon from the steel. These refining reactions are all dependent on the availability of oxygen.

(d) De-slagging - De-slagging operations are carried out to remove impurities from the furnace. During melting and refining operations, some of the undesirable materials within the bath are oxidized and enter the slag phase.

(e) Tapping - Once the desired steel composition and temperature are achieved in the furnace, the tap-hole is opened, the furnace is tilted, and the steel pours into a ladle for transfer to the next batch operation (usually a ladle furnace or ladle station).

(f) Furnace turn around - Is the period following completion of tapping until the furnace is recharged for the next heat. During this period, the electrodes and roof are raised and the furnace lining is inspected for refractory damage.

<u>Charter Steel – Ozaukee, Wisconsin</u> – This source has a primary limit of 6.05 pounds of PM/hour which equates to 0.0015 gr/dscf and a primary limit of 5.56 pounds of PM10 per hour which equates to 0.0014 gr/dscf. These limits were based upon the EAF melting capacity of 137.5 tons/hour and a yearly limit of 750,000 tons. These limits apply to the Meltshop Baghouse which controls one EAF, one vacuum degasser, one continuous caster, tundish preheaters, ladle preheaters and cut-off torches. Based upon stack information from Wisconsin DNR, the source has demonstrated compliance with these limits. Although the grain loading limits are the lowest from among the listed sources in the RBLC, they were derived from the PM and PM10 emission limits in pound per hour from a source that is six (6) times smaller than Nucor Steel, Indiana (4,397,520 tons of steel tapped per year). The Nucor Steel PM limit of 0.0018 gr/dscf and the PM10 limit of 0.0052 gr/dscf is for two EAFs, one AOD Vessel, one Desulfurization Station, two Meltshop Continuous Casters and three LMFs. A small source will emit fewer emissions when compared to a large source. Therefore, Charter Steel is not comparable with Nucor Steel, Indiana.

<u>Minnesota Steel Industries</u> - This source is still being constructed as of this permitting action. The PSD limit for PM10 of 0.0030 gr/dscf is for the use of a baghouse controlling one EAF, one LMF, one casting area, tundish preheaters and one vacuum degasser for the production of 2,500,000 tons per year of steel slabs for hot rolled coils. Minnesota Steel is one half the melting capacity of Nucor Steel. Therefore, Nucor Steel PM10 emissions are greater at 0.0052gr/dscf.

IDEM, OAQ BACT Determination:

Therefore, Nucor's BACT for the Meltshop Station which includes the two EAFs, three LMFs, one AOD vessel, one desulfurization station and two Meltshop continuous casters is the continued use of two baghouses to control its particulate emissions with the following emission limitations:

(a) The Particulate Matter (Filterable) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, one (1) AOD, one (1) 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.

(b) The PM10/$PM_{2.5}$ (filterable and condensable) emissions from the Meltshop Baghouses (1 and 2) controlling the two (2) EAFs, one (1) AOD, one (1) 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.

(Section D.4) - CASTRIP Continuous Strip Caster

In the continuous casting process, hot molten steel is poured from the ladle into a refractory lined tundish. The tundish maintains a constant stream of molten steel that pours through nozzles into a water-cooled copper mold, where partial solidification takes place. Lubricants are sprayed into the molds to aid steel movement through the mold. As the metal solidifies in the mold, the cast product is withdrawn continuously. The partially solidified product moves into a secondary cooling zone where water spray cools and solidifies it.

The PM, PM10, PM2.5 and Pb emissions increases from the CASTRIP - Continuous Caster based on potential to baseline actual is 0.78 ton/year for each pollutant.

<u>Step 1 – Identify Control Options</u>

The following control technologies were identified and evaluated to control PM, PM10, PM2.5 and Pb emissions from the Castrip Continuous Caster:

(a) Electrostatic Precipitator (ESP),
(b) High Efficiency Cyclones,
(c) High Energy Scrubbers, and
(d) Fabric Filters (i.e., baghouses).

<u>Step 2 – Eliminate Technically Infeasible Control Options</u>

The test for technical feasibility of any control option is whether it is both available and applicable to reducing PM, PM10, PM2.5 and Metallic Pb emissions from the Continuous Caster. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(a) ESPs - use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds such as those emitted from the Continuous Caster. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge, resulting in an ineffectiveness of the ESP. In addition, the exhaust gas stream from the steel mill Continuous Caster contains high levels of zinc (10% - 20%) and other metal compounds which can foul ESP electrodes. Thereby, making the ESP ineffective. Therefore, an ESP is considered technically infeasible for controlling particulate emissions from the Continuous Caster. The OAQ is not aware of a steel mill where an ESP has been operated to control particulate emissions from a steel mill Continuous Caster operation.

(b) High Efficiency Cyclones - Particulate removal in cyclone collectors is achieved through the action of inertial forces, especially centrifugal. As the gas stream enters the top of the cyclone, a vortex is induced as it is forced to travel a circular path. Centrifugal forces cause the heavier particles to concentrate near the outer wall of the cyclone and particles of lesser mass to remain closer to the center of the vortex. Frictional and gravitational forces then act on the particles closest to the wall, causing them to fall toward the bottom of the cyclone, where they are collected in a hopper. Within the lower segment of the cyclone, the direction of the gas-flow vortex is reversed, and an inner ascending vortex is formed. The inner vortex consists of comparatively particulate-free air, which is collected through an outlet duct at the top of the cyclone. Cyclone collectors are considered technically feasible. However, they achieve the lowest particulate removal efficiencies (less than 90%) of all particulate control devices, especially for submicron particulates that will be emitted from the Continuous Caster. The OAQ is not aware of a steel mill where a cyclone collector has been operated to effectively control particulate emissions from a steel mill Continuous Caster.

(c) High Energy Scrubbers - High energy wet scrubbers are technically feasible and can achieve a high particulate collection efficiency (90% or better), but at the expense of a punitive pressure drop (ranging from 6 - 20 inches of water), higher operational utilities, generation of large quantities of sludge along with the associated problem of sludge handling, de-watering, and disposal. The OAQ is not aware of a steel mill where a high energy wet scrubber has been operated to control particulate emissions from a steel mill Continuous Caster.

(d) Fabric filters or baghouses are technically feasible for collecting fine particulate matter emissions from a steel mill Continuous Caster that have high particulate emissions. They can also achieve the highest control efficiency, among other particulate control devices, as applied to a steel mill Continuous Caster. Positive pressure baghouses or negative pressure baghouses have been used in the steelmaking industry.

(i) Positive pressure baghouses operate at internal pressures greater than atmospheric pressure. Typically, the fans are located upstream of the fabric filters. This allows the fans to pull air from the Continuous Caster and push the dust laden air through the fabric filters and into the ambient air via a continuous ridge vent (old design) rather than a stack. The discharge area of a ridge vent is on the order of four times that of a single stack.

(ii) Negative pressure baghouses operate at internal pressures less than atmospheric pressure. The fans are located downstream of the fabric filters. This allows the fans to pull the gas laden air from the Continuous Caster, through the fabric filters, then push the air up through a central stack.

<u>Step 3 – Rank Remaining Control Technologies by Control Effectiveness</u>

The following remaining control options are in order of descending control effectiveness:

(a) Fabric filters or baghouses - 99.9%

(b) High Energy Scrubbers - 90% or more

(c) High Efficiency Cyclones - 50 to 90%

Step 4 – Evaluate the Most Effective Controls and Document Results

Fabric filtration is the predominant control option for abatement of particulate including metallic Pb from the Continuous Caster operation due to its effectiveness. Scrubbers and cyclones are not considered as effective as fabric filters or baghouses for controlling particulate emissions ncluding metallic Pb from a Continuous Caster.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies identified the following with respect to the Castrip - Continuous Caster:

CASTRIP - CONTINUOUS CASTER				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitation**	**PM, PM10, PM2.5, Pb Control Technology/PM, PM10, PM2.5, Pb Emission Limitations**
Proposed limit: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	270 ton/hour	Baghouse: PM - (Filterable) - 0.0018 gr/dscf and 3.08 lb/hr PM10/PM2.5 - (Filterable and Condensable PM10) - 0.0052 gr/dscf and 8.9 lbs/hr Pb = 0.13 lb/hr (3- hr average)
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003 (Indiana)	[2]270 tons/hr	Baghouse: PM/PM10 (Filterable) - 0.0018 gr/dscf and 3.08 lbs/hr. PM/PM10 (Filterable and Condensable) - 0.0052 gr/dscf and 8.9 lbs/hr Pb = 0.13 lb/hr (3- hr average)
Mid American Steel and Wire Co	2003-106-C(M-1) PSD	9/8/2008		Baghouse: PM - 0.002 gr/dscf
AK Steel Corporation	03-17463	1/11/2010, Ohio		Baghouse : PM - 0.0052 gr/dscf, PM10 (Filterable) - 0.0052
[1]V&M Star	P0103995	4/10/2009, Ohio	[1]830,000 tons/yr Liquid Steel for steel pipes/ tubes	[1]Mechanical shrouding at 95% control efficiency PM/PM10 - 0.07lb/ton, 0.5 lb/hr and 1.5 tons/yr Pb not limited

CASTRIP - CONTINUOUS CASTER				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitation**	**PM, PM10, PM2.5, Pb Control Technology/PM, PM10, PM2.5, Pb Emission Limitations**
Charter Steel	13-04176	2/12/2008, Ohio		Baghouse: PM/PM10 - 1.10 lbs/hr and 3.55 tons/yr [1]Pb = 0.57 lb/hr
Nucor Steel-Auburn	7-0501-00044/00007	6/22/2004,NY		Baghouse, Caster is controlled by the Meltshop/EAF baghouse PM - 0.0052 gr/dscf PM10 - 0.0052 gr/dscf Pb not limited

Notes: [1]Limits are reflected in the actual permit.
[2] Not a production limit

The review of RBLC indicates a range of particulate BACT emission limitations from 0.0018 gr/dscf to 0.0052 gr/dscf using a baghouse. Most sources vent the caster emissions into the Meltshop Baghouse, as with Nucor, Indiana's Meltshop caster. However, its CASTRIP - Continuous Caster is located in a building that is separate from the Meltshop. The CASTRIP - Continuous Caster is currently controlled by the LMS-2 Baghouse and it has the most stringent PM and PM10 BACT emission limits at 0.0018 gr/dscf of PM and 0.0052 gr/dscf for PM10. Only Charter Steel has a PB limit of 0.57 lb/hr for the caster.

IDEM, OAQ BACT Determination:

Therefore, Nucor's BACT for the CASTRIP - Continuous Caster is the continued used of the LMS-2 Baghouse with the following emission limitations:

(a) The PM (filterable) emissions from the LMS-2 baghouse in conjunction with the Continuous Caster, identified as CS-1 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.

(b) The PM10/$PM_{2.5}$ (filterable and condensable) emissions which include emissions from the LMS-2 baghouse in conjunction with the Continuous Caster, identified as CS-1, 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.

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

(Section D.15) - Pickle Line No.2

Acid pickling is the process in which steel products are immersed in heated acid solution to remove surface scales (iron oxides). The steel product is rinsed in water after it has been immersed in the pickling solution. Hydrochloric acid (HCl) is the solution being used at Nucor, Indiana for this process which generates fumes that are toxic and corrosive.

The PM, PM10 and PM2.5 emissions increases from the Pickle Line No.2 based upon potential to baseline actual is 3.24 tons per year for each pollutant.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control PM, PM10 and PM2.5 emissions from the steel pickling operation.

(a) Wet Scrubbers
(b) Fabric Filters (Baghouses)

Step 2 - Eliminate Technically Infeasible Control option

(a) Wet Scrubber - All particulate wet scrubber designs utilize particle and/or droplet inertia as the fundamental force to transfer particles from the gas stream to the liquid stream. Within the scrubber, particle-laden air is forced to contact the liquid droplets, sheets of liquid on a packing material, or jets of liquid from a plate. Particles with too much inertia impact on the water droplet, water sheet, or water jet instead of passing around the "target" with the gas stream.

Wet scrubbers are used to control inorganic fumes, vapors, and gases (e.g. chromic acid, hydrogen sulfide, ammonia, chlorides, fluorides and SO2); volatile organic compounds (VOC); and particulate matter (PM), including PM less than or equal to 10 micrometers (µm) in aerodynamic diameter (PM10), PM less than or equal to 2.5 µm in aerodynamic diameter (PM2.5) and hazardous air pollutants (HAP) in particulate form (PM_{HAP}). This control option is considered technically feasible for controlling vapors from the pickling operation.

(b) Fabric Filters (Baghouses) - Particulate Matter (PM), including PM less than or equal to 10 micrometers (µm) in aerodynamic diameter (PM10), PM less than or equal to 2.5 µm in aerodynamic diameter (PM2.5) and hazardous air pollutants (HAP) in particulate form, such as most metals (mercury is the notable exception, as a significant portion of emissions are in the form of elemental vapor). This is not technically feasible in controlling vapors from the pickling operation because humidity in the air stream will cause clogging of the filters and render the baghouse useless. Therefore, Fabric Filters are not considered technically feasible in controlling the picking operation.

Step 3: Rank the Remaining Control Technologies By Control Effectiveness

Wet Scrubbers for Inorganic Gases: Control device vendors estimate that removal efficiencies range from 95 to 99 percent (EPA 1993).

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies identified the following with respect to the Pickling Operation:

PICKLE LINE NO.2				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Capacity**	**PM, PM10, PM2.5 Control Technology/PM, PM10, PM2.5 Emission Limitations**
Proposed limit: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	250 tons/hr or 2,190,000	Scrubber: PM (Filterable) - 0.01 gr/dscf PM10/PM2.5 (Filterable and Condensable PM) -

PICKLE LINE NO.2				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Capacity**	**PM, PM10, PM2.5 Control Technology/PM, PM10, PM2.5 Emission Limitations**
				0.01 gr/dscf Good operating practices
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003 (Indiana)	250 tons/hr or 2,190,000	Scrubber: Exhaust grain loading - 0.01 gr/dscf
ThyssenKrupp Steel and Stainless USA, LLC	503-0095-X001 thru X026	8/17/2007, Alabama	2,970,000	Caustic Scrubber: PM - 0.0050 gr/dscf
			1,320,000	PM/PM10 (filterable) = 2.185 lb/hr
Charter Steel	02-DCF-178	12/19/2003, Wisconsin	unknown	Packed Bed Wet Scrubber: Hydrogen Chloride (HCl) emissions - 7.85 lbs/hour
SDI, Butler	CP033-5625-00043	8/8/1996, Indiana	1.4 million	Scrubber: PM (Filterable) - 1.23 lbs/hr

The review of the RBLC showed only two sources with BACT determinations for a pickling operation. Each BACT is the use of a Scrubber to control the particulate in the form of acid from the pickling process. The BACT limits are in gr/dscf and pounds per hour. ThyssenKrupp has a more stringent limit than Nucor at 0.005 gr/dscf versus 0.01 gr/dscf. Nucor's pickle line was constructed in 1997, a decade before the ThyssenKrupp pickle line was constructed (2007). The earlier BACT determination was less stringent as seen in Nucor's permit. To modify or replace Nucor's existing scrubber to meet the ThyssenKrupp BACT limit as part of this PSD permitting evaluation, the incremental cost would be intuitively cost prohibitive since the net emissions increase is only 3.24 tons/year.

IDEM, OAQ BACT Determination:

The BACT for the Pickling Operation is, therefore, the continued use of a scrubber with the following particulate emission limitations:

(a) Pickling line, identified as PL2, shall be controlled by a dedicated scrubber.

(b) The PM (filterable) emissions from the PL2 Scrubber shall not exceed 0.01 gr/dscf.

(c) The PM10 and PM2.5 (filterable and condensable) emissions from the PL2 Scrubber shall not exceed 0.01 gr/dscf.

(d) The pickling tank shall operate with a closed vent system, covered by lids, and maintained under negative pressure, except during loading and unloading.

(e) Loading and unloading shall either be conducted through enclosed lines or each point shall be controlled.

(f) The visible emissions from each pickling line scrubber stack shall not exceed 5% opacity, based on a 6-minute average.

(g) Good working practices shall be observed, such as adjusting damper controls and settings on the fume systems.

(Section D.29) - Tundish Preheaters, TP1 through TP5 and Tundish Nozzle Preheaters

The Preheaters are designed to achieve high preheat temperatures for the Tundish. The Tundish are preheated to keep the molten steel flowing into the molds of the continuous casting machine. The Tundish Preheaters are natural gas-fired with propane as a backup fuel, each with a heat input capacity of 12 MMBtu/hr. The nozzle preheaters have a heat input capacity of 0.8 MMBtu/hr each, a total of 6.4 MMBtu/hr.

The PM, PM10, PM2.5 and Pb emissions increases from the Tundish Preheaters based upon potential to baseline actual is 0.25 ton of PM per year, 0.98 ton of PM10 per year, 0.98 ton of PM2.5 per year, and 16.87059E-06 ton of Pb per year; while the four (4) additional Tundish Nozzle Preheaters have a total potential to emit (PTE) PM10 and PM2.5 emissions of 0.1 ton/year each pollutant and 1.2882E-04 ton of Pb per year.

Step 1: Identify Potential Control Technologies, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness, Step 4 – Evaluate the Most Effective Controls and Document Results

There are no particulate and lead add-on control technologies to control particulate and lead emissions from tundish preheaters and tundish nozzle preheaters based upon the search of the RBLC and other permitting agency websites.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies identified the following with respect to tundish preheaters and Nozzle Preheaters:

Tundish Preheaters, TP1 through TP5 and Tundish Nozzle Preheaters				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Heat Input**	**PM, PM10, PM2.5, Pb Control Technology/PM, PM10, PM2.5, Pb Emission Limitations**
Proposed limit: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	Increase burners to12.0 MMBtu/hr each	Using natural gas as primary fuel and propane as backup PM (Filterable only) - 1.9 lb/MMCF PM10 (Filterable and Condensable PM) - 7.6 lb/MMCF PM2.5 (Filterable and Condensable PM) - 7.6 lb/MMCF
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003 (Indiana)	6 MMBtu/hr each	Using natural gas as primary fuel and propane as backup Heat input limit to 6 MMBtu/hr each PM/PM10 - 7.6 lb/MMCF
[1]Charter Steel	13-04176	2/12/2008, Ohio	12 MMBtu/hr	0.09 lb/hr and 0.39 ton/year
[1]Minnesota Steel	06100067-002	5/42007, Minnesota	Not specified in the	Using natural gas as

Tundish Preheaters, TP1 through TP5 and Tundish Nozzle Preheaters				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Heat Input**	**PM, PM10, PM2.5, Pb Control Technology/PM, PM10, PM2.5, Pb Emission Limitations**
Industries, LLC			permit	fuel

Notes: [1]Limits are reflected in the actual permit.

The RBLC does not identify any control options including lead emission limit for tundish preheaters.and tundish nozzle preheaters Only two sources were identified from the RBLC with BACT using natural gas for fuel. Charter Steel has a PM/PM10 limit of 0.09 lb/hr and 0.39 ton/year, derived using an emission factor of 7.6 lb/MMCF, which is similar to Nucor Steel, Indiana's current limit of 7.6 lb/MMCF of the fuel usage.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel.

IDEM, OAQ BACT Determination:

Therefore, Nucor's BACT for PM, PM10, PM2.5 and Pb for the Tundish Preheaters and Tundish Nozzle Preheaters is the following:

(a) The Tundish Preheaters (TP1 through TP5) and Tundish Nozzle Preheaters (TPH1 through TPH8) shall combust natural gas as the primary fuel.

(b) When burning natural gas the following BACT applies:

(1) PM (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).

(2) 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).

(3) PM (filterable only) emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 1.9 pounds per million cubic feet of natural gas burned, 0.012 pounds per hour (total).

(4) PM10 and PM2.5 (filterable and condensable) emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 7.6 pounds per million cubic feet of natural gas burned, 0.05 pounds per hour (total).

(c) The Tundish Preheaters (TP1 through TP5) and 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.

(d) When burning propane the following BACT applies:

(1) The PM10 and PM2.5 (Filterable and Condensable) emissions from Tundish Preheaters (TP1 through TP5) shall each not exceed 0.007 pound per gallon

(lb/gal) of propane burned.

(2) The PM (filterable) emissions from the Tundish Preheaters (TP1 through TP5) shall not exceed 0.002 lb/gal of propane burned.

(3) The PM (filterable) emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall not exceed 0.002 lb/gal of propane burned.

(4) The PM10 and PM2.5 (Filterable and Condensable) emissions from Tundish Nozzle Preheaters (TPH1 through TPH8) shall each not exceed 0.007 lb/gal of propane burned.

(Section D.25) - Hot Strip Mill and Tunnel Furnace System (Tunnel Furnaces Nos. 1 and 2 Shuttle Furnaces Nos. 1 and 2 and Snub Furnace)

In the hot mill, steel strands, billets, or slabs are heated in the Hot Mill Reheat Furnace or Tunnel Furnace system so that they become soft enough to roll. If the metal is too cold, then it will be too hard, and it will crack and stress the rolling equipment. If the metal is too hot, then cracking, surface melting and blemishes will occur when rolled. If the metal is not heated uniformly, then uneven deformation will occur, resulting in poor quality.

	POTENTIAL EMISSIONS (tons/year)				BASELINE ACTUAL EMISSIONS (tons/year)				EMISSIONS INCREASE (tons/year)			
Emissions Units	PM	PM10	PM2.5	Pb	PM	PM10	PM2.5	Pb	PM	PM10	PM2.5	Pb
Section D.25 -Tunnel Furnaces No. 1 and No.2	0.8	3.3	3.3	2.15E-04	2.20	2.20	2.20	0.0	0.0	1.1	1.1	2.15E-04
Section D.25 -Tunnel Furnace Shuttles 1 and 2	0.21	0.85	0.85	5.58E05	0.30	0.30	0.30	0.0	0.0	0.55	0.55	5.58E05
Section D.25-Tunnel Furnace Snub	0.05	0.20	0.20	1.29E05	0.0	0.0	0.20	0.0	0.05	0.20	0.20	1.29E05
Section D.25-Hot Strip Mill Process	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

As seen in the above table, Tunnel Furnaces Nos. 1 and 2 and Shuttle Furnaces Nos. 1 and 2, are subject to PM10, PM2.5 and Pb while the Snub Furnace is subject to BACT for PM, PM10, PM2.5 and Pb under 326 IAC 2-2-3.

Step 1: Identify Potential Control Technologies, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness, Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control technologies found for tunnel furnace systems based upon the search of the RBLC and other permitting agency websites.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies identified the following with respect to the tunnel furnace system:

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)			
Plant	**Permit/RBLC No. Date Issued and State**	**Capacity**	**PM, PM10,PM2.5, Pb Control Technology/ Emission Limitations**
Proposed limit: Nucor Steel -	Proposed (Indiana)	50 MMBtu/hr	PM = 1.9 lb/MMCF PM10/PM2.5 - 7.6

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)			
Plant	**Permit/RBLC No. Date Issued and State**	**Capacity**	**PM, PM10,PM2.5, Pb Control Technology/ Emission Limitations**
Crawfordsville			lb/MMCF
Existing Tunnel Furnaces 1 and 2 Nucor Steel - Crawfordsville	11/21/2003	84 MMBtu/hr	Not subject to BACT for these pollutants
Nucor Steel - Berkeley	SC-0112 5/5/2008, South Carolina	58 MMBtu/hr	PM - 0.0076 lb/MMBtu or 7.6 lb/MMCF
SteelCorr, Inc. Blue water project	AR-0077 7/22/2004, Arkansas	160 MMBtu/hr	PM - 0.0076 lb/MMBtu or 7.6 lb/MMCF
New Steel - Ohio	OH-0315	187 MMBtu/hr	PM - 1.43 lb/hr PM2.5 - 1.43 lb/hr

The RBLC does not identify any add-on control options including Pb emissions limit for tunnel, shuttles or snub furnaces. Based upon the RBLC, the BACT found was only for PM and is consistently at 7.6 lb/MMCF. This BACT limit was based upon the emission factor for natural gas combustion.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel.

IDEM, OAQ, BACT Determination:

Therefore, Nucor's BACT for PM, PM10, PM2.5 and Pb for the Tunnel, Shuttle and Snub Furnaces is the following:

(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.

(b) When burning natural gas the following BACT applies:

(1) 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 7.6 pounds per million cubic feet (lb/MMCF) of natural gas burned.

(2) The PM (filterable) emissions from the Snub Furnace shall not exceed 1.9 lb/MMCF of natural gas burned.

(c) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnaces Nos. 1 and 2 and Snub Furnace 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.

(d) When burning propane the following BACT applies:

(1) 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.

(2) The PM (filterable) emissions from the Snub Furnace shall not exceed 0.002 lb/gal of propane burned.

BACT FOR NITROGEN OXIDE (NOx) EMISSIONS:

The proposed modification has an emissions increase greater than the PSD significant level of 40 tons of NOx per year. Therefore, all the following new and physically modified emission units that emit NOx are required to apply Best Available Control Technology (BACT), pursuant to 326 IAC 2-2-3:

Meltshop - EAFs, LMFs, Casters, AOD Vessels and Desulfurization

NOx is formed from the chemical reaction between nitrogen and oxygen at high temperatures. NOx formation occurs by different mechanisms. In the Meltshop, NOx predominantly forms from thermal dissociation and is a subsequent reaction of nitrogen and oxygen molecules in the combustion air. This mechanism of NOx formation is referred to as *thermal NOx*. The other mechanisms of NOx formation such as *fuel NOx* (due to the evolution and reaction of fuel-bound nitrogen compounds with oxygen) and *prompt NOx* (due to the formation of HCN followed by oxidation to NOx).

The NOx emission increase from the Meltshop based on the maximum potential minus baseline actual emissions is estimated at 596.2 tons/year.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control NOx emissions from the Meltshop Station:

(a) Combustion Controls;

(b) Selective Catalytic Reduction (SCR);

(c) Non-Selective Catalytic Reduction (NSCR);

(d) SCONOx Catalytic Oxidation/Absorption;

(e) Shell DeNOx System (modified SCR);

(f) Selective Non-Catalytic Reduction (SNCR) options -

(1) Exxon's Thermal DeNOx®
(2) Nalco Fuel Tech's NOxOUT®
(3) Low Temperature Oxidation (LTO)

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing NOx emissions from the Meltshop. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(a) Combustion Controls - There is an entire group of combustion controls for NOx reduction from various combustion units as follows:

(1) Low Excess Air (LEA) - This control option is typically used in conjunction with some of the other options. The use of this option will result in the generation of additional CO emissions, which is another pollutant under review in this BACT analysis. In addition, LEA is not very effective for implementation in the Meltshop, especially the EAFs that do not operate with combustion air feeds, since the combustion process is not modulated with near-atmospheric furnace conditions. Thus, this option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(2) Oxyfuel Burner - The existing Meltshop EAF system does employ natural gas-fired oxyfuel burners, thus, this option will be included for further consideration in this BACT analysis.

(3). Overfire Air (OFA) - This control option is geared primarily for fuel NOx reduction, which is not the major NOx formation mechanism from the Meltshop furnaces. Further, this option is associated with potential operational problems due to low primary air, creating incomplete combustion conditions. Such conditions can result in inefficient scrap melting and unacceptable increases in tap-to-tap times. Thus, this option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(4) Burners Out Of Service (BOOS) - BOOS and Load Reduction (or Deration) options - incorporate a reduction in furnace load, thereby potentially reducing NOx formation. This reduction must be balanced, however, against a longer period of NOx generation resulting from the furnace's inability to efficiently melt scrap and scrap substitutes. Furthermore, both BOOS and Load Reduction are fundamentally inconsistent with the design criterion for the furnace, which is to increase furnace loadings to achieve enhanced production. Therefore, these control options are not technically feasible for this particular application and will not be considered any further in this BACT analysis.

(5) Reduced Combustion Air Temperature - This control option inhibits thermal NOx production. However, the option is limited to equipment with combustion air preheaters which are not applicable to the Meltshop EAFs. Thus, this option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(6) Flue Gas Recirculation (FGR) - FGR option involves recycling a portion of the cooled exit flue gas back into the primary combustion zone. Typically, FGR is useful in reducing thermal NOx formation by lowering the oxygen concentration in the combustion zone. The primary limitation of FGR is that it alters the distribution of heat (resulting in cold spots) and lowers the efficiency of the furnace. Since it may be necessary to add additional burners (hence, increasing emissions of other pollutants) to the Meltshop EAFs to reduce the formation of cold spots, FGR technology to reduce Meltshop furnaces NOx emissions is not considered feasible. Since the Meltshop EAFs do not operate on burner combustion, but rely upon the electric arc and chemical energy for oxidation, neither pathway is amenable to FGR application. Thus, this option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(b) Selective Catalytic Reduction (SCR) In this process, ammonia (NH_3), usually diluted with air or steam, is injected through a grid system into the exhaust gas stream upstream of a catalyst bed. On the catalyst surface the NH_3 reacts with NOx to form molecular nitrogen and water. The basic reactions are as follows:

$$4NH_3 + 4NO + O_2 \rightarrow 4N_2 + 6H_2O \qquad \text{(i)}$$
$$8NH_3 + 6NO_2 \rightarrow 7N_2 + 12H_2O \qquad \text{(ii)}$$

The reactions take place on the surface of the catalyst. Usually, a fixed bed catalytic reactor is used for SCR systems. The function of the catalyst is to effectively lower the activation energy of the NOx decomposition reactions. Technical factors related to this technology include the catalyst reactor design, optimum operating temperature, sulfur content of the charge, catalyst deactivation due to aging, ammonia slip emissions and design of the ammonia injection system.

Three types of catalyst bed configurations have been successfully applied to commercial sources: the moving bed reactor, the parallel flow reactor and the fixed bed reactor. The fixed bed reactor is applicable to sources with little or no particulate present in the flue gas. In this reactor design, the catalyst bed is oriented perpendicular to the flue gas flow and transport of the reactants to the active catalyst sites occurs through a combination of diffusion and convection.

Depending on system design, NOx removal of 80 - 90 percent may be achievable under optimum conditions (refer, USEPA "ACT Document - NOx Emissions from Iron and Steel Mills", Sept., 1994). The reaction of NH_3 and NOx is favored by the presence of excess oxygen. Another variable affecting NOx reduction is exhaust gas temperature. The greatest NOx reduction occurs within a reaction window at catalyst bed temperatures between 600 ^{o}F – 750 ^{o}F for conventional (vanadium or titanium-based) catalyst types, and 470 ^{o}F – 510 ^{o}F for platinum-based catalysts. Performance for a given catalyst depends largely on the temperature of the exhaust gas stream being treated. A given catalyst exhibits optimum performance when the temperature of the exhaust gas stream is at the midpoint of the reaction temperature window for applications where exhaust gas oxygen concentrations are greater than 1 percent. Below the optimum temperature range, the catalyst activity is greatly reduced, potentially allowing unreacted ammonia (referred to as “ammonia slip”) to be emitted directly to the atmosphere.

The SCR system may also be subject to catalyst deactivation over time. Catalyst deactivation occurs through two primary mechanisms – physical deactivation and chemical poisoning. Physical deactivation is generally the result of either continual exposure to thermal cycling or masking of the catalyst due to entrainment of particulates or internal contaminants. Catalytic poisoning is caused by the irreversible reaction of the catalyst with a contaminant in the gas stream. Catalyst suppliers typically guarantee a 3-year catalyst lifetime for a sustainable emission limit.

In order for an SCR system to effectively reduce NOx emissions, the exhaust gas stream should have relatively stable gas flow rates, NOx concentrations, and temperature. In addition, “catalytic poisoning” may occur when certain elements such as iron, nickel, chrome, and zinc react with platinum catalysts to form compounds or alloys which are not catalytically active. These reactions can result in premature replacement of the catalyst. A Meltshop flue gas may contain a number of these catalytic poisons. In addition, any solid material in the gas stream can form deposits and result in fouling or masking of the catalytic surface. Fouling occurs when solids obstruct the cell openings within the catalyst. Masking occurs when a film forms on the surface of catalyst over time. The film prevents contact between the catalytic surface and the flue gas. Both of these conditions can result in frequent cleaning and/or replacement requirements. Due to the above constraints, SCR technology has never been applied to meltshop operations, and will be eliminated for further evaluation in this BACT analysis.

(c) Non-Selective Catalytic Reduction (NSCR) - The NSCR system is a post-combustion add-on exhaust gas treatment system. It is often referred to as a “three-way conversion” catalyst since it reduces NOx, unburned hydrocarbons (UBH), and CO simultaneously. In order to operate properly, the combustion process must be stoichiometric or near-stoichiometric which is not maintained in the Meltshop EAFs and varies widely under regular operation. Under stoichiometric conditions, in the presence of the catalyst, NOx is reduced by CO, resulting in nitrogen and carbon dioxide. Currently, NSCR systems are limited to rich-burn IC engines with fuel rich ignition system applications. Moreover, potential problems with NSCR systems include catalyst poisoning by oil additives such as phosphorus and zinc (present in galvanized scrap steel charged in the Meltshop EAFs). In view of the above limitations, the NSCR option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(d) SCONOx-Catalytic Oxidation/Absorption - This is a catalytic oxidation/absorption technology that has been applied for reductions of NOx, CO and VOC from an assortment of combustion applications that mostly include small turbines, boilers and lean-burn engines. However, this technology has never been applied to a steel mill meltshop. SCONOx employs a single catalyst for converting NOx, CO and VOC. The flue gas temperature should be preferably in the 300-700 ^{o}F range for optimal performance without deleterious effects on the catalyst assembly. The technology was developed as an alternative to traditional SCR applications which utilize ammonia, resulting in additional operational safeguards, unfavorable environmental impacts and excessive costs. In the initial oxidation cycle, the CO is oxidized to CO_2, the NO is converted to NO_2 and the VOC is oxidized to carbon dioxide and water. The NO_2 is then absorbed on the potassium carbonate coated (K_2CO_3) catalyst surface forming potassium nitrites and nitrates (KNO_2, KNO_3). Prior to saturation of the catalyst surface, the catalyst enters the regeneration cycle.

In the regeneration phase, the saturated catalyst section is isolated with the expedient of moving hinged louvers and then exposed to a dilute reducing gas (methane in natural gas) in the presence of a carrier gas (steam) in the absence of oxygen. The reductant in the regeneration gas reacts with the nitrites and nitrates to form water and elemental nitrogen. Carbon dioxide in the regeneration gas reacts with potassium nitrites and nitrates to recover the potassium carbonate, which is the absorber coating that was on the surface of the catalyst before the oxidation/absorption cycle began. Water (as steam) and elemental nitrogen are exhausted up the stack and the re-deposited K_2CO_3 allows for another absorption cycle to begin.

SCONOx technology is a variation of traditional SCR technology and for optimal performance it makes similar demands such as; stable gas flows, lack of thermal cycling, invariant pollutant concentrations and residence times on the order of 1-1.5 seconds. However, the initial attractive feature of not using ammonia has been replaced by other potential operational problems that impair the effectiveness of the technology.

In summary, an effective SCONOx application to a steel mill meltshop application, especially the EAFs has the following reservations:

(1) The technology is not readily adaptable to high-temperature applications outside the 300-700 ^{o}F range and is susceptible to thermal cycling that will be experienced in the Nucor application;

(2) Scale-up is still an issue. The technology has not been demonstrated for larger applications and the vendor's contention in this context is still being debated;

(3) Optimum SCONOx operation is predicated by stable gas flow rates, NOx concentrations and temperature. As discussed earlier, the nature of the Meltshop operations, especially the EAFs do not afford any of these conditions which will significantly impair the effective control efficiency of the SCONOx system;

(4) The catalyst is susceptible to moisture interference and the vendor indicates negation of its warranties and performance guarantees if the catalyst is exposed to any quantity of liquid water. However, during certain atmospheric conditions, the catalyst could be potentially exposed to moisture following a unit shutdown;

(5) The prospect of moving louvers that effect the isolation of the saturated catalyst readily lends itself to the possibility of thermal warp and in-duct malfunctions in general. The process is dependent on numerous hot-side dampers that must cycle every 10-15 minutes. Directional flow solutions are not yet known to have been implemented for this technology;

(6) The K2CO3 coating on the catalyst surface is an active chemical reaction and reformulation site which makes it particularly vulnerable to fouling. On some field installations, the coating has been found to be friable and tends to foul in the harsh in-duct environment;

(7) During the regeneration step, the addition of the flammable reducing gas (natural gas which contains 85% methane) into the hot flue gas generates the possibility of LEL exceedances and subsequently catastrophic failure in the event the catalyst isolation is not hermetic or there is a failure in the carrier steam flow; and

(8) There is a possibility of some additional SO2 emissions if the dry scrubber with the tandem "guard-bed" SCOSOx unit experiences a malfunction.

Thus, there are significant reservations regarding effective technical applicability of this control alternative for the Meltshop application. Moreover SCONOx technology has never been proposed nor successfully implemented for similar industry applications. In view of the above limitations, SCONOx is considered technically infeasible for the present application and will not be considered any further in this BACT analysis.

(e) Shell DeNOx System (modified SCR) - The Shell DeNOx system is a variant of traditional SCR technology which utilizes a high activity dedicated ammonia oxidation catalyst based on a combination of metal oxides. The system is comprised of a catalyst contained in a modular reactor housing where in the presence of ammonia NOx in the exhaust gas is converted to nitrogen and water. The catalyst is contained in a low-pressure drop lateral flow reactor (LFR), which makes best use of the plot space available. Due to the intrinsically high activity of the catalyst, the technology is suited for NOx conversions at lower temperatures with a typical operating range of 250-660 ^{o}F. In addition, the vendor contends that conventional SCR systems that use honeycomb catalysts generally operate in the temperature range of 610-720 ^{o}F with attendant pressure drops of between 2.8-4.0

inches WG. The Shell DeNOx technology can not only operate at a lower temperature but also have a lower pressure drop penalty of around 2 inches WG.

The low temperature operation is the only aspect of the Shell DeNOx technology that marks its variance from traditional SCR technology. From Meltshop EAF application standpoint, there are no additional differences between this technology and SCR technology.

In summary, an effective Shell DeNOx application to the Meltshop EAF application has the following reservations:

(1) The Shell DeNOx system does not suffer from similar placement limitation considerations discussed earlier for SCRs. However, even a downstream of EAF baghouse placement of the system does not render it completely safe from the prospect of particulate fouling. The catalyst will still be exposed to particulates, which can inflict a masking effect impairing the effective control efficiency of the system;

(2) Optimum Shell DeNOx operation is predicated by stable gas flow rates, NOx concentrations and temperature. The nature of the Meltshop operation do not afford any of these conditions which will significantly impair the effective control efficiency of the Shell DeNOx system;

(3) Since steel is produced from scrap, there is the possibility of the presence of catalytic poisons, which can adversely affect the Shell DeNOx catalyst resulting in impaired control efficiencies and frequent replacement of the catalyst;

(4) The catalyst is particularly susceptible to thermal fluctuations. The vendor indicated a threshold temperature of around 680 ^{o}F for catalyst degradation;

(5) The use of relatively large amounts of ammonia - a regulated toxic chemical - will have accidental release and hazardous impact implications; and

(6) As discussed earlier, even a 7 ppmv ammonia slip from a 2,042,055 acfm exhaust gas flow can result in the emission of approximately 158.5 tons/yr of ammonia which is a regulated hazardous air pollutant with well documented health impacts.

Thus, there are significant reservations regarding effective technical applicability of this control alternative for the Meltshop EAF application. Moreover Shell DeNOx has never been proposed nor successfully implemented for similar steel mill applications. Therefore, the Shell DeNOx option is considered technically infeasible and will not be considered any further in this BACT analysis.

(f) Selective Non-Catalytic Reduction (SNCR) - The three commercially available SNCR systems are Exxon's Thermal DeNOx® system, Nalco Fuel Tech's NOxOUT® system and Low Temperature Oxidation (LTO). These technologies are reviewed below for technical feasibility in controlling the Meltshop NOx emissions.

(1) Exxon's Thermal DeNOx® - Exxon's Thermal DeNOx® system is a non-catalytic process for NOx reduction. The process involves the injection of gas-phase ammonia (NH_3) into the exhaust gas stream to react with NOx. The ammonia and NOx react according to the following competing reactions:

$$2NO + 4NH_3 + 2O_2 \rightarrow 3N_2 + 6H_2O \qquad (i)$$

$4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$ (ii)

The temperature of the exhaust gas stream is the primary criterion controlling the above selective reaction. Reaction (i) dominates in the temperature window of 1,600 ^oF - 2,200 ^oF resulting in a reduction of NOx. However above 2,200 ^oF, reaction (ii) begins to dominate, resulting in enhanced NOx production. Below 1,600 ^oF, neither reaction has sufficient activity to produce or destroy NOx. Thus, the optimum temperature window for the Thermal DeNOx® process is approximately 1,600 ^oF - 1,900 ^oF. The above reaction temperature window can be shifted down to approximately 1,300 ^oF - 1,500 ^oF with the introduction of readily oxidizable hydrogen gas. In addition, the process also requires a minimum of 1.0 second residence time in the desired temperature window for any significant NOx reduction.

In order for the Thermal DeNOx® system to effectively reduce NOx emissions, the exhaust gas stream should have relatively stable gas flow rates; ensuring the required residence time and be within the prescribed temperature range. Based on discussions with Exxon and vendors knowledgeable about steel mill operations, application of Thermal DeNOx® technology to control NOx emissions from the Meltshop operations are not known. Therefore, this option is considered technically infeasible and will not be considered any further in this BACT analysis.

In summary, an effective Thermal DeNOx® application to the Meltshop application has the following reservations:

(A) The placement of the Thermal DeNOx® system in an adequate temperature regime. In order to achieve optimum operational efficiency the system should be located in a temperature region of at least 1,300 ^oF and preferably between 1,600 ^oF - 1,900 ^oF which would put it upstream of the Meltshop baghouse. Such a placement configuration would not afford the desired temperature range, which would be typically in the region of 300 ^oF - 400 ^oF with an entry temperature of 210 ^oF at the inlet to the Meltshop baghouse. The system cannot be placed further upstream for operational hazard reasons. Also any injection mechanism upstream of the baghouse will be susceptible to prompt particulate fouling;

(B) Optimum Thermal DeNOx® operation is predicated by stable gas flow rates, NOx concentrations and temperature. The nature of the Meltshop operations do not afford any of these conditions which will significantly impair the effective control efficiency of the Thermal DeNOx® system;

(C) The use of relatively large amounts of ammonia - a regulated toxic chemical - will have accidental release and hazardous impact implications; and

(D) Even a 7 ppmv ammonia slip from a 2,727,960 acfm exhaust gas flow can result in the emission of approximately 211.7 tons/yr of ammonia which is a regulated hazardous air pollutant with well documented health impacts.

Depending on system design, NOx removal of 40-70 percent may be achievable under optimum conditions (refer, USEPA “ACT Document - NOx Emissions from Iron and Steel Mills” Sept., 1994). In view of the concerns with the availability of steady gas flows and prescribed residence times, thermal cycling and the ability of the control option to load-follow varying pollutant concentrations and the fact that the source will be required to continually comply with an hourly emission rate, an effective NOx control efficiency will be hard to maintain for Meltshop application. It should be noted that if the required residence time or other optimum operation parameters are not available, unreacted ammonia will be released directly to the atmosphere.

There are significant reservations regarding effective technical applicability of this control alternative for the Meltshop application. In order for the Thermal DeNOx® system to effectively reduce NOx emissions, the exhaust gas stream should have relatively stable gas flow rates, ensuring the requisite residence time requirements and temperature. The temperature of the Meltshop exhaust gas will vary widely over the melt cycle, and will not remain in the desired temperature window during all phases of operation. Similarly, the gas flow rates will not remain stable during furnace operation, precluding the possibility of adequate residence time. Moreover, Thermal DeNOx® technology has never been proposed nor successfully implemented to control NOx emissions from steel mill Meltshops. Therefore, the Thermal DeNOx® option is considered technically infeasible and will not be considered any further in this BACT analysis.

(2) Nalco Fuel Tech's NOXOUT® - The NOxOUT® process is very similar in principle to the Thermal DeNOx® process, except that it involves the injection of a liquid urea (NH_2CONH_2) compound (as opposed to NH_3) into the high temperature combustion zone to promote NOx reduction. The chemical reaction proceeds as follows:

NH2 + NO $\rightarrow$ N2 + H_2O (i)

The reaction involves the decomposition of urea at temperatures of approximately 1,700 ^oF - 3,000 ^oF. Certain proprietary additive developments have allowed the operational temperature window to shift to approximately 1,400 ^oF - 2,000 ^oF. However, the process still has similar constraints as the Thermal DeNOx® system. The limitations are dictated by the reaction-controlling variables such as stable gas flow rates for a minimum residence time of 1.0 second in the desired temperature window to ensure proper mixing.

As with the Thermal DeNOx® system, the NOxOUT® system suffers from essentially similar limitations to effectively reduce NOx emissions from the Meltshop operations. Moreover, applications of the NOxOUT® technology to control NOx emissions from steel mill Meltshop operations are not known. Therefore, this option is considered technically infeasible and will not be considered any further in this BACT analysis.

Similar to the Thermal DeNOx® application, an effective NOxOUT® application to the Meltshop application has the following reservations:

(A) The placement of the NOxOUT® system in an adequate temperature regime. In order to achieve optimum operational efficiency the system should be located in a temperature region preferably between 1,400 ^oF - 2,000 ^oF which would put it upstream of the Meltshop baghouse. Firstly, such a placement configuration would not afford the desired temperature range, which would be typically in the region of 300 ^oF - 400 ^oF with an entry temperature of 210 ^oF at the inlet to the Meltshop baghouse. Also any injection mechanism upstream of the baghouse will be susceptible to prompt particulate fouling;

(B) Optimum NOxOUT® operation is predicated by stable gas flow rates, NOx concentrations and temperature. The nature of Meltshop operations do not afford any of these conditions which will significantly impair the effective control efficiency of the NOxOUT® system; and

(C) Although the NOxOUT® technology does not utilize ammonia directly, secondary chemical reactions under certain conditions (such as unreacted urea combining to form ammonia) can generate ammonia from the process. In fact the vendor indicates a 25 ppmv ammonia at the exhaust stack which is higher than direct ammonia applications discussed earlier. Even a 7 ppmv ammonia slip from a 2,042,055 acfm exhaust gas flow can result in the emission of approximately 158.5 tons/yr of ammonia which is a regulated hazardous air pollutant with well documented health impacts.

Depending on system design, NOx removal of 40-70 percent may be achievable under optimum conditions (refer, USEPA "ACT Document - NOx Emissions from Iron and Steel Mills" Sept., 1994). In view of the concerns with the availability of steady gas flows and prescribed residence times, thermal cycling and the ability of the control option to load-follow varying pollutant concentrations and the fact that the source will be required to continually comply with an hourly emission rate, an effective NOx control efficiency will be hard to maintain for the Meltshop application. It should be noted that if the required residence time or other optimum operation parameters are not available, secondary production ammonia would be released directly to the atmosphere. In some instances, it may even be higher than direct ammonia applications discussed earlier.

There are significant reservations regarding effective technical applicability of this control alternative for the Meltshop application. In order for the NOxOUT® system to effectively reduce NOx emissions, the exhaust gas stream should have relatively stable gas flow rates, ensuring the requisite residence time requirements and temperature. The temperature of the Metlshop exhaust gas will vary widely over the melt cycle, and will not remain in the desired temperature window during all phases of operation. Similarly, the gas flow rates will not remain stable during furnace operation, precluding the possibility of adequate residence time. Moreover, NOxOUT® technology has never been proposed nor successfully implemented to control NOx emissions from steel Meltshops. Therefore, this control option is considered technically infeasible and will not be considered any further in this BACT analysis.

(3) Low Temperature Oxidation (LTO) - LTO technology has never been utilized for any steel mill Meltshop application. The vendor has listed applications for mostly industrial boilers and cogeneration gas turbines, which have a more favorable energy balance. The technology is a variant of SNCR technology using ozone. The ozone is injected into the gas stream and the NOx in the gas stream is oxidized to nitrogen pentoxide (N_2O_5) vapor, which is absorbed in the scrubber as dilute nitric acid (HNO_3). The nitric acid is then neutralized with caustic (NaOH) in the scrubber water forming sodium nitrate ($NaNO_3$). The overall chemical reaction can be summarized as follows:

$NO_2 + NO + 2O_3 + NaOH \rightarrow HNO_3 + NaNO_3 + 2O_2$ (i)

For optimal performance, the technology requires stable gas flows, lack of thermal cycling, invariant pollutant concentrations and residence times on the order of 1 - 1.5 seconds. In addition, LTO technology requires frequent calibration of analytical instruments, which sense the NOx concentrations for proper adjustment of ozone injection. Since LTO uses ozone injection, it has a potential for ozone slip, which can vary between 5 - 10 ppmv. Also, the technology requires a cooler flue gas of less than 300 ^oF at the point of ozone injection; otherwise the reactive gas is rendered redundant. The technology also suffers from low NOx conversion rates (40% - 60%), potential for nitric acid vapor release (in the event of a scrubber malfunction) with subsequent regional haze impacts and the handling, treatment and disposal issues for the spent scrubber effluent.

In conclusion, the technology is still to be developed and evolving out of the earlier bench scale solution to effect a reliable SNCR application utilizing reactive gas-phase ozone to control NOx emissions from combustion applications. The technology is neither applicable nor proven for steel mill Meltshop applications and attendant limitations render it technically infeasible in its current manifestation. In view of the above, the LTO control option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

In order to implement an effective technical applicability for the control options discussed above, a stable temperature regime (along with non-varying gas flows and pollutant concentrations) for specific target windows is imperative which cannot be afforded by Nucor's Meltshop operation for the following reasons:

(a) As discussed earlier, the add-on control options cannot be located upstream of the baghouse in order to acquire the requisite temperature window due to particulate interference which can severely degrade the effective technical applicability of the respective control alternative;

(b) In order to avoid particulate interference, the add-on control options will have to be located downstream of the Meltshop baghouses. The exhaust gas temperatures exiting the baghouse vary according to the following:

(1) Overall seasonal variation due to changes in the temperature of the ambient air;

(2) Changes in ambient air relative humidity;

(3) Operational cycle of the Meltshop EAF - tapping, charging, bucket charge, etc.; and

(4) Type of materials being added to the furnace depending on the grade of steel being produced.

(c) The add-on control systems are not very adept at load-follow with varying process conditions resulting in significant erosion of their effective technical applicability; and

(d) The catalytic systems are susceptible to poisoning by certain interferents and heavy metals.

Step 4 – Evaluate the Most Effective Controls and Document Results

Various control alternatives were reviewed for technical feasibility in controlling NO_x emissions from the Meltshop operations. With the exception of combustion control utilizing existing natural gas-fired oxyfuel burners, the applicability of the remaining control options is considered technically infeasible. Since, only a single control option was ascertained to be technically feasible, no ranking of control alternatives has been provided.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, including Indiana air permits and sources permitted by other states agencies, identified the following with respect to Meltshop operations:

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitation**	**NOX Control Technology/NOx Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	Continued production limitation - 4,397,520 tons/yr	0.35 lb/ton ton and 175.7 lbs/hr
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003	Production limitation - 4,397,520 tons/yr	0.35 lb/ton and 175.7 lbs/hr
STEEL MILLS WITH CONTINUOUS FEED (CONSTEEL) PROCESS				
Gerdau Ameristeel - Knoxville	-	(Tennessee)	500,000 tons/yr	**0.25 lb/ton**
Nucor Steel – Darlington, SC	0820-0001-CW	1/8/1998 (South Carolina)	300 tons/hr	0.35 lb/ton 0.41 lb/ton for resulfurized steel
Nucor Steel - Hertford County	08680T09	11/23/2004 (North Carolina)	capacity unknown	0.36 lb/ton
Ameristeel – Charlotte, NC	19-99v-567	4/29/1999 (North Carolina)	569,400 tons/yr	0.51 lb/ton
New Jersey Steel	-	- (New Jersey)	capacity unknown	0.54 lb/ton
STEEL MILLS WITH BATCH PROCESSES				
[1]Osceola Steel Company	PSD 6123-10-0006	3/15/2010 (Georgia)	-	0.35 lb/ton
Nucor Steel - Memphis	0710-04PC	11/6/2000 (Tennessee)	150 tons/hr	**0.27 lb/ton (LAER)**
[1]Nucor Auburn Steel	7-0501-00044/00007	6/22/2004 (New York)	[3]110 tons/hr [1]665,000 tons/year billet production limit	**0.27 lb/ton 27.32 lb/hr**
Gerdau AmeriSteel – Duval County	031057-007-AC (PSD-FL-349)	9/25/2005 (Florida)	1,192,800 tons/yr	**0.33 lb/ton**
Nucor Steel – Tuscaloosa, Inc.	413-0033	6/6/2006 (Alabama)	300 tons/hr	0.35 lb/ton
SDI - Pittsboro	PSD 063-16628-00037	8/29/2003 (Indiana)	125 tons/hr	0.35 lb/ton*
Beta Steel	PSD 127-9642-00036	5/30/2003 (Indiana)	151 tons/hr	0.35 lb/ton
Nucor Steel –Berkeley County	-	- (South Carolina)	capacity unknown	0.35 lb/ton
SDI – Columbia City	PSD 183-10097-00030	7/9/1999 (Indiana)	300 tons/hr, 105 pounds/hr (3-hr average) and 2,628,000 tons/yr of steel	0.35 lb/ton
Nucor-Yamato Steel – Blytheville		Arkansas	450 tons/hr	0.38 lb/ton
Nucor Steel – Decatur, (formerly Trico Steel)	712-0037	7/11/2002 (Alabama)	440 tons/hr	0.40 lb/ton
IPSCO – Axis	503-8065	10/16/1998 (Alabama)	200 tons/hr	0.40 lb/ton
Nucor Steel – Jewett	PSD-1029	1/5/2003 (Texas)	240 tons/hr	0.4314 lb/ton
Nucor Steel – Hickman	1139-AOP-R5	6/9/2003 (Arkansas)	425 tons/hr	0.51 lb/ton
Charter Steel – Saukville, WI	00DCF041	6/9/2000 (Wisconsisn)	550,000 tons/yr	0.51 lb/ton

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Limitation**	**NOX Control Technology/NOx Emissions Limit**
Roanoke Electric Steel – Roankoe, VA	20131	11/6/1998 (Virginia)	100 tons/hr	0.51 lb/ton
Quanex Corporation - MacSteel Division	693-AOP-RO	2/18/1998- Arkansas)	86 tons/hr	0.51 lb/ton
SDI – Butler, IN	CP033-8091-00043	6/25/1997 (Indiana)	200 tons/hr	0.51 lb/ton
Gallatin – Ghent	-	- (Kentucky)	capacity - unknown-	0.51 lb/ton
Nucor Steel – Norfolk	35677RC3	6/22/2004 (Nebraska)	capacity unknown	0.54 lb/ton
Chaparral Steel – Petersburg	51264	4/24/1998 (Virginia)	215 tons/hr	0.70 lb/ton combined limit for EAF and LMF
IPSCO – Montpelier, IA	-	(Iowa)	capacity unknown	0.80 lb/ton*
Arkansas Steel – Newport	35-AOP-R3	1/5/2001 (Arkansas)	50 tons/hr	1.0 lb/ton
[1]V & M	P0103660	9/23/2008 (Ohio)	830,000 tons/year of steel production	53.6 lb/hr and 166 tons/yr for 2 EAFs and LMS
[1]Charter Steel	PSD No. 13-04176	2/12/2008 (Ohio)	772,391 tons/yr[1]	0.51 lb/ton, 36.29 lbs/hr and 117.25 tons/yr
Nucor Steel - Plymouth	-	Utah	capacity unknown	245 tons/year

Notes: [1] limits are reflected in the actual permit.
[3] Not limited in the actual permit

Review of the RBLC shows limits ranging from 0.27 lb/ton to 1.0 lb/ton and none of the steel mill sources as reflected in the above table have proposed or successfully implemented any add-on control devices to control NOx emissions from Meltshop operation.

The following four sources from the above table have the most stringent NOx limits:

<u>Gerdau Ameristeel - Knoxville, Tennessee</u> - This source has a LAER limit of 0.25 lb/ton. Gerdau Ameristeel uses a Consteel ® process in their steel production, and it is not comparable to the Batch melting process Nucor - Indiana utilizes in their steel sheet metal production. (See detailed description of a Consteel ® process in previous page). Therefore, this limit from Gerdau Ameristeel will not be considered in this BACT analysis.

<u>Nucor Steel - Memphis, Tennessee</u> - This source has a LAER limit of 0.27 lb/ton - This plant is not yet in production and has not yet demonstrated compliance with this LAER limit. Aside from this, fact, Nucor, Indiana is almost four times the size of Nucor, Memphis. The smaller the source, the less pollutants it emits and vice - versa, thus, a lower limit is achievable for Nucor Memphis. Therefore, Nucor, Memphis will not be considered in this BACT analysis.

<u>Nucor Auburn Steel, New York</u> - This source has a LAER limit of 0.27 lb/ton, based on a 30-day average, while the Nucor, Indiana proposed limit of 0.35 lb/ton is based on a 24-hour average. Nucor, Indiana is almost seven times larger than Nucor, Auburn. The smaller the source, the less pollutants it emits and vice - versa. Thus, a lower limit is achievable for Nucor, Auburn. In addition, it is not accurate to compare these two limits, since they do not have the same averaging time for demonstration of compliance. The longer the averaging time, the less stringent the limit is, because there is more flexibility given to the source to maximize its production during the early part of the 30-day compliance period, which may result in more emissions during this period. Therefore, Nucor Auburn will not be considered in this BACT analysis.

<u>Gerdau AmeriSteel – Duval County, Florida</u> - This source has a BACT limit of 0.33 lb/ton, while Nucor's limit is 0.35 lb/ton. Gerdau Ameristeel produces steel bars, while Nucor Steel-Indiana produces sheet metal. Both companies utilize a different process of steel melting in their steel production process, resulting in different emission characteristics. Bar mills tend not to employ an

aggressive foamy slag practice as compared to Nucor's sheet mill. With the aggressive foamy slag process more carbon units are needed to create a thicker foamy slag needed for quality issues with the sheet products. Because more carbon units are needed, more air is needed to blow the carbon into the EAF; thusly with air being 79% Nitrogen the potential for more NOx is created. Therefore, Gerdau Ameristeel will not be considered in this BACT analysis.

IDEM, OAQ BACT Determination:

Therefore, the BACT for the Meltshop will be kept the same as follows:

(a) 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.

(Section D.4) - CASTRIP - Continuous Strip Caster

The steel casting process does not result in the emissions of Nitrogen Oxide (NOx). Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, the emissions increase of NOx is zero. Therefore, the Castrip Continuous Strip Caster is not subject to BACT requirements under 326 IAC 2-2-3 for NOx.

(Section D.15) - Pickle Line No. 2

The pickling process does not result in the emissions of Nitrogen Oxide (NOx). Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, the emissions increase of NOx is zero. Therefore, the Pickle Line No. 2 is not subject to BACT requirements under 326 IAC 2-2-3 for NOx.

(Section D.29) - Tundish Preheaters, TP1 through TP5 and Tundish Nozzle Preheaters

The Preheaters are designed to achieve high preheat temperatures for the Tundish. The tundish are preheated to keep the molten steel flowing into the molds of the continuous casting machine. The Tundish Preheaters are natural gas-fired with propane as a backup fuel, each with a heat input capacity of 12 MMBtu/hr. The nozzle preheaters have a heat input capacity of 0.8 MMBtu/hr each, a total of 6.4 MMBtu/hr.

The NOx emissions from the Tundish Preheaters are formed predominantly from thermal dissociation and subsequent reaction of nitrogen and oxygen molecules in the combustion air.

The Nitrogen Oxide (NOx) emissions increase from the Tundish Preheaters based upon potential to baseline actual is 12.88 tons/year, while the four (4) additional Tundish Nozzle Preheaters have a total PTE of 1.4 tons of NOx per year.

<u>Step 1 – Identify Control Options</u>

According to information available in the RBLC, EPA's Compilation of Air Pollutant Emission Factors and the EPA's CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets, there are no reasonably available add-on control options to control NOx emissions from open flame combustion units.

IDEM, OAQ is not aware of any steel mill employing an add-on control to control combustion-related emissions from small combustion sources. However, there are control/pollution prevention systems available:

(a) Low NOx Burners (LNB), and

(b) Ultra Low NOx Burners (ULNB)

Step 2 – Eliminate Technically Infeasible Control Options

(a) Low NOx Burners (LNB) - Low NOx burners - are a specially designed set of burners that employ two-staged combustion within the burner. Primary combustion typically occurs at a lower temperature under oxygen deficient conditions and secondary combustion is completed with excess air.

(b) Ultra Low NOx Burners (ULNB) - Ultra low-NOx burners (ULNB) use sealed combustion chambers, like boilers and furnaces, where baffle design controls air staging and consequently mitigates NOx generation. ULNB also reduce NOx formation by recirculation of the exhaust gases to slow the dissipation of heat. As a result, the utilization of ULNB requires considerable reconfiguration of the combustion equipment - which is technically infeasible for the tundish preheaters.

Step 3 – Rank Remaining Control Options by Control Effectiveness and Step 4 - Evaluate Control Options

Only one technically feasible control option has been identified - Low NOx Burners.

Step 5 - Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to NOx emissions from Tundish Preheaters and Nozzle Preheaters:

Tundish Preheaters and Tundish Nozzle Preheaters			
Plant	**RBLC ID or Permit # / Date Issued**	**Heat Input Rate (MMBtu/hr)**	**NOx Control Technology/ Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Increase burners to12.0 MMBtu/hr each	Using natural gas as primary fuel and propane as backup 0.1 lb/MMBtu or 100 lb/MMCF each unit
Existing Limit - Nucor Steel - Crawfordsville	PSD 107-16823-00038 11/21/2003	6	0.1 lb/MMBtu or 100 lb/MMCF each unit
Gerdau Ameristeel Wilton	IA-0087 5/29/2007	5	0.1 lb/MMBtu
[1]SDI, Whitley, IN	PSD 183-10097-00030 (7/7/1999) and Proposed PSD 183-23905-00030	10	0.1 lb/MMBtu
[1]Steel Dynamics, Hendricks, IN	PSD 063-16628-00037 8/29/2003	7.5	0.05 lb/MMBtu but was amended in PSD 063-27213-00037 to 0.1 lb/MMBtu
Charter Steel, Inc. - Ohio	OH-0276 4/14/2003	20	1.18 lb/hr and 5.17 tons/yr
[1]Minnesota	06100067-002 5/42007	Not specified in the permit	Using natural gas as fuel

Notes: [1] limits are reflected in the actual permit.

Steel Dynamics, Hendricks, IN - This source has the most stringent NOx BACT limit of 0.05 lb/MMBtu using low-NOx burners. However, the source's most recent PSD 063-27213-00037, issued on March 12, 2010 amended this limit to 0.1 lb/MMBtu, which is equivalent to 100 lb/MMCF.

Charter Steel - This source has a limit of 1.18 pound per hour and 5.17 tons/yr NOx limit. This limit was likewise, based upon 0.1 lb/MMBtu.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel.

IDEM, OAQ BACT Determination:

Therefore, the BACT for the existing Tundish Preheaters, TP1 through TP5) and Tundish Nozzle Preheaters (TPH1 through TPH8) is the following:

(a) The Tundish Preheaters (TP1 through TP5) and Tundish Nozzle Preheaters (TPH1 through TPH8) shall combust natural gas as the primary fuel.

(b) When burning natural gas the following BACT applies:

(1) The NOx emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 100 pounds per million cubic feet of natural gas burned, 5.9 pounds per hour (total).

(2) The NOx emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 100 pounds per million cubic feet of natural gas burned, 0.63 pounds per hour (total).

(c) The Tundish Preheaters (TP1 through TP5) and 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.

(d) When burning propane the following BACT applies:

(1) The NOx emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 0.013 lb/gal of propane burned.

(2) The NOx emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 0.013 lb/gal of propane burned.

(Section D.25) - Hot Strip Mill and Tunnel Furnace System (Tunnel Furnace Nos. 1 and 2 Shuttle Furnace Nos. 1 and 2 and Snub Furnace)

In the hot mill, steel strands, billets, or slabs are heated in the Hot Mill Reheat Furnace or Tunnel Furnace System so that they become soft enough to roll. If the metal is too cold, then it will be too hard, and it will crack and stress the rolling equipment. If the metal is too hot, then cracking, surface melting and blemishes will occur when rolled. If the metal is not heated uniformly, then uneven deformation will occur, resulting in poor quality.

The NOx emissions from the furnaces are formed predominantly from thermal dissociation and subsequent reaction of nitrogen and oxygen molecules in the combustion air.

	NITROGEN OXIDE (NOx) (tons/year)		
Emissions Units	**POTENTIAL**	**BASELINE ACTUAL**	**EMISSIONS INCREASE**
Section D.25 -Tunnel Furnace No. 1 and No.2	42.9	29.10	13.8
Section D.25 -Tunnel Furnace Shuttles 1 and 2	11.16	4.5	6.7
Section D.25-Tunnel Furnace Snub	2.58	0.0	2.58
Section D.25-Hot Strip Mill	0.0	0.0	0.0

As seen in the above table, Tunnel Furnace Nos. 1 and 2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace each have NOx emissions increase. Therefore, they are subject to BACT requirements under 326 IAC 2-2-3 for this pollutant.

Step 1: Identify Potential Control Technologies, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness, Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control technologies found for tunnel furnace system based upon the search of the RBLC and other permitting agency websites.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to tunnel furnace system:

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)			
Plant	**Permit/RBLC No. Date Issued and State**	**Capacity**	**NOx Control Technology/ Emission Limitations**
Proposed limit: Nucor Steel - Crawfordsville	Proposed (Indiana)	50 MMBtu/hr	NOx - 100 lbs/MMCF of natural gas burned
Existing Tunnel Furnaces 1 and 2 Nucor Steel - Crawfordsville	11/21/2003	84 MMBtu/hr	NOx - 100 lbs/MMCF of natural gas burned
Nucor Steel - Berkeley	SC-0112 5/5/2008, South Carolina	58 MMBtu/hr	NOx- 0.1000 lb/MMBtu or 100 lb/MMCF
SteelCorr, Inc.	AR-0077 7/22/2004, Arkansas	160 MMBtu/hr	NOx- 0.1000 lb/MMBtu or 100 lb/MMCF
Bluewater Project	2062-AOP-RO 7/22/2004, Arkansas	unknown	NOx -0.1 lb/ton

The RBLC does not identify any add-on control options for tunnel, shuttles and snub furnaces. Based upon the RBLC the BACT for NOx is consistently at 0.1 lb/MMBtu or 100 lbs/MMCF.

Therefore, Nucor's BACT is comparable with these previous BACT determinations.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel.

IDEM, OAQ, BACT Determination:

Nucor's BACT for the Tunnel, Shuttle and Snub Furnaces is the following:

(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.

(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.

(c) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnaces Nos. 1 and 2 and Snub Furnace 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.

(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.

BACT FOR CARBON MONOXIDE (CO) EMISSIONS:

The proposed modification has a net emissions increase of 100 tons per year or greater. Therefore, the following new and physically modified emissions units that emit this pollutant are required to apply BACT, pursuant to 326 IAC 2-2-3:

(Section D.29) Meltshop - EAFs, LMFs, Casters, AOD Vessels and Desulfurization

CO will be emitted as a byproduct of incomplete combustion from the following sources; charged and injected carbon, scrap steel, electrodes, and “foaming slag” operating practice. Meltshop EAFs generate CO as a result of oxidation of carbon introduced into the furnace charge to refine the steel and as a result of the sublimation/oxidation of the carbon electrode.

The CO net emission increase from the Meltshop based on potential to baseline actual is 3,262.2 tons/year.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control CO emissions from the Meltshop Station:

(a) Operating Practice Modifications;
(b) Flaring of CO Emissions;

(c) CO Oxidation Catalysts;
(d) Post-Combustion Reaction Chamber;
(e) Catalytic Incineration;
(f) Oxygen Injection; and
(g) Direct Evacuation Control (DEC).

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing CO emissions from the Meltshop Station. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(a) Operating Practice Modifications - Due to customer demands on quality and to stay competitive in the marketplace, the mill incorporates an improved foamy process to produce steel. In this process, carbon and oxygen will be blown into the furnaces below the slag line, creating expanding "foam". The process will utilize charge and injection carbon to produce a competitive, marketable product. In this process, additional chemical energy is produced along with CO (due to oxidation of carbon) and that is intrinsically related to product quality. This process reduces electrical usage and extends the equipment life.

Due to marketplace demands on the type of products to be manufactured at the mill and the required product quality, Nucor does not propose any additional operating practice modifications that will alter CO emissions from the Meltshop Station. Therefore, this control option will be eliminated for further evaluation in this BACT analysis.

(b) Flaring of CO Emissions - Based upon a review of the previously listed information resources, there is no known application of flaring the Meltshop exhaust gases. Flaring of emissions for CO destruction would require raising the exhaust gas temperature to 1,300 ^{o}F at a residence time of 0.5 second. The exhaust gas stream will be approximately 2,727,960 acfm at 250 ^{o}F. Thus, based on the relatively large gas volumetric flow at a substantial temperature differential, the auxiliary fuel requirements needed to operate the flare would be overwhelmingly large. Additionally, it can be speculated as to whether the flare would actually result in a decrease of CO emissions or increase thereof from supplemental fuel combustion, which would also result in an increase of NO_x emissions. In addition, flaring of the Meltshop CO has not been done in the industry. Therefore, this control alternative is considered technically infeasible for Meltshop Station exhausts and thus, will not be considered any further in this BACT analysis.

(c) CO Oxidation Catalysts - Based upon a review of the previously listed information resources, there is no known application of CO oxidation catalysts to control CO emissions from the Meltshop Station. The optimal working temperature range for CO oxidation catalysts is approximately 850 ^{o}F - 1,100 ^{o}F with a minimum exhaust gas stream temperature of 500 ^{o}F for minimally acceptable CO control. Exhaust gases from the Meltshop EAFs will undergo rapid cooling as they are ducted from the furnace. Thus, the temperature will be far below the minimum 500 ^{o}F threshold for effective operation of CO oxidation catalysts. Additionally, the particulate loading in the exhaust gas stream is anticipated to be too high for efficient operation of a CO oxidation catalyst. Masking effects such as plugging and coating of the catalyst surface would almost certainly result in impractical maintenance requirements, and would significantly degrade the performance of the catalyst. Therefore, this control alternative is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(d) Post-Combustion Reaction Chambers - Based upon a review of the previously listed information resources, there is no known successful application of duct burners or thermal incinerators to control CO emissions from the Meltshop operations. It should be noted that this type of technology has recently been proposed for Meltshops in the United States; however, the feasibility of these units to effectively reduce CO emissions, without resulting in severe operational problems, is unknown. Further, such units are expected to consume large quantities of natural gas and oxygen; resulting in excessive annual operating costs.

The principle of destruction within post combustion chambers is to raise the Meltshop exhaust gases to a sufficiently high temperature and for a minimum amount of time to facilitate oxidation. The combustion chamber configuration must provide effective mixing within the chamber with an acceptable residence time. Recuperative heat exchangers can be used with these systems to recover a portion of the exiting exhaust gas heat and reduce the auxiliary fuel consumption.

The amount of CO which could be oxidized with post combustion systems is uncertain, and precise performance guarantees are expected to be difficult to obtain from equipment manufacturers because of the lack of operating experience. In addition, there is the potential for additional emissions of NO_x from auxiliary fuel combustion. Further, due to the heat and particulate loading, the burners would have a short life expectancy, and may sustain severe maintenance and reliability problems. Additionally, a single or multiple duct burner system would not be able to heat the relatively cool gases from the Meltshop during cold cycling.

Potentially, there are two locations where post combustion chambers can be installed, i.e., upstream or downstream of the Meltshop baghouse. Locating upstream of the baghouse would take advantage of slightly elevated temperatures in the exhaust gas stream. However, at this location, the post combustion chamber would be subject to high particulate loading. The units would be expected to foul frequently from the particulate accumulation, and the burners would have severe maintenance and reliability problems. Thus, the installation of the post combustion chamber upstream of the baghouse is considered technically infeasible. Alternatively, the post combustion chamber could be installed downstream of the Meltshop baghouse. However, even at this location, fouling due to particulate matter can occur and more importantly, even cooler exhaust temperatures would be encountered. These cooler temperatures would greatly increase the auxiliary fuel requirements. The associated combustion of additional auxiliary fuel will result in an unacceptable increase in operating costs. Further, the combustion of additional fuel will result in increases in emissions to the atmosphere.

The only known proposed use of post combustion for CO was the initial minor source permit application (early 1990's) for Gallatin Steel, located in Ghent, Kentucky. This was proposed to control CO emissions less than 100 tons per year. This control application was unsuccessful and the standard Direct Evacuation Control (DEC) was subsequently proposed and accepted as BACT (2.0 lbs/ton) for the PSD permit.

Based upon the above discussions, the use of a post combustion chamber is considered technically infeasible for the Meltshop Station and will not be considered any further in this BACT analysis.

(e) Catalytic Incineration - Based upon a review of the previously listed information resources, there is no known application of catalytic incineration to control CO emissions from Meltshops. Catalytic incinerators use a bed of catalyst that facilitates the overall combustion of combustible gases. The catalyst increases the reaction rate and allows the conversion of CO to CO_2 at lower temperatures than a thermal incinerator. The catalyst is typically a porous noble metal material which is supported in individual compartments within the unit. An auxiliary fuel-fired burner ahead of the bed heats the entering exhaust gases to 500 ^oF – 600 ^oF to maintain proper bed temperature. Recuperative heat exchangers are used to recover the exiting exhaust gas heat and reduce the auxiliary fuel consumption. Secondary energy recovery is typically 70 percent.

Catalytic incineration systems are limited in application due to potential poisoning, deactivation, and/or blinding of the catalyst. Lead, arsenic, vanadium, and phosphorus are generally considered poisons to catalysts and deactivate the available reaction sites on the catalyst surface. Particulate can also build up on the catalyst, effectively blocking the porous catalyst matrix and rendering the catalyst inactive. In cases of significant levels of poisoning compounds and particulate loading, catalyst replacement costs are significant.

As in the thermal incineration discussion, potentially, there are two locations where the incinerator can be installed, i.e., upstream or downstream of the Meltshop baghouse. For the same reasons discussed earlier (e.g., fouling due to particulate matter), the upstream location is considered technically infeasible. Alternatively, the incinerator can be installed downstream of the Meltshop baghouse. However, even at this location, fouling due to particulate matter can occur, and further, the exhaust will be at a lower temperature. These cooler temperatures would greatly increase the auxiliary fuel requirements. The associated combustion of additional auxiliary fuel will result in an unacceptable increase in operating costs. Further, the combustion of additional fuel will result in increases in emissions to the atmosphere.

Due to the lack of application of catalytic incineration in the steel industry and potentially adverse technology applicability issues, this control alternative is considered technically infeasible and will not be considered any further in this BACT analysis.

(f) Oxygen Injection - Based upon a review of the previously-listed information resources, there is no known application of oxygen injection for controlling CO emissions from Meltshops. A theoretical means of reducing CO would be oxygen injection at the entrance of the ductwork to increase oxidation of the available CO to CO_2. The increase in CO oxidation which could be achieved, however, is unknown. This approach would be purely experimental and is a procedure that is currently not conducted in Meltshop operations in steel mills in the United States. Oxygen injection directly into the furnace is an experimental operating practice in Europe used to increase the heat input to the melt, but the practice has not been demonstrated to reduce CO emissions.

Typically, the DSE system will draw air into the duct, creating an oxygen-rich mixture of Meltshop exhaust gases where CO is oxidized. The addition of oxygen is expected to provide little if any additional conversion of CO. The capability is also limited due to the cyclic operating schedule (i.e., hot-cold cycling). Exhaust gas temperatures will fluctuate during each melt and at times, drop below 1,350 ^oF. It is estimated that this will occur for 5 to 10 minutes during each melt. The minimum temperature encountered is estimated at approximately 350 ^oF. Thus, during these periods, the thermal destruction efficiency is expected to decrease, resulting in elevated CO emissions. Consequently, this control alternative is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(g) Direct Evacuation Control (DEC) In the steel industry, there are generally two principal capture systems employed during Meltshop operation to control the process emissions generated during melting and refining. One is the DEC system and the other is the side draft hood system. Side draft hoods require higher air flow rates than a DEC system and are not widely used. Based upon a review of the previously listed information resources, DEC system continues to be the primary control technology for controlling CO emissions from the Meltshop. Nucor's Meltshop is equipped with a DEC system for mitigation of CO emissions.

A DEC system is connected to the meltshop canopy collector system which further directs exhaust gases to the Meltshop baghouse. During melting and refining, a slight negative pressure is maintained within the furnace to withdraw exhaust gases through the DEC duct. The DEC system allows excellent process emissions capture and combustion of CO, and requires the lowest air volume of other Meltshop capture devices.

Without manifestation of a DEC system on the Meltshop, a greater quantity of CO would exit the furnace. Also, during operation, the furnace shell would develop a negative pressure, thus preventing an indraft of air/oxygen at the doors which facilitates CO oxidation in the furnace shell. The lack of negative pressure would also prevent the indraft of air/oxygen at the gap between the fourth-hole elbow and duct, thereby preventing additional CO oxidation in the water-cooled evacuation ductwork.

Step 4 – Evaluate the Most Effective Controls and Document Results

Various control alternatives were reviewed for technical feasibility in controlling CO emissions from the Meltshop Station and none of the control options were determined to be technically feasible, except for the DEC, which is already being used by the Nucor's Meltshop operation.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, including Indiana air permits and sources permitted by other states agencies, identified the following with respect to the Meltshops:

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Capacity**	**CO Control Technology/CO Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	502 tons/hr and [1]4,397,520 tons/yr	2.0 lb/ton and 1,004 lb/hr (3-hr average)
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003	502 tons/hr and 4,397,520 tons/yr	2.0 lb/ton and 1,004 lb/hr (3-hr average)
STEEL MILLS WITH CONTINUOUS FEED (CONSTEEL) PROCESS				
Nucor Steel – Darlington, SC	0820-0001-CW	1/8/1998 (South Carolina)	300 tons/hr	2.76 lb/ton/3.13[b] lb/ton
Nucor Steel - Hertford County	08680T09	11/23/2004 (North Carolina)	capacity unknown	2.3 lb/ton
Ameristeel – Charlotte, NC	19-99v-567	4/29/1999 (North Carolina)	569,400 tons/yr	6.0 lb/ton
New Jersey Steel- Sayreville	-	- (New Jersey)	capacity unknown	5.8 lb/ton
STEEL MILLS WITH BATCH PROCESS				
[1]IPSCO – Montpelier, IA	94-A-548-S3	03/13/1996 (Iowa)	164 tons/hr	[1]**1.93 lb/ton and 1,386.4 tons/yr***
Gerdau Ameristeel - Knoxville	-	(Tennessee)	500,000 tons/yr	2.0 lb/ton
Nucor Steel - Memphis	0710-04PC	11/6/2000 (Tennessee)	150 tons/hr	2.0 lb/ton
Nucor Auburn Steel	7-0501-00044/00007	6/22/2004 (New York)	110 tons/hr	2.0 lb/ton
Gerdau AmeriSteel – Duval County	031057-007-AC (PSD-FL-349)	9/25/2005 (Florida)	1,192,800 tons/yr	2.0 lb/ton
Nucor Steel – Tuscaloosa, Inc.	413-0033	6/6/2006 (Alabama)	300 tons/hr	2.0 lb/ton
SDI - Pittsboro	PSD 063-16628-00037	8/29/2003 (Indiana)	125 tons/hr	2.0 lb/ton*
Nucor Steel –Berkeley County	-	- (South Carolina)	capacity unknown	2.0 lb/ton
SDI – Columbia City	PSD 183-10097-00030	7/9/1999 (Indiana)	200 tons/hr	2.0 lb/ton
Nucor-Yamato Steel – Blytheville		Arkansas	450 tons/hr	2.0 lb/ton

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Production Capacity**	**CO Control Technology/CO Emissions Limit**
IPSCO – Axis	503-8065	10/16/1998 (Alabama)	200 tons/hr	2.0 lb/ton
Nucor Steel – Hickman	1139-AOP-R5	6/9/2003 (Arkansas)	capacity – 425 tons/hr	2.0 lb/ton
Nucor Steel – Decatur, (formerly Trico Steel)	712-0037	7/11/2002 (Alabama)	440 tons/hr	2.0 lb/ton
SDI – Butler, IN	CP033-8091-00043	6/25/1997 (Indiana)	200 tons/hr	2.0 lb/ton
Gallatin – Ghent	-	- (Kentucky)	capacity - unknown-	2.0 lb/ton
Charter Steel – Saukville, WI	00DCF041	6/9/2000 (Wisconsin)	550,000 tons/yr	3.83 lb/ton
Chaparral Steel – Petersburg	51264	4/24/1998 (Virginia)	215 tons/hr	4.0 lb/ton combined limit for EAF and LMF
Nucor Steel – Norfolk	35677RC3	6/22/2004 (Nebraska)	EAF - (capacity unknown) - NOx emissions limit of 0.54 lb/ton	4.74 lb/ton
Quanex Corporation - MacSteel Division	693-AOP-RO	2/18/1998- Arkansas)	86 tons/hr	5.0 lb/ton
Nucor Steel – Jewett	PSD-1029	1/5/2003 (Texas)	240 tons/hr	5.0214 lb/ton
Beta Steel	PSD 127-9642-00036	5/30/2003 (Indiana)	151 tons/hr	5.4 lb/ton
Roanoke Electric Steel – Roanoke, VA	20131	11/6/1998 (Virginia)	100 tons/hr	6.0 lb/ton
Arkansas Steel – Newport	35-AOP-R3	1/5/2001 (Arkansas)	50 tons/hr	6.0 lb/ton
Nucor Steel - Plymouth	-	Utah	capacity unknown	1200 lbs/hr

Note: [1] limits are reflected in the actual permit.

Nucor – Indiana proposes the continued CO limit of 2.0 lb/ton for the Meltshop which is comparable with most of the sources in the above table, except for IPSCO which seems to have the lowest CO limit.

Based upon IPSCO, Iowa's actual TV Operating Permit No. 07-TV-004, the CO emissions limit of 1.93 lbs/ton and 1,386.4 tons per year was based on only one (1) EAF. Another LMF was limited to CO emissions of 1.93 lb/hr and 1,690.7 tons/year. Therefore, the total CO limit is 3.86 lb/ton for these two (2) emission units. Nucor, Indiana's CO limit of 2 lb/ton is the most stringent since it is for the entire Meltshop Station which includes two (2) EAFs, three (3) LMFs, AOD vessels, desulfurization station and two (2) continuous casters.

No other mills have proposed or successfully implemented any controls besides DEC combustion. All the other control options have been shown to be technically infeasible.

IDEM, OAQ BACT Determination:

Therefore, CO BACT for the Meltshop Station will stay the same as follows:

(a) 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

(Section D.4) - CASTRIP - Continuous Strip Caster

The steel casting process does not result in the emissions of Carbon Monoxide (CO). Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, the emissions increase of CO is zero. Therefore, the Castrip Continuous Strip Caster is not subject to BACT requirements under 326 IAC 2-2-3 for CO.

(Section D.15) - Pickle Line No. 2

The pickling process does not result in the emissions of Carbon Monoxide (CO). Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, the emissions increase of CO is zero. Therefore, the Pickle Line No. 2 is not subject to BACT requirements under 326 IAC 2-2-3 for CO.

(Section D.29) - Tundish Preheaters, TP1 through TP5 and Tundish Nozzle Preheaters

The Preheaters are designed to achieve high preheat temperatures for the Tundish. The tundish are preheated to keep the molten steel flowing into the molds of the continuous casting machine. The Tundish Preheaters are natural gas-fired with propane as a backup fuel, each with a heat input capacity of 12 MMBtu/hr.

The Carbon Monoxide (CO) emissions increase from the Tundish Preheaters based upon potential to baseline actual is 10.82 tons/year, while the four (4) additional Tundish Nozzle Preheaters have a total PTE of 1.2 tons of CO per year.

Step 1: Identify Potential Control Technologies, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness, Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control technologies found for CO emissions control from tundish preheaters and tundish nozzle preheaters based upon the search of the RBLC and other permitting agency websites.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to tundish preheaters:

Tundish Preheaters and Tundish Nozzle Preheaters			
Plant	**RBLC ID or Permit # / Date Issued**	**Heat Input Rate (MMBtu/hr)**	**CO Control Technology/ Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038 (Indiana)	12 each	84 lb/MMCF or 0.084 lb/MMBtu and 4.9 lb/hr total
Existing Limit - Nucor Steel - Crawfordsville	PSD 107-16823-00038 11/21/2003 (Indiana)	6 each	84 lb/MMCF or.084 lb/MMBtu and 2.5 lb/hr total
SDI, Whitley	PSD 183-18426-00030 (11/21/2005) (Indiana)	10	0.084 lb/MMBtu
	Proposed PSD 183-23905-00030	10	0.084 lb/MMBtu

Tundish Preheaters and Tundish Nozzle Preheaters			
Plant	**RBLC ID or Permit # / Date Issued**	**Heat Input Rate (MMBtu/hr)**	**CO Control Technology/ Emissions Limit**
Steel Dynamics Hendricks	PSD 063-16628-00037 8/29/2003 (Indiana)	7.5	0.084 lb/MMBtu
Charter Steel, Inc.	OH-0276 (2/12/2008) (Ohio)	12	0.99 lb/hr

The RBLC search, does not identify any add-on control options from tundish preheaters. The CO BACT from the RBLC database is consistently at 0.084 lb/MMBtu. Although Charter Steel's BACT is at 0.99 pound per hour, this limit was derived using 84 lb/MMCF or 0.084 lb/MMBtu (12 MMBtu/hr x 1 MMCF/1020 MMBtu x 84 lb/MMCF - 0.99 lb/hr)

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel. Propane emissions calculated at 8760 hours per year of usage will result in less CO emissions than when combusting natural gas.

IDEM, OAQ BACT Determination:

Nucor's Carbon Monoxide BACT for the Tundish Preheaters is the following:

(a) The CO missions 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).

(b) The Tundish Preheaters (TP1 through TP5) and Tundish Nozzle Preheaters (TPH1 through TPH8) hall only burn natural gas and propane as a back-up fuel.

(c) The 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).

(Section D.25) - Hot Strip Mill and Tunnel Furnace System (Tunnel Furnace Nos. 1 and 2 Shuttle Furnace Nos. 1 and 2 and Snub Furnace)

In the hot mill, steel strands, billets, or slabs are heated in the Hot Mill Reheat Furnace or Tunnel Furnace System so that they become soft enough to roll. If the metal is too cold, then it will be too hard, and it will crack and stress the rolling equipment. If the metal is too hot, then cracking, surface melting and blemishes will occur when rolled. If the metal is not heated uniformly, then uneven deformation will occur, resulting in poor quality.

The rate of CO emissions from the furnaces depends on the efficiency of natural gas combustion. Improperly tuned units decrease combustion efficiency resulting in increased CO emissions.

	CARBON MONOXIDE (CO) (tons/year)		
Emissions Units	**POTENTIAL**	**BASELINE ACTUAL**	**EMISSIONS INCREASE**
Section D.25 -Tunnel Furnace No. 1 and No.2	36.1	24.5	11.6
Section D.25 -Tunnel Furnace Shuttles 1 and 2	9.38	3.75	5.63
Section D.25-Tunnel Furnace Snub	2.16	0.0	2.16
Section D.25-Hot Strip Mill	0.0	0.0	0.0

As seen in the above table, Tunnel Furnace Nos. 1 and 2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace each have a CO emissions increase. Therefore, they are subject to BACT requirements under 326 IAC 2-2-3 for this pollutant.

Step 1: Identify Potential Control Technologies, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness, Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control technologies to control CO emissions from tunnel furnace system based upon the search of the RBLC and other permitting agency websites.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to tunnel furnace system:

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)			
Plant	**Permit/RBLC No. Date Issued and State**	**Capacity**	**CO Control Technology/ Emission Limitations**
Proposed limit: Nucor Steel - Crawfordsville	Proposed (Indiana)	50 MMBtu/hr	CO - 84 lb/MMCF
Existing Tunnel Furnaces 1 and 2 Nucor Steel - Crawfordsville	11/21/2003	84 MMBtu/hr	Not subject to BACT for this pollutant
[1]Minnesota Steel	MN-0070 9/7/2007 (Minnesota)	165 MMBtu/hr	CO - 0.0800 lb/MMBtu
Nucor Steel - Berkeley	SC-0112 5/5/2008, South Carolina	58 MMBtu/hr	CO - 0.0840 lb/MMBtu or 84 lb/MMCF
SteelCorr, Inc. Bluewater Project	AR-0077 7/22/2004, Arkansas	160 MMBtu/hr	CO - 0.037 lb/MMBtu
New Steel - Ohio	OH-0315 5/6/2008	187 MMBtu/hr	CO - 15.71 lb/hr using 84 lb/MMBtu

Note: [1] Limits are reflected in the actual permit.

The RBLC does not identify any add-on control options to control CO emissions from tunnel, shuttles and snub furnaces. Based upon the RBLC the CO BACT emissions limit range from 0.037 lb/MMBtu to 84 lb/MMCF or 0.084 lb/MMBtu. All of the sources in the above table use natural gas for fuel with the corresponding emission factor of 84 lb/MMCF as the CO limit. However, in converting this lb/MMCF CO limit into lb/MMBtu each company used different heating value (Note: The average gross heating value of natural gas is approximately 1,020 million British thermal units per million cubic foot (MMBtu/MMCF), varying from 950 to 1,050 MMBtu/MMCF), which resulted in CO BACT limit ranging from 0.037 lb/MMBtu to 0.084 lb/MMBtu.

SteelCorr, Inc. - This source has the lowest CO BACT limit at 0.037 lb/MMBtu. However, based on Arkansas Department of Environmental Management information and e-mail to IDEM, SteelCorr, Inc, which was a greenfield source has never been built and therefore, it will not be considered in this BACT analysis.

Even if SteelCorr, Inc. would be considered, a more stringent limit is not obtainable without the use of an add-on control. The incremental cost would be intuitively cost prohibitive in trying to achieve 0.037 lb/MMBtu from Nucor's BACT CO limit of 0.084 lb/MMBtu. SteelCorr CO emission is 25 tons/yr while Nucor is 8 tons/year.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel. Propane emissions calculated at 8760 hours per year of usage will result in less CO emissions than when combusting natural gas.

IDEM, OAQ, BACT Determination:

Nucor's BACT for the Tunnel, Shuttle and Snub Furnaces is the following:

(a) The CO emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 84 pounds per million cubic feet (lb/MMCF) of natural gas burned.

(b) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall combust natural gas as the primary fuel and propane as a backup fuel.

BACT FOR VOLATILE ORGANIC COMPOUNDS (VOC)

The proposed modification has a net increase of greater than the PSD significant level of 40 tons of VOC per year. Therefore, all the following new and physically modified emission units that emit VOC are required to apply Best Available Control Technology (BACT), pursuant to 326 IAC 2-2-3:

Meltshop - EAFs, LMFs, Casters, AOD Vessels and Desulfurization

VOC emissions from the Meltshop will be intermittent and limited to the brief period during the Meltshop EAFs charging when organic compounds such as oil or paint present in the scrap are volatilized. The VOC emission increase from the Meltshop based on maximum potential minus baseline actual emission is estimated at 177.89 tons per year.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control VOC emissions from the Meltshop Operation:

(a) Catalytic Oxidation;

(b) Thermal Oxidation

(b) Degreasing of scrap metal prior to charging in the EAFs; and

(c) Scrap management program.

<u>Step 2 – Eliminate Technically Infeasible Control Options</u>

The test for technical feasibility of any control option is whether it is both available and applicable to reducing VOC emissions from the Meltshop. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(a) Catalytic Oxidation - In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

Based upon a review of the previously listed information resources, there is no known application of CO oxidation catalysts to control VOC emissions from the Meltsop. The optimal working temperature range for VOC oxidation catalysts is approximately 850 ^{o}F - 1,100 ^{o}F with a minimum exhaust gas stream temperature of 500 ^{o}F for minimally acceptable VOC control. Exhaust gases from the Meltshop, specifically from the EAF will undergo rapid cooling as they are ducted from the furnace. Thus, the temperature will be far below the minimum 500 ^{o}F threshold for effective operation of the oxidation catalyst system. Additionally, the particulate loading in the exhaust gas stream is anticipated to be too high for efficient operation of a VOC oxidation catalyst. Masking effects such as plugging and coating of the catalyst surface would almost certainly result in impractical maintenance requirements, and would significantly degrade the performance of the catalyst. Consequently, this control alternative is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(b) Thermal Oxidation - An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer. Potentially, there are two locations where the incinerator can be installed, i.e., upstream or downstream of the Meltshop baghouse. Locating upstream of the baghouse would take advantage of slightly elevated temperatures in the exhaust gas stream. However, at this location, the post combustion chamber would be subject to high particulate loading. Thus, installation of the VOC control at this location would make it technically infeasible. Alternatively, the post combustion chamber can be installed downstream of the Meltshop baghouse. However, even at this location, fouling due to particulate matter will occur and more importantly, cooler temperatures would be encountered. These cooler temperatures would greatly increase the auxiliary fuel usage requirements, which would result in higher collateral emissions from the combustion of fuel. In addition there are no known applications of this control option in the steel mill industry. This control option is not technically feasible and will be eliminated from further consideration in this BACT analysis,

(c) Degreasing - degreasing of scrap metal prior to charging in the Meltshop EAF is impractical. The amount of pollution generated by degreasing scrap would be greater than the amount of pollution generated by melting the scrap. There would be thousands of gallons required to degrease the large amount of scrap used annually in the Meltshop EAFs. Thus, this control option is considered technically infeasible and will be precluded from further consideration in this BACT analysis.

(d) Scrap Management - The mill will utilize a scrap management program to eliminate the purchase of scrap steel that is heavily oiled. A broker or a Nucor representative will be responsible for inspecting shipments of scrap received. The foreman visually inspects the shipments and determines the category of the scrap. Typically, lathe turnings require the greatest amount of attention due to the higher probability of encountering oil or grease.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

All control alternatives identified in Step 2 were eliminated as not technical feasibility in controlling VOC emissions from the Meltshop, with the exception of a scrap management to meet the BACT requirements for VOC emissions.

Step 4 – Evaluate the Most Effective Controls and Document Results

Scrap management will be utilized along with a proposed limit of VOC emissions were the only technically feasible control option for controlling VOC emissions from the Meltshop operation.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to the Meltshop operation:

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Meltshop Production Capacity**	**VOC Control Technology/VOC Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	502 tons/hr and [1]4,397,520 tons/yr	0.09 lb/ton and 45.18 lbs/hr (3-hr block average)
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003	502 tons/hr and 4,397,520 tons/yr	0.09 lb/ton and 45.18 lbs/hr (3-hr block average)
STEEL MILLS WITH CONTINUOUS FEED (CONSTEEL) PROCESS				
Nucor Steel - Hertford County	08680T09	11/23/2004 (North Carolina)	capacity unknown	0.13 lb/ton
Nucor Steel – Darlington, SC	0820-0001-CW	1/8/1998 (South Carolina)	300 tons/hr	0.35 lb/ton
New Jersey Steel - Sayreville	-	- (New Jersey)	capacity unknown	0.46 lb/ton
Ameristeel – Charlotte, NC	19-99v-567	4/29/1999 (North Carolina)	569,400 tons/yr	0.50 lb/ton
STEEL MILLS WITH BATCH PROCESS				
Nucor Steel – Hickman	1139-AOP-R5	6/9/2003 (Arkansas)	capacity – 425 tons/hr	0.088 lb/ton based on monthly
Nucor Steel - Memphis	0710-04PC	11/6/2000 (Tennessee)	150 tons/hr	0.09 lb/ton (LAER) + 0.005 lb/ton for 1 EAF Total limit of 0.095

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**Meltshop Production Capacity**	**VOC Control Technology/VOC Emissions Limit**
				lb/ton
SDI – Columbia City	PSD 183-10097-00030	7/9/1999 (Indiana)	200 tons/hr	0.09 lb/ton (3-hr block average)
Gerdau AmeriSteel – Duval County	031057-007-AC (PSD-FL-349)	9/25/2005 (Florida)	1,192,800 tons/yr	0.13 lb/ton
Nucor Steel – Tuscaloosa, Inc.	413-0033	6/6/2006 (Alabama)	300 tons/hr	0.13 lb/ton
SDI - Pittsboro	PSD 063-16628-00037	8/29/2003 (Indiana)	125 tons/hr	0.13 lb/ton*
Beta Steel	PSD 127-9642-00036	5/30/2003 (Indiana)	151 tons/hr	0.13 lb/ton
Nucor Steel –Berkeley County	-	- (South Carolina)	capacity unknown	0.13 lb/ton
Nucor-Yamato Steel – Blytheville		Arkansas	450 tons/hr	0.13 lb/ton
SDI – Butler, IN	CP033-8091-00043	6/25/1997 (Indiana)	200 tons/hr	0.13 lb/ton
Gallatin – Ghent	-	- (Kentucky)	capacity - unknown-	0.13 lb/ton
Nucor Auburn Steel	7-0501-00044/00007	6/22/2004 (New York)	110 tons/hr	0.14 lb/ton
Nucor Steel - Norfolk	35677RC3	6/22/2004 (Nebraska)	EAF - (capacity unknown) - NOx emissions limit of 0.54 lb/ton	0.17 lb/ton*
IPSCO – Montpelier, IA	94-A-548-S1	03/13-1996 & 2002 (Iowa)	capacity unknown	0.18 lb/ton
Nucor Steel – Decatur, (formerly Trico Steel)	712-0037	7/11/2002 (Alabama)	440 tons/hr	0.20 lb/ton
Nucor Steel – Jewett	PSD-1029	1/5/2003 (Texas)	240 tons/hr	0.2906 lb/ton
Gerdau Ameristeel - Knoxville	-	(Tennessee)	500,000 tons/yr	0.30 lb/ton
Roanoke Electric Steel – Roanoke, VA	20131	11/6/1998 (Virginia)	100 tons/hr	030 lb/ton
IPSCO – Axis	503-8065	10/16/1998 (Alabama)	200 tons/hr	0.35 lb/ton
Chaparral Steel – Petersburg	51264	4/24/1998 (Virginia)	215 tons/hr	0.35 lb/ton
Arkansas Steel – Newport	35-AOP-R3	1/5/2001 (Arkansas)	50 tons/hr	0.35 lb/ton
Nucor Steel - Plymouth	-	(Utah)	capacity unknown	22.2 lb/hr proposed
Charter Steel – Saukville, WI	00DCF041	6/9/2000 (Wisconsin)	550,000 tons/yr	no limit

Nucor Steel - Hickman, Arkansas - This source has a combined BACT limit of 0.088 lb/ton for two (2) EAFS and two (2) LMFs and a third LMF has a limit of 0.005 lb/ton, which is a total VOC limit of 0.093 lb/ton. Nucor Steel Hickman demonstrates compliance with the 0.093 lb/ton through stack testing done every six months. Nucor reports each month the total number of tons of steel tapped per month which is multiplied by the emission factor determined during the stack test to establish the amount of VOC emitted during that month.

Nucor is proposing to keep the same VOC BACT limit of 0.09 lb/ton based on a 3-hour block average, for the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and three (3) LMF .

None of the steel mill sources in the above table have proposed or successfully implemented any add on control devices to control VOC emissions from the Meltshop operation.

IDEM, OAQ BACT Determination:

Therefore, the following is the VOC BACT for the Meltshop:

(a) 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.

(Section D.4) - CASTRIP - Continuous Strip Caster

The steel casting process does not result in the emissions of Volatile Organic Compounds (VOC). Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, net emissions increase from this pollutant is zero. Therefore, the Castrip Continuous Strip Caster is not subject to BACT requirements under 326 IAC 2-2-3 for VOC.

(Section D.15) - Pickle Line No. 2

The pickling process does not result in the emissions of VOC. Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, net emissions increase from this pollutant is zero. Therefore, the Pickle Line No. 2 is not subject to BACT requirements under 326 IAC 2-2-3 for VOC.

(Section D.29) - Tundish Preheaters, TP1 through TP5

The Preheaters are designed to achieve high preheat temperatures for the Tundish. The tundish are preheated to keep the molten steel flowing into the molds of the continuous casting machine. The Tundish Preheaters are natural gas-fired with propane as a backup fuel, each with a heat input capacity of 12 MMBtu/hr.

The rate of VOC emissions from the Tundish Preheaters depends on the combustion efficiency. VOC species in the natural gas fuel contribute to VOC emissions if they are not completely combusted.

The VOC emissions increase from the Tundish Preheaters based upon potential to baseline actual is 0.71 ton/year, while the four (4) additional Tundish Nozzle Preheaters have a total PTE of 0.1 ton of VOC per year.

Step 1 – Identify Control Options, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness and Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control technologies to control VOC emissions from tundish preheaters and tundish nozzle preheaters based upon the search of the RBLC and other permitting agency websites.

Step 5 - Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to VOC emissions from tundish preheaters preheaters and tundish nozzle preheaters.

Tundish Preheaters and Tundish Nozzle Preheaters			
Plant	**RBLC ID or Permit # / Date Issued**	**Heat Input Rate (MMBtu/hr)**	**VOC Control Technology/ Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038 (Indiana)	0.8 to 10	5.5 lb/MMCF or 0.0055 lb/MMBtu
Existing Limit - Nucor Steel - Crawfordsville	PSD 107-16823-00038 11/21/2003 (Indiana)	0.8 to 10	5.5 lb/MMCF or 0.0055 lb/MMBtu
SDI, Whitley	PSD 183-18426-00030 (11/21/2005) (Indiana)	10	0.0054 lb/MMBtu
	Proposed PSD 183-23905-00030	10	0.0055 lb/MMBtu
Steel Dynamics Hendricks	PSD 063-16628-00037 8/29/2003 (Indiana)	7.5	0.0055 lb/MMBtu
Charter Steel, Inc.	OH-0276 (4/14/2003)	20	0.0055 lb/MMBtu
	2/12/2008 (Ohio)	12	0.06 lb/hr

The RBLC search, does not identify any add-on control options to control VOC emissions from tundish preheaters. All of the sources in the above table use natural gas for fuel with the corresponding emission factor of 5.5 pound per million cubic feet (lb/MMCF) as the VOC emission limit. However, in converting this lb/MMCF VOC limit into lb/MMBtu each company used different heating value (Note: The average gross heating value of natural gas is approximately 1,020 million British thermal units per million cubic foot (MMBtu/MMCF), varying from 950 to 1,050 MMBtu/MMCF), which resulted in VOC BACT limits ranging from 0.0054 lb/MMBtu to 0.0055 lb/MMBtu. Carter Steel BACT for a 12 MMBtu/hr preheater is 0.06 lb/hr, this limit was derived using 0.0055 lb/MMBtu or 5.5 lb/MMCF (12 MMBtu/hr x 1 MMCF/1020 MMBtu x 5.5 lb/MMCF - 0.06 lb/hr).

<u>Charter Steel, Inc.</u> - This source VOC limit of 0.06 pound per hour for a 12 MMBtu/hr heater was likewise, based upon 5.5 lb/MMCF.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel.

IDEM, OAQ BACT Determination:

Nucor's VOC BACT for the Tundish Preheaters, TP-1 through TP-5 and Tundish Nozzle Preheaters (TPH1 through TPH8) is the following:

(a) The Tundish Preheaters (TP1 through TP5) and Tundish Nozzle Preheaters (TPH1 through TPH8) shall combust natural gas as the primary fuel.

(b) When burning natural gas the following BACT applies:

(1) The VOC emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.32 pounds per hour (total).

(2) The VOC emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 5.5 pounds per million cubic feet of natural gas burned, 0.035 pounds per hour (total).

(c) The Tundish Preheaters (TP1 through TP5) and 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.

(d) When burning propane the following BACT applies:

(1) The VOC emissions from the Tundish Preheaters (TP1 through TP5) shall be limited to 0.001 lb/gal of propane burned.

(2) The VOC emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 0.001 lb/gallon of propane burned.

(Section D.25) - Hot Strip Mill and Tunnel Furnace System (Tunnel Furnace Nos. 1 and 2 Shuttle Furnace Nos. 1 and 2 and Snub Furnace)

In the hot mill, steel strands, billets, or slabs are heated in the Hot Mill Reheat Furnace or Tunnel Furnace System so that they become soft enough to roll. If the metal is too cold, then it will be too hard, and it will crack and stress the rolling equipment. If the metal is too hot, then cracking, surface melting and blemishes will occur when rolled. If the metal is not heated uniformly, then uneven deformation will occur, resulting in poor quality.

In the Hot Strip Mill, VOC is emitted from the lubricants being applied directly to the metal and roller.

	VOLATILE ORGANIC COMPOUNDS (VOC) (tons/year)		
Emissions Units	**POTENTIAL**	**BASELINE ACTUAL**	**EMISSIONS INCREASE**
Section D.25 -Tunnel Furnace No. 1 and No.2	2.4	1.7	0.7
Section D.25 -Tunnel Furnace Shuttles 1 and 2	0.61	0.25	0.36
Section D.25-Tunnel Furnace Snub	0.14	0.0	0.14
Section D.25-Hot Strip Mill	131.93	47.48	84.45

As seen in the above table, the Hot Strip Mill, Tunnel Furnace Nos. 1 and 2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace each have VOC emissions increase. Therefore, they are subject to BACT requirements under 326 IAC 2-2-3 for this pollutant.

Step 1: Identify Potential Control Technologies, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness, Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control technologies to control VOC emissions from tunnel Furnaces and hot strip mill based upon the search of the RBLC and other permitting agency websites.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to tunnel furnace system and hot strip rolling mills:

Hot Strip Rolling Mill			
Plant	Permit/RBLC No. Date Issued and State	Capacity	VOC Control Technology/ Emission Limitations
Proposed limit: Nucor Steel - Crawfordsville	Proposed (Indiana)	502 tons/hr	VOC - 0.06 lb/ton
Existing Limit: Nucor Steel - Crawfordsville	11/21/2003	502 tons/hr	VOC - 0.06 lb/ton
[1]Charter Steel	WI-0098	500,000 ton/yr	VOC - 0.06 lb/ton LAER

Note: [1] Limits are reflected in the actual permit.

Aside from Nucor Indiana itself, the RBLC did not identify any source with hot rolling mills except Charter Steel, Wisconsin with a limit of 0.06 pound per ton and a production limit of 500,000 tons per year. The Charter Steel's limits are not LAER or PSD BACT limits but are synthetic minor limits to avoid the applicability of LAER. Although this limit (0.06 lb/ton) was established to avoid LAER, it was used in the past as a basis of Nucor Indiana existing PSD BACT limit. Therefore, Nucor Hot Strip Rolling VOC BACT will remain the same.

IDEM, OAQ BACT Determination:

Therefore, Nucor's BACT for the Hot Strip Rolling is as follows:

(a) The VOC emissions from the Hot Strip Mill (HSM) shall not exceed 0.06 lb/ton of steel produced.

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)			
Plant	Permit/RBLC No. Date Issued and State	Capacity	VOC Control Technology/ Emission Limitations
Proposed limit: Nucor Steel - Crawfordsville	Proposed (Indiana)	50 MMBtu/hr	VOC - 5.5lb/MMCF
Existing Tunnel Furnaces 1 and 2 Nucor Steel - Crawfordsville	11/21/2003	84 MMBtu/hr	Not subject to BACT for this pollutant
MInnesota Steel	MN-0070 9/7/2007 (Minnesota)	165 MMBtu/hr	[1]VOC - 0.006 lb/MMBtu
Nucor Steel - Berkeley	SC-0112 5/5/2008 (South	58 MMBtu/hr	VOC - 0.0055 lb/MMBtu or 55

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)			
Plant	**Permit/RBLC No. Date Issued and State**	**Capacity**	**VOC Control Technology/ Emission Limitations**
	Carolina)		lb/MMCF
SteelCorr, Inc. Bluewater Project	AR-0077 7/22/2004, Arkansas	160 MMBtu/hr	VOC - 0.0050 lb/MMBtu
New Steel - Ohio	OH-0315 5/6/2008	187 MMBtu/hr	VOC - 1.03 lb/hr and 4.51 tons/yr

Note:[1] based from the actual permit.

The RBLC does not identify any add-on control options to control VOC emissions from tunnel, shuttles and snub furnaces. All of the sources in the above table use natural gas for fuel with the corresponding emission factor of 5.5 pound per million cubic feet (lb/MMCF) as the VOC emission limit. Based upon the RBLC the VOC BACT emissions limit is consistently 5.5 lb/MMCF or 0.0055 lb/MMBtu. . However, in converting this lb/MMCF VOC limit into lb/MMBtu each company used different heating value (Note: The average gross heating value of natural gas is approximately 1,020 million British thermal units per million cubic foot (MMBtu/MMCF), varying from 950 to 1,050 MMBtu/MMCF), which resulted in VOC BACT limits ranging from 0.0054 lb/MMBtu to 0.006 lb/MMBtu. Therefore, 0.055 lb/MMBtu or 5.5 lb/MMCF is the most practically achievable VOC limit for tunnel, shuttles and snub furnaces. A more stringent limit is not obtainable without the use of add-on controls; which are technically infeasible at this level of emissions.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel.

IDEM, OAQ, BACT Determination:

Therefore, Nucor's BACT for the Tunnel, Shuttle and Snub Furnaces is the following:

(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.

(b) When burning natural gas the following BACT applies:

(1) 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.

(c) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnaces Nos. 1 and 2 and Snub Furnace 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.

(d) When burning propane the following BACT applies:

(1) 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.

BACT FOR SULFUR DIOXIDE (SO2) EMISSIONS:

The proposed modification has a net increase of 40 tons of SO2 per year or greater. Therefore, the following new and physically modified emission units that emit this pollutant are required to apply Best Available Control Technology (BACT), pursuant to 326 IAC 2-2-3:

Meltshop

The SO_2 emissions from the Meltshop are attributable to the sulfur content of the raw materials charged in the EAFs and the materials which are used in the foamy slag process. The SO_2 emissions increases based on potential to baseline actual is 529.79 tons per year.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control SO_2 emissions from the Meltshop Station:

(a) Lower-Sulfur Charge Substitution; and

(b) Flue Gas Desulfurization (FGD) options:
   (1) Wet Scrubbing
   (2) Spray Dryer Absorption (SDA)
   (3) Dry Sorbent Injection (DSI)

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing SO_2 emissions from the Meltshop. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(a) Lower-Sulfur Charge Substitution- Due to inconsistent availability, charge substitution with lower sulfur-bearing raw materials is not practical.

Nucor presently uses low sulfur injection carbon (0.73%S - 0.83%S) and charge carbon (0.77%S) in the steel making process. Recently, however, Nucor has found that these materials have uncertain future availability. For example, Nucor's present low sulfur injection carbon may not always be available because the source does not offer long term contracts. Therefore, as part of the proposed BACT analysis for the Meltshop Station, Nucor is seeking to ensure that the BACT determination does not "lock in" a reliance upon low sulfur materials, including carbon/coke, which may not be available in the longer term. A summary of the charge materials, sulfur content of the materials, cost and supply trends are set forth below.

CARBON TYPES
Carbon basically has 3 different uses at the Meltshop: scrap, charge carbon (bucket fed and top fed), and injection carbon. Each of these carbon types acts differently in the operation. While there is some minor substitutability, none of these types can truly be a substitute for any of the others.

Scrap
This is carbon inherent in the scrap charge fed to the furnace. This carbon is consumed in the liquid phase of the steel. As such, it has a very high heating efficiency and the majority of the sulfur remains dissolved in the steel.

Charge Carbon (Bucket Fed) ~500 NT/Yr

This carbon is used to increase the amount of carbon in the liquid steel bath. While not as efficient as carbon already in the scrap, approximately 35 – 50% of the fixed carbon can be picked up in the bath depending on many variables. The balance of the fixed carbon acts on the slag (reducing FeO similar to injection carbon, but without the foaming effect) or burns in the top space. Because of slag and metal mixing during charging, about one-half of this sulfur leaves as SO_x while the remainder stays in the steel and slag.

Charge Carbon (Top Fed) ~3500 NT/Yr

This carbon is used to reduce the FeO in the slag. It has a relatively high efficiency, with approximately 75% of the fixed carbon reducing FeO. Reaction on the top of the slag layer means that approximately 2/3 of the sulfur leaves as SO_x, while the remainder stays in the steel and slag.

Injection Carbon ~60,000 NT/Yr

This is a carbon media that is injected into the slag layer where it reduces FeO and generates CO gas. This foams the slag and improves electrical efficiency. It has a relatively high efficiency, with approximately 65 – 85% of the fixed carbon reducing FeO. Reaction in the middle of the slag layer means that approximately one-half of the sulfur leaves as SO_x, while the remainder stays in the steel and slag.

CARBON SOURCES

The sources of this carbon can take many forms. The source deals with the chemically active “fixed” carbon and not the total carbon or BTU value. Volatiles in the carbon are flash distilled on the top space and play very little part in the furnace. Typical carbon sources are coal, metallurgical coke and petroleum coke.

Petroleum Coke

For many years petroleum coke was the preferred injection carbon source. This material has a very high fixed carbon, relatively low in sulfur (~1%), less abrasive, low in ash, and inexpensive. Since it was only available in small sizes (<1/4”) it was not usable as charge carbon. In recent years low sulfur petroleum coke has been in high demand, costs have increased and availability is limited. Most places have tried substituting some blend of low and high (2-3%) sulfur petroleum cokes. As the supply tightened, more anthracite coal and metallurgical coke were blended to compensate for reduced availability of petroleum coke. The coal has a different density and does not transport well with petroleum coke in pneumatic systems. The metallurgical coke is very abrasive and erodes pipe and hoses at an unacceptable rate.

Metallurgical Coke

Metallurgical coke has been used both as charge and injection carbon. As charge carbon, the material works well. The high fixed carbon content and large piece size makes a good combination. Its only drawback is that the coke tends to retain water. Excess water can be an explosion hazard, and precautions to drain water and avoid ice are vital. As mentioned above, the abrasive nature of metallurgical coke with the 10 – 20% ash content causes many problems as an injection carbon.

Coal

Anthracite coal is the primary coal used in the Meltshop steelmaking. Bituminous coal can be used but has some serious problems. Due to higher volatile content, bituminous coal has lower ignition and flash points. This means that it can ignite and even explode under certain storage conditions. Some bituminous coal is used as charge carbon, but other than brief experiments, bituminous coal is not used as an injection carbon.

SUPPLY TRENDS

Petroleum coke has been rising in sulfur content for the past several years. As more of the world's available crude is heavier and higher in sulfur content, the sulfur levels in petroleum coke will continue to increase. Most domestic petroleum coke supplies are projected to be around 3-3.5% sulfur in the coming year. The majority of the 2-2.5% sulfur is currently imported from Venezuela, a very politically unstable source. Lower sulfur petroleum cokes are essentially unavailable at the present time.

Metallurgical coke is currently both manufactured in the U.S. and imported from overseas. Many of the U.S. producers are at least partially dependent on foreign coal. In the early part of this decade over supply from China severely damaged domestic production capability and, when the Chinese government restricted the export of coke, a severe shortage developed. Metallurgical coke producers in the U.S. are also heavily dependent on a very few coking coal deposits in the Northeast. The Pinnacle Mine fire and subsequent production difficulties imposed a *force majeure* situation that severely impacted the U.S. steelmaking industry.

Bituminous coal, while plentiful, is not suited to many steelmaking situations. The supply of low volatile low sulfur bituminous coal is not much better than that of the low sulfur anthracite discussed below. The low fixed carbon levels mean that much larger quantities are required to meet the carbon requirements of the Meltshop EAF. These coals also pose a safety hazard in many existing storage and handling systems.

Anthracite coal is the mainstay of the low sulfur Meltshop carbon supply. U.S. production is confined almost exclusively to central Pennsylvania. The main alternative use of this material is home and industrial heating. This means that price and availability varies seasonally, and even within the seasons, weather conditions can drastically affect market conditions. This was demonstrated few years back when the State of Pennsylvania decided to keep heating with coal for an extra 2 months because oil and gas prices remained high. China, Russia, and Vietnam are major foreign suppliers of this material. In the last 3 years, the high ocean freights costs and market disruptions caused by expansion in China have made this imported material prohibitively expensive. Occasionally spot cargos have been offered when local demand temporarily drops, but these cargos disappear as soon as the local demand returns. Traders that do extensive business with China have been informed that the Chinese government plans to continue increasing tariffs and export restrictions to make China a net importer of coal and conserve both future reserves and limited infrastructure, which is tied up moving coal to the coast, instead of expanding their domestic economy. Thus, Chinese coal will not be available on the market in the reasonably foreseeable future.

Assessment

Because of the factors outlined above, continued availability of low sulfur carbon sources used at Nucor Crawfordsville facility in the past is increasingly in question. Petroleum coke sulfur concentrations are increasing and low sulfur petroleum cokes are essentially unavailable. Metallurgical coke is limited in supply, not useable as an injection carbon, and is used for other critical industrial operations besides steelmaking, making it difficult to consistently obtain and subject to periodic price spikes. Bituminous coals are largely unsuited to steelmaking, leaving anthracite as the remaining major source. Anthracite sulfur concentrations are also increasing and the supply of the lower sulfur coals is diminishing both domestically and in the world market. Therefore, continued availability of low sulfur sources of carbon cannot be assured.

The fixed carbon is another important variable. As the percent of fixed carbon diminishes, correspondingly more of the carbon source must be used to achieve the same result.

EFFICIENCY AND SULFUR EMISSIONS
Due to the differences in "fixed carbon," where a lower fixed carbon source requires corresponding greater usage, usage rates vary and are shown in the table below as "equivalent cost" and "sulfur content" to petroleum coke (#1 on the chart above).

Carbon #*	Eqv % Sulfur	Other Problems
#1	2.75%	
#2	1.25%	Pipe Wear
#3	0.77%	Pipe Wear
#4	0.73%	Low Availability
#5	0.83%	Pipe Wear
#6	1.03%	Safety

*Carbon # refers to list under "Current Pricing" by carbon type

Nucor is presently using #4 and #5 as injection carbon (0.73%S - 0.83%S) and #3 as charge carbon (0.77%S). These are the lower end %S materials available today. Of these compounds, #1 and #6 could potentially substitute for the current injection carbon (#4 and #5) and #2 could substitute for #3. Unfortunately, #6 is of limited availability. Therefore, only #1 and #2 are realistic options for long term operation.

Because of the combined problems caused by decreasing availability and the difficulty in relying upon the lower sulfur feedstocks including carbon sources, it is not feasible to maintain compliance with a much lower SO_2 limit than the current limit of 0.33 lb/ton. Instead, BACT must be set at a level that will allow Nucor to use reasonably available feedstocks in the future. Typical feedstock sulfur percentages are as follows:

Data for average S content for raw materials

Steel Scrap	0.02-0.1%
Pig Iron	0.026%
HBI	0.005%
Coal	included in BACT discussion above

Due to uncertain availability of lower sulfur content injection carbon (decreasing supply), Nucor is proposing a continued combined emission limit of 0.33 lb/ton from Meltshop baghouses 1 and 2.

(b) Flue Gas Desulfurization - FGD systems currently in use for SO_2 abatement can be classified as wet and dry systems. Note that based on a review of the RBLC database and discussions with various individuals knowledgeable about steel mill operations, it was revealed that control technologies for SO_2 abatement have not been successfully implemented for the meltshop operation. However, FGD options which have been traditionally applied to utility boilers may be available to control SO_2 from the Meltshop. Therefore, the application of this control option to the existing Meltshop will be further evaluated.

For FGD controls in general, the expected variability and low SO_2 concentrations in the gas stream are not amenable to responsive FGD treatment which is typically geared for high sulfur fuel combustion systems. In addition, the relatively large gas flow and the large amplitude temperature variations will play havoc with reaction kinetics as there is no available pre-concentration or uniform load scheme that would temper the perturbations. In conclusion, the effective SO_2 control efficiencies would be significantly impaired.

(1) Wet Scrubbing Wet scrubbers are regenerative processes which are designed to maximize contact between the exhaust gas and an absorbing liquid. The exhaust gas is scrubbed with a 5 - 15 percent slurry, comprised of lime (CaO) or limestone ($CaCO_3$) in suspension. The SO_2 in the exhaust gas reacts with the CaO or $CaCO_3$ to form calcium sulfite ($CaSO_3.2H_2O$) and calcium sulfate ($CaSO_4$). The scrubbing liquor is continuously recycled to the scrubbing tower after fresh lime or limestone has been added.

The types of scrubbers which can adequately disperse the scrubbing liquid include packed towers, plate or tray towers, spray chambers, and venturi scrubbers. In addition to calcium sulfite/sulfate, numerous other absorbents are available including sodium solutions and ammonia-based solutions.

There are various potential operating problems associated with the use of wet scrubbers. First, particulates are not acceptable in the operation of wet scrubbers because they would plug spray nozzles, packing, plates and trays. Thus, the scrubber would have to be located downstream of the Meltshop baghouses. Wet scrubbers also require handling, treatment, and disposal of a sludge by-product. In this case, air emissions would be exchanged for a large-scale water pollution problem. Treatment of wet scrubber wastes requires advanced wastewater treatment including frequent maintenance by an experienced operator. Finally, the current volumetric exhaust gas flow rate from the Meltshop is approximately 2,727,960 acfm. When coupled with the relatively low SO_2 emission rates, a relatively small SO_2 concentration of around 1 - 20 ppmv is in the exhaust. The SO_2 concentration will also vary widely over the Meltshop EAFs cycle which operates as a batch process. This will preclude efficient application of wet scrubbing.

Based on discussions with major wet scrubber vendors (i.e., Wheelabrator Air Pollution Control Inc., Bionomic Industries Inc., Beco Engineering Company, Ducon Technologies Inc.), it was clearly evident that there was a lack of experience in applying wet scrubbing technology for Meltshop application. This fact corroborated the findings from the review of the RBLC database and discussions with various individuals knowledgeable about steel mill operations that control technologies for SO_2 abatement have not been successfully implemented for Meltshops for the following reasons:

(A) Intrinsic nature of Meltshop operations on a batch basis;

(B) Inability to efficiently control SO_2 due to cyclic nature of process, timing of SO_2 evolution from the furnace, and duration of SO_2 emissions;

(C) Variability of SO_2 emissions and low SO_2 concentrations;

(D) Variability of gas flow and temperature with unpredictable thermal cycling; and

(E) Unable to provide credible and sustained SO_2 removal guarantees due to above reasons.

Thus, the wet scrubber option is considered technically infeasible for this application and will not be considered any further in this BACT analysis.

(2) Spray Dryer Absorption (SDA) - An alternative to wet scrubbing is a process known as dry scrubbing, or spray-dryer absorption (SDA). As in wet scrubbing, the gas-phase SO_2 is removed by intimate contact with a suitable absorbing solution. Typically, this may be a solution of sodium carbonate (Na_2CO_3) or slaked lime [$Ca(OH)_2$]. In SDA systems the solution is pumped to rotary atomizers, which create a spray of very fine droplets. The droplets mix with the incoming SO_2-laden exhaust gas in a very large chamber and subsequent absorption leads to the formation of sulfites and sulfates within the droplets. Almost simultaneously, the sensible heat of the exhaust gas which enters the chamber evaporates the water in the droplets, forming a dry powder before the gas leaves the spray dryer. The temperature of the desulfurized gas stream leaving the spray dryer is now approximately 30 - 50 ^oF above its dew point.

The exhaust gas from the SDA system contains a particulate mixture which includes reacted products. Typically, baghouses employing teflon-coated fiberglass bags (to minimize bag corrosion) are utilized to collect the precipitated particulates.

The SDA process would not have many of the potential operating problems associated with the wet scrubbing systems. Currently, the volumetric exhaust gas flow rate from the meltshop(s) is approximately 2,727,960 acfm. When coupled with the relatively low SO_2 emission rates, a relatively small SO_2 concentration of around 1 - 20 ppmv is in the exhaust. The SO_2 concentration will also vary widely over the Meltshop EAFs cycle. Based on discussions with a major SDA vendor (Wheelabrator Air Pollution Control Inc.), this control alternative has significant limitations for effective technical applicability for Meltshop application:

(A) The very low SO_2 concentration of around 1 - 20 ppmv in the influent coupled with a relatively large gas flow of 2,727,960 acfm would retard the adequate contact interface with the reagent. The vendor noted that the inlet SO_2 concentrations would be lower than the outlet concentrations that most SDAs are designed for;

(B) The variations in the SO_2 concentration during and between heats would severely impair the control system’s capability to respond adequately. SDA systems are not designed for adept load-follow flexibility;

(C) The low temperature of the exhaust gas of around 250 ^oF and the low gas moisture would not allow sufficient thermal gradient for an appropriate approach to saturation which typically specifies that the temperature of the desulfurized gas stream leaving the spray dryer be around 30 – 50 ^oF above its dew point;

(D) Thermal cycling during the regular batch operation of the Meltshop-EAFs in conjunction with the melting and refining heats could potentially result in less than desirable temperature approaches to saturation, thereby, raising the prospect of wet fouling. The system would be hard to control with attendant near-loss of SO_2 control efficiencies; and

(E) Unable to provide credible and sustained SO_2 removal guarantees due to above reasons.

Thus, SDA dry scrubbing option is considered technically infeasible for this application and will be not be considered any further in this BACT analysis.

(3) Dry Sorbent Injection (DSI) - This control option typically involves the injection of dry powders into either the furnace or post-furnace region of utility-sized boilers. This process was developed as a lower cost option to conventional FGD technology. Since the sorbent is injected directly into the exhaust gas stream, the mixing offered by the dry scrubber tower is not realized. The maximum efficiency realized for this SO_2 control technology is estimated to be fairly nominal. It is felt that if sufficient amounts of reactants are introduced into the flue gas, there is a possibility of some degree of mixing and reaction. The science is inexact and the coupling of reactant dosage and in-flue mixing which impacts the SO_2 control efficiency is susceptible to variability in SO_2 concentrations.

The dry sorbent injection process would not have many of the potential operating problems associated with the wet scrubbing systems. Currently, the volumetric exhaust gas flow rate from the Meltshop is approximately 2,727,960 acfm. When coupled with the relatively low SO_2 emission rates, a relatively small SO_2 concentration of 1 - 20 ppmv is in the exhaust. The SO_2 concentration will also vary widely over the Meltshop EAFs cycle. The injection dose of sorbent materials would be hard to control in order to match variability in SO_2 concentrations. Similar control systems are fraught with chronic operational problems with the sensors requiring frequent maintenance and calibration.

Based on discussions with a major scrubbing vendor (Wheelabrator Air Pollution Control Inc.), this control alternative has significant limitations for effective technical applicability for Meltshop application which were discussed earlier in the context of a dry scrubbing (SDA) system:

(A) The very low SO_2 concentration of around 1 - 20 ppmv in the influent coupled with a relatively large gas flow of 2,727,960 acfm would retard the adequate contact interface with the reagent. The vendor noted that the inlet SO_2 concentrations would be lower than the outlet concentrations that most DSIs are designed for;

(B) The variations in the SO_2 concentration during and between heats would severely impair the control system's capability to respond adequately. DSI systems are not designed for adept load-follow flexibility and variable reactant dose control with fast response times comparable to anticipated process conditions;

(C) Due to the anomalies of mixing afforded by the process, the reaction kinetics are not very flexible and rather time-dependent. Unlike the SDA system, the mixing uncertainty can potentially reduce DSI technology to a sheer brute-force proposition resulting in unstable and unpredictable performance;

(D) In a DSI-fabric filter coupled system configuration, whereby most of the reaction takes place on the filter cake on the bags, the vendor felt that adequate residence time simply would not be available since the attendant higher particulate load would necessitate a higher cleaning frequency of the fabric filter; and

(E) Unable to provide credible and sustained SO_2 removal guarantees due to above reasons.

Thus, DSI dry scrubbing option is considered technically infeasible for this application and will be not be considered any further in this BACT analysis.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Various control alternatives were reviewed for technical feasibility in controlling SO_2 emissions from the Meltshop Station. With the exception of using a scrap management program, which is already being implemented at the source, the applicability of the remaining control alternatives identified were determined to be technically infeasible. Since, only a single control alternative was ascertained to be technically feasible, no ranking of control alternatives has been provided.

Step 4 – Evaluate the Most Effective Controls and Document Results

Implementation of a scrap management program, was the only technically feasible control option for controlling the SO_2 emissions from the Meltshop. Based on a review of the information resources referenced earlier, it has been determined that these control alternatives have not been successfully implemented to reduce SO_2 emissions from Meltshop operation.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to steel Meltshops:

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**EAF Capacity**	**SO_2 Control Technology/ SO_2 Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	Proposed (Indiana)	502 tons/hr and 4,397,520 tons/yr	0.33 lb/ton ton and 167 lbs/hr based on 3-hr average
Current limit: Nucor Steel - Crawfordsville	PSD/SSM 107-16823-00038	11/21/2003	502 tons/hr and 4,397,520 tons/yr	0.33 lb/ton and 167 lbs/hr based on 3-hr average
STEEL MILLS WITH CONTINUOUS FEED (CONSTEEL) PROCESS				
Gerdau Ameristeel - Knoxville	-	(Tennessee)	capacity - unknown	**0.20 lb/ton**
Ameristeel – Charlotte	19-99v-567	4/29/1999 (North Carolina)	569,400 tons/yr	**0.23 lb/ton**
Nucor Steel – Darlington	0820-0001-CW	1/8/1998 (South Carolina)	300 tons/hr	0.25 lb/ton/0.675[a] lb/ton
Nucor Steel - Hertford County	08680T09	11/23/2004 (North Carolina)	capacity unknown	0.35 lb/ton
New Jersey Steel	-	- (New Jersey)	capacity unknown	no limit
STEEL MILLS WITH BATCH PROCESS				
Nucor-Yamato Steel – Blytheville		Arkansas	450 tons/hr	**0.15 lb/ton**
SDI – Butler, IN	CP033-8091-00043	6/25/1997 (Indiana)	200 tons/hr	**0.20 lb/ton**
Nucor Steel – Hickman	1139-AOP-R5	6/9/2003 (Arkansas)	capacity – 425 tons/hr	**0.20 lb/ton** **0.33 lb/ton (LMF & EAF)**
Nucor Steel –Berkeley County	-	- (South Carolina)	capacity unknown	**0.35 lb/ton**
Roanoke Electric Steel – Roankoe, VA	20131	11/6/1998 (Virginia)	100 tons/hr	**0.23 lb/ton**

Meltshop				
Plant	**RBLC ID or Permit #**	**Date Issued and State**	**EAF Capacity**	**SO_2 Control Technology/ SO_2 Emissions Limit**
Nucor Auburn Steel	7-0501-00044/00007	6/22/2004 (New York)	110 tons/hr	**0.25 lb/ton**
Beta Steel - NLMK	PSD 127-9642-00036	5/30/2003 (Indiana)	1.1 tons/yr	**0.25 lb/ton**
SDI – Columbia City	PSD 183-10097-00030	7/9/1999 (Indiana)	300 tons/hr	**0.25 lb/ton**
Nucor Steel - Memphis	0710-04PC	11/6/2000 (Tennessee)	150 tons/hr	0.35 lb/ton /1.75[a] lb/ton
Nucor Steel – Tuscaloosa, Inc.	413-0033	6/6/2006 (Alabama)	300 tons/hr	0.46 lb/ton
Gallatin – Ghent	**-**	- (Kentucky)	capacity - unknown-	0.49 lb/ton
SDI - Pittsboro	PSD 063-16628-00037	8/29/2003 (Indiana)	125 tons/hr	**Combined limits with the LMF:** **0.25 lb/ton -** low sulfur grade production series 1.5 lb/ton - 1100 SBQ series 1.8 lb/ton - 1200 SBQ series
Nucor Steel – Decatur, (formerly Trico Steel)	712-0037	6/12/2007 (Alabama)	440 tons/hr	0.62 lb/ton
IPSCO – Axis	503-8065	10/16/1998 (Alabama)	200 tons/hr	0.70 lb/ton
Chaparral Steel – Petersburg	51264	4/24/1998 (Virginia)	215 tons/hr	0.70 lb/ton
IPSCO – Montpelier, IA	-	(Iowa)	capacity unknown	0.70 lb/ton*
Arkansas Steel – Newport	35-AOP-R3	1/5/2001 (Arkansas)	50 tons/hr	0.70 lb/ton
Nucor Steel – Jewett	PSD-1029	1/5/2003 (Texas)	240 tons/hr	1.06 lb/ton
Nucor Steel – Norfolk	35677RC3	6/22/2004 (Nebraska)	EAF - (capacity unknown) - NOx emissions limit of 0.54 lb/ton	2.25 lb/ton
Nucor Steel - Plymouth	-	Utah	capacity unknown	194.96 lbs/3 hrs 137.07 lbs/24 hrs 322 tons/yr
Charter Steel – Saukville, WI	00DCF041	6/9/2000 (Wisconsin)	550,000 tons/yr	no limit

The following eight sources from the above table of BACT requirements for EAFs have the most stringent SO_2 limits:

Nucor Yamato Steel - has a SO_2 limit of 0.15 lb/ton, which was based on a production rate of 450 tons/hr, while Nucor's proposed limit of 0.33 lb/hr was based on a higher production rate of 502 tons/yr. However, Nucor Yamato produces steel beams that require higher sulfur content, while Nucor, Indiana products (steel sheets) require lower sulfur content. As a result Nucor – Indiana must remove more sulfur from its steel than Nucor Yamato. This sulfur is lost or emitted as sulfur dioxide. These two sources are not comparable. Therefore, Nucor Yamato will not be considered in this BACT analysis.

Gerdau Ameristeel, Knoxville, Tennessee - This source has a SO_2 limit of 0.20 lb/ton. Gerdau Ameristeel uses a Consteel ® process (see previous page for discussion on the Consteel ® process) in producing their products and it is not comparable to the Batch melting process Nucor, Indiana utilizes in their steel sheet metal production. Therefore, Gerdau Ameristeel will not be considered in this BACT analysis.

Ameristeel, Charlotte, North Carolina - This source has a BACT limit of 0.23 lb/ton. Ameristeel Charlotte uses a Consteel ® process (see previous page for discussion on the Consteel ® process) in producing their products and it is not comparable to the Batch melting process Nucor - Indiana utilizes in their steel sheet metal production. Therefore, Ameristeel will not be considered in this BACT analysis.

SDI - Butler, Indiana - This source has a limit of 0.20 lb/ton which was based on a combined limit for the two (2) EAFs and three (3) LMFs and two (2) casters at a total nominal capacity of the EAFs of 400 tons per hour, while Nucor's SO2 limit of 0.33 lb/ton is based on a higher production capacity at 502 tons per hour. This limit is a combined limit for the two (2) EAFs, three (3) LMFs, Argon Oxygen Decarburization (AOD), Desulfurization station and two (2) Continuous Casters. The higher the source's production rates the more emissions it will generate, and vice-versa. Thus, a lower limit is achievable by SDI. Therefore, SDI is not comparable to Nucor, Indiana.

Nucor Steel – Hickman, Arkansas - This source has a SO_2 limit of 0.20 lb/ton, which was based on production rate of 425 tons/hr, while Nucor's proposed limit of 0.33 lb/hr is based on a higher production rate of 502 tons/yr. In addition, Nucor Steel Hickman produces steel beams, which require low sulfur injection carbon, which is different from the charged materials used to produce Nucor, Indiana products (steel sheets) which have variable sulfur content. Some product specifications require the removal of more sulfur than other products due to the requirements in the hardness, malleability, and other physical/chemical characteristics. SO_2 emissions are attributable to sulfur content of the charge materials and the required sulfur content of the final product. Therefore, Nucor Hickman will not be considered in this BACT analysis.

Nucor Steel, Berkeley County, South Carolina - The RBLC indicates that this source has a SO_2 limit of 0.20 lb/ton and that Nucor - Berkeley washes the metal scrap prior to melting to reduce the SO_2 emissions. However, based on the information acquired from Nucor, Berkeley "scrap washing" was not required in their permit and the SO_2 limit in their permit is 0.35 lb/ton. Therefore, Nucor - Berkeley is less stringent than the Nucor, Indiana proposed limit of 0.33 lb/ton.

Roanoke Electric Steel - This source has a limit of 0.23 lb/ton which was based on a production capacity of 100 tons/hr. Nucor Steel proposed limit of 0.33 lb/ton is based on production capacity of 502 tons/hr. These two sources are not comparable because Nucor, Indiana is five (5) times larger than Roanoke Electric Steel. The higher the source's production rate, the more emissions it will generate and vice-versa. Thus, a lower limit is achievable by Roanoke Electric Steel Therefore, it will not be considered in this BACT analysis.

Beta Steel - NLMK- This source has a limit of 0.25 lb/ton which was based on a production capacity of 1.1 million tons/year. Nucor Steel proposed limit of 0.33 lb/ton is based on production capacity of 4.4 million tons/yr. These two sources are not comparable because Nucor, Indiana is four (4) times larger than Roanoke Electric Steel. The higher the source's production rate, the more emissions it will generate and vice-versa. Thus, a lower limit is achievable by Beta Steel - NLMK. Therefore, it will not be considered in this BACT analysis.

SDI, Columbia City - This source has a limit of 0.25 lb/ton which was based on a production capacity of 300 million tons/hr and a combined limit for two (2) EAFs, one (1) LMF and two (2) casters. These two sources are not comparable because Nucor, Indiana is almost twice the size of SDI and Nucor has more emission units (two (2) EAFs, three (3) LMFs, Argon Oxygen Decarburization (AOD), Desulfurization station and two (2) Continuous Casters), contributing to the SO2 emissions. Thus, a lower SO2 limit is achievable by SDI.

None in the steel mill industry has proposed or successfully implemented any add on control devices to control SO_2 emissions from Meltshop operation.

IDEM, OAQ BACT Determination:

Therefore, Nucor's BACT for the Meltshop is the following:

(a) The total SO_2 emissions from the meltshop EAFs baghouses 1 and 2, which control the two (2) EAFs, AOD, desulfurization station, two (2) Continuous Casters and the (3) LMFs, shall be limited to 0.33 lb/ton of steel produced, and 167 pounds of SO2 per hour based on 3-hour average.

(Section D.4) - CASTRIP - Continuous Strip Caster

The steel casting process does not result in the emissions of sulfur dioxide (SO2). Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, the emissions increase of SO_2 is zero. Therefore, the Castrip Continuous Strip Caster is not subject to BACT requirements under 326 IAC 2-2-3 for SO2.

(Section D.15) - Pickle Line No. 2

The pickling process does not result in the emissions of SO2. Likewise, its physical modification would not result in the emissions of this pollutant. Therefore, the emissions increase of SO_2 is zero. Therefore, the Pickle Line No. 2 is not subject to BACT requirements under 326 IAC 2-2-3 for SO2.

**(Section D.29) - Tundish Preheaters, TP1 through TP5
and Tundish Nozzle Preheaters (TPH1 through TPH8)**

The Preheaters are designed to achieve high preheat temperatures for the Tundish. The tundish are preheated to keep the molten steel flowing into the molds of the continuous casting machine. The Tundish Preheaters are natural gas-fired with propane as a backup fuel, each with a heat input capacity of 12 MMBtu/hr.

The SO2 emissions from the Tundish Preheaters come from the combustion of natural gas. Pipeline quality natural gas typically has sulfur levels of 2,000 grains per million cubic feet. However, sulfur containing odorants are added to natural gas for detecting leaks, resulting in small additional amounts of SO2 emissions.

The SO2 emissions increase from the Tundish Preheaters based upon potential to baseline actual is 0.07 ton/year, while the four (4) additional Tundish Nozzle Preheaters have a total PTE of 0.01 tons of SO2 per year.

Step 1 – Identify Control Options, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness and Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control options identified, that are technically feasible to control negligible SO_2 emissions from tundish preheaters and nozzle preheaters or other similar typed units.

Step 5 - Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to SO_2 emissions from tundish preheaters:.

Tundish Preheaters and Nozzle Preheaters			
Plant	**RBLC ID or Permit # / Date Issued**	**Heat Input Rate (MMBtu/hr)**	**SO_2 Control Technology/ Emissions Limit**
Proposed: Nucor Steel - Crawfordsville	PSD 107-32615-00038	0.8 to 10	0.0006 lb/MMBtu
Existing Limit - Nucor Steel - Crawfordsville	PSD 107-16823-00038 11/21/2003	0.8 to 10	0.0006 lb/MMBtu
[1]SDI, Whitley, IN	PSD 183-10097-00030 (7/7/1999) and Proposed PSD 183-23905-00030	10	0.0006 lb/MMBtu
Steel Dynamics, Hendricks, IN	PSD 063-16628-00037 8/29/2003	7.5	0.0006 lb/MMBtu
[1]Minnesota Steel	MN-0070		No limit for this pollutant
[1]Charter Steel	OH-0276	12	0.0070 lb/hr (3-hr average) using 0.0006 lb/MMBtu

Note [1] Limit is reflected in the actual permit.

The review of the RBLC indicates a consistent SO2 BACT of 0.0006 lb/MMBtu or 0.06 lb/MMCF for all sources identified. Therefore, Nucor, Indiana SO_2 BACT for each of the tundish preheaters will remain the same.

Charter Steel - The source's limit of 0.007 lb/hr was based upon 0.0006 lb/MMBtu.

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel. Propane emissions calculated at 8760 hours per year of usage will result in less SO2 emissions than when combusting natural gas.

IDEM, OAQ BACT Determination:

Nucor's BACT for Tundish Preheaters, TP1 through TP-5 and Tundish Nozzle Preheaters (TPH1 through TPH8) is the following:

(a) The total sulfur dioxide (SO_2) emissions from the Tundish Preheaters, TP1 through TP5, shall not exceed 0.06 lb/million cubic feet of natural gas burned (lb/MMCF), 0.035 pound per hour total.

(b) The SO2 emissions from the Tundish Nozzle Preheaters (TPH1 through TPH8) shall be limited to 0.6 pounds per million cubic feet of natural gas burned, 0.004 pounds per hour (total).

(c) The Tundish Preheaters (TP1 through TP5) and Tundish Nozzle Preheaters (TPH1 through TPH8) shall only burn natural gas and propane as a back-up fuel.

(Section D.25) - Hot Strip Mill and Tunnel Furnace System (Tunnel Furnace Nos. 1 and 2 Shuttle Furnace Nos. 1 and 2 and Snub Furnace)

In the hot mill, steel strands, billets, or slabs are heated in the Hot Mill Reheat Furnace or Tunnel Furnace System so that they become soft enough to roll. If the metal is too cold, then it will be too hard, and it will crack and stress the rolling equipment. If the metal is too hot, then cracking, surface melting and blemishes will occur when rolled. If the metal is not heated uniformly, then uneven deformation will occur, resulting in poor quality.

The SO2 emissions from the furnaces come from the combustion of natural gas. Pipeline quality natural gas typically has sulfur levels of 2,000 grains per million cubic feet. However, sulfur containing odorants are added to natural gas for detecting leaks, resulting in small additional amount of SO2 emissions.

	SULFUR DIOXIDE (SO2) (tons/year)		
Emissions Units	**POTENTIAL**	**BASELINE ACTUAL**	**EMISSIONS INCREASE**
Section D.25 -Tunnel Furnace No. 1 and No.2	0.3	0.18	0.12
Section D.25 -Tunnel Furnace Shuttles 1 and 2	0.07	0.03	0.04
Section D.25-Tunnel Furnace Snub	0.02	0.00	0.02
Section D.25-Hot Strip Mill	0.0	0.0	0.0

As seen in the above table, Tunnel Furnace Nos. 1 and 2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace each have SO2 emissions increase. Therefore, they are subject to BACT requirements under 326 IAC 2-2-3 for this pollutant.

Step 1 – Identify Control Options, Step 2 – Eliminate Technically Infeasible Control Options, Step 3 – Rank Remaining Control Technologies by Control Effectiveness and Step 4 – Evaluate the Most Effective Controls and Document Results

There are no add-on control options identified, that are technically feasible to control negligible amount of SO_2 emissions from tunnel furnace system or other similar typed units.

Step 5 – Select BACT

A review of USEPA's RACT/BACT/LAER Clearinghouse, Indiana air permits and sources permitted by other states agencies, identified the following with respect to tunnel furnace system:

Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces			
Plant	**Permit/RBLC No. Date Issued and State**	**Capacity**	**SO2 Control Technology/ Emission Limitations**
Proposed limit: Nucor Steel - Crawfordsville	Proposed (Indiana)	50 MMBtu/hr	SO2 - 0.6 lb/MMCF or 0.0006 lb/MMBtu
Existing Tunnel Furnaces 1 and 2 Nucor Steel - Crawfordsville	11/21/2003	84 MMBtu/hr	Not subject to BACT for this pollutant
MInnesota Steel	MN-0070 9/7/2007 (Minnesota)	165 MMBtu/hr	[1]SO2 - 0.10 lb/hr
Nucor Steel - Berkeley	SC-0112 5/5/2008 (South Carolina)	58 MMBtu/hr	SO2 - 0.0006 lb/MMBtu or 0.6 lb/MMCF
SteelCorr, Inc. Bluewater Project	AR-0077 7/22/2004, Arkansas	160 MMBtu/hr	SO2 - 0.0006 lb/MMBtu or 0.6 lb/MMCF

Note:[1] based from the actual permit.

The RBLC does not identify any add-on control options to control SO2 emissions from tunnel, shuttles and snub furnaces. All of the sources in the above table use natural gas for fuel with the corresponding emission factor of 0.6 lb/MMCF or 0.0006 lb/MMBtu determined as the SO2 limit. Although Minnesota Steel has a limit of 0.10 pound per hour, this limit was based upon the emission factor of 0.6 lb/MMCF (160 MMBtu/hr x 0.0006 lb/MMBtu = 0.10 lb/hr).

All sources in the above table are using natural gas for fuel. However, during the times when there is a curtailment in the supply of natural gas, Nucor is using propane as the back-up fuel. Propane emissions calculated at 8760 hours per year of usage will result in less SO2 emissions than when combusting natural gas.

IDEM, OAQ, BACT Determination:

Therefore, Nucor's BACT for the Tunnel, Shuttle and Snub Furnaces is the following:

(a) The SO2 emissions from Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 0.6 pound per million cubic feet (lb/MMCF) of natural gas burned.

(b) The Tunnel Furnaces No. 1 and No.2, Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall combust natural gas as the primary fuel and propane as a backup fuel.

BACT FOR GREENHOUSE GASES (CO2e):

The proposed modification has a net increase of 75,000 tons per year or greater. Therefore, the following new and physically modified emission units that emit GHGs (CO2e) shall apply Best Available Control Technology (BACT), pursuant to 326 IAC 2-2-3 for this pollutant:

(Section D.29) Meltshop - EAFs, LMFs, Casters, AOD Vessels and Desulfurization, Tundish Preheaters TP1 - TP5, Section D.25 - Tunnel Furnace System (Tunnel, Shuttles and Snub Furnaces)

The GHG emissions in steelmaking are generated at the Meltshop EAFs primarily during melting and refining processes which remove carbon as CO and CO2 from the charge materials and carbon electrodes. Emissions of CO2 are also generated from the Meltshop EAFs oxyfuel burners.

GHGs are likewise, emitted during natural gas combustion at the tunnel furnace system and tundish pre-heaters combusting natural gas. Nearly all of the fuel carbon (99.9 percent) in natural gas is converted to CO2 during the combustion process. Fuel carbon not converted to CO2 results in CH4 and CO emissions and is due to incomplete combustion.

	GREENHOUSE GASES (CO2e) (tons/year)		
Emissions Units	**POTENTIAL**	**BASELINE ACTUAL**	**NET INCREASE**
Section D.29- Meltshop Station	454,044	232,881	221,163
Section D.29- Tundish Preheaters TP1-TP5	31,106	15,553	15,553
Section D.25 -Tunnel Furnace No. 1 and No.2	51,843	34,735	17,108
Section D.25 -Tunnel Furnace Shuttles 1 and 2	13,479	13,479	0.0
Section D.25- Tunnel Furnace Snub	3,111	0.0	3,111
Section D.25- Hot Strip Mill	0.0	0.0	0.0
Section D.4 - Castrip VTD	4,340	63.7	4,263.8
Castrip Caster LMS	473	74.7	398.3
TOTAL GHG (CO2e) NET EMISSIONS INCREASE FROM MODIFICATION	**558,396**	**296,786.4**	**261,597**

Note: The hot strip mill (D.25) and Tunnel Furnace Shuttle 1 and 2) are not subject to PSD for GHG since their modification did not result in GHG emissions increase.

As seen in the above table, the Meltshop Station, Tundish Preheaters, Tunnel Furnace Nos. 1 and 2 and Snub Furnace each have CO2e emissions increase. Therefore, they are subject to BACT requirements under 326 IAC 2-2-3 for this pollutant.

Step 1: Identify Potential Control Technologies

This analysis focuses only on CO2 emissions control, since there are no known add-on controls for the following GHG pollutants:

(a) Methane (CH4)
(b) Nitrous Oxide (N2O)
(c) Hydrofluorocarbons (HFC)
(d) Perfluorocarbons (PFC)
(e) Sulfur Hexafluoride (SF6)

Control Alternatives:

EPA has identified the following control alternatives potentially applicable, into the following categories for BACT evaluation:

(a) Add-on Control Options - .Only one add-on control technology option was identified to control GHGs:

(1) Carbon Capture and Storage (CCS)

(2) Inherently Lower-Emitting Processes/Practices/Designs

There are no add-on control options identified for individual sources of GHG emissions at a source, nor individual GHG BACT evaluation done for this sized of emission units like tundish preheaters, tunnel furnaces, snub furnaces, and meltshop.

Step 2 – Eliminate Technically Infeasible Control Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing GHG emissions from all emission points in a steel mini-mill:

(a) Add-on Control Options - .Only one add-on control technology option was identified to control GHGs:

(1) Carbon Capture and Storage (CCS) -

CCS involves separation and capture of CO2 from the flue gas, purifying, pressurization of the captured CO2, transportation of the CO2 via pipeline and finally injection and long-term geologic storage of the captured CO2 into appropriate geologic features and required storage capacity available.

EPA considers CCS to be an available technology if it can reasonably be installed and operated on the source type under consideration. Where a control technology has been applied on one type of source, this is largely a question of the transferability of the technology to another source type. A control technique should remain under consideration if it has been applied to a pollutant-bearing gas stream with similar chemical and physical characteristics. The control technology would not be applicable if it can be shown that there are significant differences that preclude the successful operation of the control device. For example, the temperature, pressure, pollutant concentration, or volume of the gas stream to be controlled, may differ so significantly from previous applications that it is uncertain the control device will work in the situation currently undergoing review.

<u>Flue Gas Carbon Capture with Transport and Sequestration</u>

Carbon capture entails the separation of CO2 from the flue gas of a combustion source after combustion has been completed. Several systems are commercially available for separating CO2 from flue gas, the most common of which are amine-based absorber systems. Separating CO2 from the flue gas must be paired with some form of storage, or sequestration, in order for the technology to provide any reduction in CO2 emissions. In fact, CO2 separation without storage actually results in an increase in total CO2 generation, since the separation system has an energy demand as well, in the form of a reboiler for regenerating amine solution rich in CO2, and electrical needs for system equipment.

Capturing CO2 emissions from industrial processes is easiest at large industrial plants where CO2-rich flue gas can be captured at the facility. The separation of CO2 is already performed in a number of industries as part of the standard industrial process. For example, in natural gas production, CO2 needs to be separated from the natural gas during processing. Similarly, in industrial plants that produce ammonia or hydrogen, CO2 is removed as part of the process. In other industries, such as in steel mills, capture process have not yet been demonstrated. Particulate concentrations and the impurity of CO2 in the exhaust at both the observed and the anticipated flow rates from the Meltshop EAFs add to the level of complexity involved with attempting carbon capture for this type of source.

Dedicated sequestration involves the injection of CO_2 into an on-site or nearby geological formation, such an active oil reservoir (enhanced oil recovery), a brine aquifer, an unmined coal seam, basalt rock formation, or organic shale bed. Geologic sequestration is being studied in several locations and geologies, with varying results and predictions. Clearly, in order for geologic sequestration to be feasible, a promising geological formation must be located at or very near to the facility location.

Although storage is one of the last steps in the Carbon Capture and Storage (CCS) process it is one of the first to be considered when developing a strategy to roll-out CCS infrastructure and systems. There is no benefit to capturing CO_2 unless it can be stored and thus the total storage capacity and its location is an important constraint on how much CO_2 can actually be managed. The most suitable sites for cost-effective long-term emissions storage include geological formations such as active or depleted oil, gas and coalbed methane reservoirs; deep saline aquifers; and salt caverns. Other potential storage options include mineral fixation or ocean storage. In 2006 The London Protocol legalized the storage of CO_2 in the ocean as long as it is below the seabed.

(a) Comprehensive research and testing on the site integrity must be done before a storage site can be selected.
(b) Site selection criteria includes, but is not limited to the following:

   (i) Conducting detailed site characterization that encompasses an assessment of the geological characteristics of the storage reservoir and caprock, including the existence and characteristics of fractures and faults.
   (ii) Understanding the hydrogeology, geochemistry and geomechanics at the site.
   (iii) Assessing the volume and permeability of the storage formation.
   (iv) Understanding the site's geological trapping mechanisms.
   (v) An assessment of whether abandoned or active oil/gas wells will compromise the integrity of the seal.

(c) Once a site is selected and CO_2 is being stored, a measurement, monitoring and verification program must be put into place.

<u>CO_2 Transportation Infrastructure</u>

Nucor has neither access to, nor can develop, a suitable sequestration site for the volume of CO_2 (544,917 tons/year) that may be vented from the steel mini mill. Neither IDEM nor Nucor is aware of any CO_2 transportation infrastructure that will transport the volume of CO_2 emitted by Nucor.

While sequestration is being studied for use in the region where a plant will be located, there is presently no practical option. Department of Energy (DOE) funding is currently supporting a substantial research and demonstration initiative called the Regional Carbon Sequestration Partnership (RCSP) program. This program has begun several large-scale CO_2 injection research projects targeting injection of over 1 million tons of CO_2. In the Illinois Basin, the regional partnership is the Midwest Geologic Sequestration Consortium (MGSC). That group has a large-scale sequestration demonstration underway at the ADM plant in Decatur, Illinois. That project expects to inject 1 million tons of CO2, " to further understanding of carbon sequestration technology around the world." The results of this demonstration won't be known for some time.

Another CO2 injection demonstration is in Hancock County, Kentucky, Indiana's neighboring state. That project, being conducted by the Kentucky Geologic Survey with funding from Kentucky and Department of Energy (DOE) drilled an 8,216 foot well and injected 18,454 barrels of brine and 323 tons of CO2 in 2009. Limited information is available regarding the results of this small scale research. It is clear that significant additional research is needed to demonstrate the viability of large-scale sequestration in this region.

Government Funding for CCS Infrastructure

The government research and development is needed to address the critical challenges of applying many geologic sequestration options.

The DOE National Energy Technology Laboratory (NETL) issued a Carbon Dioxide Capture and Storage Research in December 2010. The NETL report outlines critical challenges to carbon storage technology and outlines a research initiative that runs through 2025, for developing needed technologies and understanding.

While numerous projects are underway worldwide to test and/or demonstrate the practical application of CCS, at this time there is no large-scale implementation. Therefore, CCS is not technically feasible and will be eliminated from further evaluation.

(b) Inherently Lower-Emitting Processes/Practices/Designs - The application for methods, systems or techniques to increase energy efficiency is one way to reduce GHG emissions. Applying the most energy efficient technologies at a source should in most cases translate not only in the reduction of emissions of the particular regulated NSR air pollutant undergoing BACT review, but it also may achieve collateral reduction of emissions of other pollutants.

Nucor is slowly incorporating lower practices and processes that will reduce its greenhouse gas footprint.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

While numerous projects are underway worldwide to test and/or demonstrate the practical application of CCS, at this time there is no large-scale implementation. The following is the only control option left to consider in controlling GHG emissions from the steel mini-mill:

Inherently Lower-Emitting Processes/Practices/Designs

Step 4 – Evaluate the Most Effective Controls and Document Results

Inherently Lower-Emitting Processes/Practices/Designs - The proposed modification includes control measures to reduce GHG emissions from the plant which includes the following:

(a) Improvements to the Meltshop EAFs by adding more oxyfuel burners/lances - Oxyfuel burners, which burn natural gas and oxygen, use convection and flame radiation to transfer heat to the scrap metal. Oxygen lances are used to inject oxygen directly into the molten steel; exothermic reactions with the iron and other components provide additional energy to speed of the melting of the scrap and reducing the consumption of electricity produced by offsite electric utility which indirectly reduces GHG emissions and electrode material which reduces energy related GHG emissions. Oxyfuel burners also increase heat transfer while reducing heat losses, and reduce tap to tap time.

(b) Nucor combusts natural gas as the primary fuel and propane as backup fuel for the affected furnaces at the plant, which are all low carbon fuels. Thus, minimizes GHG emissions.

The table below shows the CO2 emission factors for combustion of various types of fuel.

Typical CO_2 Emission Factors

Fuel	Pounds CO_2 per Million Btu
Petroleum Coke*	225
Coal**	210
Distillate Oil**	161
Natural Gas***	117
Propane***	136.6
Kerosene	159

* Source: GHG MRR Rule, Subpart C, Table C-1
**Source: US Energy Information Administration,
*** Source: Emission Factor- AP42, Table 1.4-2 for natural gas fuel and Table 1.5-1 for propane fuel
http://www.eia.doe.gov/oiaf/1605/coefficients.html

Step 5 – Select BACT

A review of the RBLC Clearinghouse database and EPA's new information sharing tool, the GHG Mitigation Strategies Database did not reveal any currently listed technologies for the control of GHG emissions from steel mills.

IDEM, OAQ BACT Determination:

Therefore, Nucor's BACT for Greenhouse Gases (GHG) is the following:

(a) Combustion emission units where fuel type is specified by condition of the 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 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.

Appendix C

Air Quality Analysis

Nucor Steel

Crawfordsville, Indiana (Montgomery County)

Tracking and Plant ID: 107-32615-00038

Proposed Project

Nucor Steel (Nucor) submitted their PSD modeling in December 2012.

Nucor proposes to modify its steel mill by adding new oxyfuel burners to each electric arc furnace, modifying the Castrip caster to cast wider product, including four unpermitted small existing emergency diesel generators.

ERM was the consultant that prepared the modeling portion of the permit application for Nucor. This technical support document provides the air quality analysis review of the submitted modeling by ERM for Nucor.

Analysis Summary

Based on the potential emissions after controls, a PSD air quality analysis was triggered for SO_2, PM_{10}, $PM_{2.5,}$ NO_2, CO, VOC, and Pb. The significant impact analysis for CO determined that modeling concentrations did not exceed the significant impact levels. A refined analysis was required for all the other standards for PM_{10}, $PM_{2.5,}$ NO_2, Pb, and SO_2. The refined modeling showed no NAAQS violations. Pre-construction monitoring requirements were not necessary since existing monitoring data are available. An additional impact analysis was conducted and showed no significant impact. A Hazardous Air Pollutant (HAP) analysis was performed since Nucor was major for HAPs.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.

B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid utilized for the analyses.

C. Determine the significant impact level, the area impacted by the source's emissions, and background air quality levels.

D. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or PSD increment if the applicant exceeds significant impact levels.

E. Perform a secondary ozone analysis if the applicant is major for NO_2 and/or VOCs.

F. Perform a secondary PM2.5 analysis if the applicant is major for NO_2 and SO_2.

G. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation, and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park.

H. Perform a HAP screening for informational purposes.

I. Summarize the Air Quality Analysis.

Section A - Pollutants Analyzed for Air Quality Impact

Applicability

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Regulations (CFR) 52.21(b) (23) (i).

Proposed Project Emissions

SO_2, PM_{10}, $PM_{2.5,}$ NO_2, CO, VOC, and Pb are the main pollutants that will be emitted from Nucor and are summarized below in Table 1. SO_2, PM_{10}, $PM_{2.5,}$ NO_2, CO, VOC, and Pb potential emissions after controls exceed the PSD significant emission rates and require an air quality analysis.

TABLE 1
Significant Emission Rates for PSD

POLLUTANT	**SOURCE EMISSION RATE** (Facility totals in tons/year)	**SIGNIFICANT EMISSION RATE** (tons/year)	**PRELIMINARY AQ ANALYSIS REQUIRED**
NO_2	684.5	40	Yes
CO	3337.3	100	Yes
PM_{10}	305.1	15	Yes
$PM_{2.5}$	291.8	10	Yes
SO_2	530.8	40	Yes
Pb	1.02	.6	Yes
VOC	267.1	40	Yes

Nucor’s emission rates were taken from Table 2-1 of their application.

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid and Terrain

Stack Height Compliance with Good Engineering Practice (GEP)

Applicability

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur. Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which affects the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$Hg = H + 1.5L$$

Where: Hg is the GEP stack height
H is the structure height
L is the structure's lesser dimension (height or width)

New Stacks

Since some of the new stack heights for Nucor are below GEP stack height, the effect of aerodynamic downwash is accounted for in the air quality analysis for the project.

Meteorological Data

The National Weather Service (NWS) 1-minute Automated Surface Observation Station (ASOS) meteorological data used in AERMOD consisted of 2006 through 2010 surface data from the airport in Indianapolis, Indiana and upper air measurements taken at Lincoln, Illinois. The meteorological data was preprocessed using the latest versions of AERMINUTE, AERSURFACE, and AERMET at that time the permit was prepared.

Model Description

ERM used AERMOD Version 12060. The Office of Air Quality (OAQ) used the same model version in their air quality analysis review to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Regulation Part 51, Appendix W "Guideline on Air Quality Models".

Receptor Grid

OAQ modeling used the same receptor grids generated by ERM. The receptor grid is outlined below to determine the significant impact area for each pollutant:

- 100 meter spacing along the facility's property boundary,
- 100 meter spacing out to 2 kilometers,
- 250 meters spacing out to 5 kilometers.
- 500 meters spacing out to 7 kilometers.

- 1000 meters spacing out to 10 kilometers.

Treatment of Terrain

Receptor terrain elevation inputs were interpolated from NED (National Elevation Dataset) data obtained from the USGS. NED terrain data was preprocessed using AERMAP.

Section C - Significant Impact Level/Area (SIA) and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source would exceed the PSD significant impact levels (concentrations). If the source's concentrations exceed these levels, further air quality analysis is required. Refined modeling for $PM_{2.5}$, PM_{10}, SO_2, and NO_2, was required because the results did exceed significant impact levels. Pb doesn't have a significant impact level so refined modeling is required. ERM modeled the worst case operating scenario to predict maximum concentrations. Significant impact levels are defined by the following time periods in Table 2 below with all maximum-modeled concentrations from the worst case operating scenario. A Tier II 80% conversion of NO to NO_2 was assumed based on the March 01, 2011, Tyler Fox memorandum for 1-hour NO to NO_2 conversion. A 75% conversion of NO to NO_2 was used for the annual time averaging period.

TABLE 2
Significant Impact Analysis[4]

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS ($\mu g/m^3$)	SIGNIFICANT IMPACT LEVEL ($\mu g/m^3$)	REFINED AQ ANALYSIS REQUIRED
NO_2	Annual[1]	2.6[5]	1	Yes
NO_2	1 hour[2]	79.8[5]	7.55	Yes
PM_{10}	Annual[1]	1.2	1	Yes
PM_{10}	24 hour[1]	12.1	5	Yes
$PM_{2.5}$	Annual[3]	.8	.3	Yes
$PM_{2.5}$	24 hour[3]	4.6	1.2	Yes
SO_2	3 hour[1]	18.7	25	Yes
SO_2	24 hour[1]	13.6	5	Yes
SO_2	Annual[1]	1.7	1	Yes
SO_2	1 hour[2]	20.6	7.80	Yes
Pb	3 months	.001	N/A	Yes
CO	1hour[1]	130.2	2000	No
CO	8 hour[1]	89.3	500	No

[1] The first highest values per the U.S. EPA NSR manual dated October 1990.
[2] In accordance with recent U.S. EPA guidance, the highest of the five year modeled averages predicted each year at each receptor. See the March 01, 2011, memorandum.
[3] In accordance with recent U.S. EPA guidance, the highest modeled average over the five years at each receptor. See the March 23, 2010, memorandum.
[4] Impacts are from Nucor only for just the proposed modification.
[5] NO_2 values were multiplied by .8 for the 1-hour and .75 for the annual.

Pre-construction Monitoring Analysis

Applicability

The PSD rule, 326 IAC 2-2-4, requires an air quality analysis of the new source or the major modification to determine if the pre-construction monitoring threshold is triggered. In most cases, monitoring data taken from a similar geographic location can satisfy this requirement if the pre-construction monitoring threshold has been exceeded. Also, post construction monitoring could be required if the air quality in that area could be adversely impacted by applicant's emissions.

Modeling Results

The modeling results were compared to the PSD preconstruction monitoring thresholds. The results are shown in the table below.

TABLE 3
Preconstruction Monitoring Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS ($\mu g/m^3$)	DEMINIMIS LEVEL (µg/m3)	ABOVE DE MINIMIS LEVEL
NO_2	Annual[1]	2.6	14	No
PM_{10}	24 hour[1]	12.1	10	Yes
$PM_{2.5}$	24 hour[2]	4.6	4	Yes
SO_2	24 hour[1]	13.6	13	Yes
CO	8 hour[1]	89.3	575	No
Pb	3 month	.001	.1	No

[1] The first highest values per the U.S. EPA NSR manual dated October 1990. Maximum modeled impacts are from Nucor only.
[2] In accordance with recent U.S. EPA guidance, the highest average over the five years at each receptor. See the March 23, 2010, memorandums from EPA.

PM_{10}, $PM_{2.5}$, and SO_2 did trigger the preconstruction monitoring threshold level. Nucor can satisfy the preconstruction monitoring requirement since Nucor conducted an ambient air quality monitoring program for SO_2, NO_2, and $PM_{2.5}$ from October 1, 2010 through September 30, 2011. The monitoring station was located south of the mill. The PM10 monitor in Vigo County is representative of the Nucor mill site. There are three IDEM ozone monitors within 60 km. of the Nucor Mill. Due to the number of monitors and the regional extent of ozone formation, these monitors are considered as representative monitors for the mill site.

Background Concentrations

Applicability

U.S. EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (EPA-450/4-87-007) Section 2.4.1 is cited for approval of the monitoring sites chosen for this area.

Background Monitors

Background data was taken from an on-site monitoring station at Nucor and other representative monitors from similar geographic locations. It was agreed between Nucor and OAQ that this approach would be used.

TABLE 4
Existing Monitoring Data Used For Background Concentrations (ug/m^3)

Pollutant	Averaging Period	Location	Monitoring Site	Monitored Design Values
NO_2	Annual	Montgomery County – Nucor	N/A	11.6
NO_2	1 hour	Montgomery County – Nucor	N/A	45.1
PM_{10}	Annual	Vigo County – Terra Haute	18-167-0018	21.2
PM_{10}	24 hour	Vigo County – Terra Haute	18-167-0018	41.3
$PM_{2.5}$	Annual	Montgomery County – Nucor	N/A	10.6
$PM_{2.5}$	24 hour	Montgomery County – Nucor	N/A	23.7
SO_2	1 hour	Montgomery County – Nucor	N/A	39.3
SO_2	3 hour	Montgomery County – Nucor	N/A	52.4
SO_2	24 hour	Montgomery County – Nucor	N/A	19.2
SO_2	Annual	Montgomery County – Nucor	N/A	3.8
CO	8 hour	Marion County – Indianapolis	18-097-0073	1328.2
CO	1 hour	Marion County – Indianapolis	18-097-0073	2061.0
Pb	3 Month	Marion County – Indianapolis	18-097-0076	.02

Section D – NAAQS and PSD Increment

OAQ supplied emission inventories of all point sources in Indiana within a 50-kilometer radius of Nucor. The NAAQS inventories are generated from EMITS **(**Emission Inventory Tracking System) in accordance with 326 IAC 2-6. The PSD increment inventories include sources that affect the increment and are compiled from permits issued by OAQ. All sources with the potential to cause a significant impact in the vicinity of the proposed facility were explicitly included in the modeling.

NAAQS Compliance Analysis and Results

NAAQs modeling for the appropriate time-averaging periods for NO_2, PM_{10}, $PM_{2.5}$, Pb, and SO_2 was conducted and compared to the respective NAAQs limit. OAQ modeling results are shown in Table 5. All maximum-modeled concentrations were compared to the respective NAAQS limit. All maximum-modeled concentrations during the five years were below the NAAQS limits and no further modeling was required.

TABLE 5[4]
NAAQS Analysis

Pollutant	Year	Time-Averaging Period	Maximum Concentration ug/m3	Background Concentration ug/m3	Total ug/m3	NAAQS Limit ug/m3	NAAQS Violation
NO_2	2007	Annual[1]	7.3	11.6	18.9	100	No
NO_2	2006-2010	1 hour[5]	117.3	45.1	162.4	188.68	No
PM_{10}	2007	Annual[1]	6.6	21.2	27.8	50	No
PM_{10}	2010	24 hour[2]	35	41.3	76.3	150	No
$PM_{2.5}$	2006-2010	Annual[3]	2.0	10.6	12.6	15	No
$PM_{2.5}$	2006-2010	24 hour[3]	10.6	23.7	34.3	35	No
SO_2	2006-2010	1 hour[5]	146.1	39.3	185.4	195.0	No
SO_2	2008	3 Hour[2]	141.9	52.4	194.3	1300	No
SO_2	2008	24 hour[2]	81.9	19.2	101.1	365	No
SO_2	2008	Annual[1]	7.6	3.8	11.4	80	No
Pb	2008	3 month	.007	.02	.027	.15	No

[1] First highest values per U.S. EPA NSR manual October 1990.
[2] High 2nd high values per U.S. EPA NSR manual October 1990.
[3] In accordance with recent U.S. EPA guidance, the highest modeled average over the five years at each receptor. See the March 23, 2010, memorandum.
[4] Any differences between the maximum concentration numbers in Tables 5 and 6 are due to different sources used for the NAAQS and the increment inventories. Table 3 maximum concentrations are from Nucor only.
[5] Based on the new 1-hour design values.

Analysis and Results of Source Impact on the PSD Increment

Applicability

Maximum allowable increases (PSD increments) are established by 326 IAC 2-2-6. This rule also limits a source to no more than 80 percent of the available PSD increment to allow for future growth.

Source Impact

Since Nucor impacts for $PM_{2.5}$, PM_{10}, and NO_2 modeled greater than or equal to significant impact levels, a PSD increment analysis for Nucor was required. Because $PM_{2.5}$ increment values were established in 2010 and the PM_{10} surrogacy policy was removed, the baseline date for the increment is within the last few years. The 1-hour SO_2 and NO_2 have no increment standards.

Results of the increment modeling are summarized in Table 6 below.

TABLE 6[1]
Increment Analysis

Pollutant	Year	Time-Averaging Period	Maximum Concentration μg/m3	PSD Increment μg/m3	Percent Impact on the PSD Increment	Increment Violation
$PM_{2.5}$	2007	24-hour[2]	4.3	9	47.7%	No
$PM_{2.5}$	2010	Annual[3]	.67	4	16.8%	No
PM_{10}	2007	24-hour[2]	28.4	30	See explanation below.	No
PM_{10}	2007	Annual	6.2	17	36.7%	No
NO_2	2007	Annual	7.3	25	29.2%	No
SO_2	2007	Annual	4	20	20%	No
SO_2	2007	24-hour	34.1	91	37.5%	No
SO_2	2006	3-hour	53.1	515	10.3%	No

[1]Any differences between the maximum concentration numbers in Tables 5 and 6 are due to different sources used for the NAAQS and the increment inventories, and different averaging techniques to obtain maximum concentrations. Tables 3 and 6 maximum concentrations are from Nucor only.
[2]In accordance with the Federal Register dated October 20, 2010; the high 2nd high is used.
[3]In accordance with the Federal Register dated October 20, 2010; the highest annual average is used from any of the years modeled.

How PSD increment works

Indiana rules allow an applicant to consume up to 80% of the available PSD increment. The increment for 24-hour PM_{10} averaging period is 30 ug/m^3. If the full increment is available, a source can consume 24 ug/m^3 or 80% of 30 ug/m^3. This leaves 6 ug/m^3 of available increment for future expansions. In theory, a source can never consume all the increment because they can only consume 80% of what is available or what is left over. If 6 ug/m^3 is available, the same source can consume 4.8 ug/m^3 or 80% of the increment for an expansion project. The total increment that now can be consumed by this source is 28.8 ug/m^3. An explanation of Nucor's increment consumption is given below.

Nucor Increment Consumption

Historically, the initial permit for Nucor was subject to PSD review. Over the years, the mill has been subject to additional PSD reviews for mill modifications for PM_{10} sources. Nucor's PSD application for the Castrip facility (dated August 24, 2001), consumed 80% of the available limit, setting the maximum increment consumption at 27.5 ug/m^3. Future PSD permits could then be issued as long as 80% of the remaining available increment was not consumed. The available PSD increment limit would then be 80% of the remaining 2.5 μg/m^3 (2.0 μg/m^3), resulting in a maximum increment consumption of 29.5 μg/m^3. Nucor's next PSD permit application for PM_{10} was dated November 21, 2002. In that permit application, the maximum PM_{10} concentration due to PSD increment consuming sources was 29.4 μg/m^3, which was below the available increment of 29.5 μg/m^3.

In the current PSD permit application, the maximum amount of PM_{10} PSD increment available for consumption is 29.88 μg/m^3 (80% of the remaining 0.6 μg/m^3, added to the previous modeled increment of 29.4 μg/m^3 from the historical dispersion modeling analyses). The maximum predicted 24-hour average PM_{10} PSD increment is 28.4 µg/m^3 as shown in Table 6. This is below the 80% limit of the available increment (29.88 µg/m^3). This concentration (28.4 µg/m^3) sets the baseline for the future calculation of the available PSD increment.

The results of the increment analysis show all pollutants for all averaging periods were below 80% of the available increment. No further analysis is required.

Part E - Secondary Ozone Formation Analysis

Because of the well established relationship between nitrogen oxides (NO_x), volatile organic compounds (VOCs), and the regional transport formation of ozone, U.S. EPA developed the Cross State Air Pollution Rule (CSAPR) to assist states to meet the ozone NAAQS. This rule included extensive modeling to support the emissions reductions necessary in each state to achieve the ozone NAAQS in the eastern U.S. The source category responsible for these reductions is Electric Generating Units (EGUs). While the U.S. Court of Appeals for the D.C. Circuit issued a decision vacating CSAPR on August 21, 2012, the modeling analysis conducted by U.S. EPA is considered valid and will be used for the ozone analysis.

U.S. EPA used a regional model, Comprehensive Air Quality Model with extensions (CAMx), and the Air Quality Assessment Tool (AQAT) to determine levels of emissions reduction from EGUs necessary to achieve the NAAQS at every site. The documentation includes extensive tables showing impacts at all ozone monitors in the eastern U.S. and emission reduction levels necessary to achieve those results. To examine the possible impact of Nucor, results from the modeling U.S. EPA conducted to establish the 2012 and 2014 base case emissions in CSAPR were used for this analysis. The CSAPR website is located at http://www.epa.gov/crossstaterule/techinfo.html.

Information regarding the NO_x emissions modeled for CSAPR can be found in the "EmissionsSummaries.xlsx" spreadsheet under the Emissions Inventory Final Rule TSD section at U.S. EPA's CSAPR website for technical information http://www.epa.gov/crossstaterule/techinfo.html. The spreadsheet shows the base case annual NO_x emissions for Indiana in 2012 at 455,325 tons and base case annual NO_x emissions by 2014 at 431,342 tons. Indiana's total NO_x emission reduction between these scenarios totals 23,983 tons. All surrounding states make similar significant reductions. Nucor's proposed emissions would be 688.0 tons per year of NO_x and 267.1 tons per year of VOCs for a total of 955.1 tons per year of NO_x and VOCs from Nucor.

8-Hour Ozone Modeling Results

The nearest ozone monitor to Nucor, located in Montgomery County, is the Whitestown ozone monitor in Boone County, considered downwind of Nucor. The current design value for 2010-2012 at the Whitestown ozone monitor is 70 parts per billion (ppb), below the 8-hour NAAQS of 75 ppb. The U.S. EPA CSAPR results show the maximum modeled 8-hour ozone concentration for Boone County is 73.4 ppb for the 2012 base case and 71.7 ppb for the 2014 base case. This is a decrease of 1.7 ppb as a result of NO_x emission adjustments between 2012 and 2014 base case emission calculations. In order for this modeled 8-hour ozone concentration reduction to occur, Indiana's 2014 NO_x emissions were reduced from the 2012 base case emissions by 23,983 tons. The Boone County monitoring site is not necessarily impacted by every EGU in Indiana, but in the surrounding states, thousands of tons of annual NO_x emission reductions are projected to occur by 2014, many of which would impact this site. Therefore, to estimate the impact of Nucor on modeled concentrations, the ratio of Nucor's NO_x and VOC emissions to Indiana's 2012 to 2014 base case NO_x emission reduction was calculated. This ratio was then compared to the modeled ozone impact from the difference between the CSAPR 2012 and 2014 base case modeling results.

(1) **955.1 tons** Nucor NO_x and VOC emissions / **23,983 tons** of Indiana's NO_x base case emissions reduced from 2012 to 2014 = **3.98%** ratio of Nucor's NO_x and VOC emissions compared to Indiana's NO_x emissions

(2) **3.98%** Nucor emission ratio *** 1.7 ppb** maximum 8-hour 2012 to 2014 Base Case modeled results for Boone County = **0.068 ppb** of Nucor 8-hour ozone impact

(3) **0.068 ppb** of Nucor 8-hour ozone impact / **71.7 ppb** at Boone County ozone monitor from 2014 base case maximum modeled results = **0.1%** Nucor's impact on the 2014 base case modeled concentration.

Tables are located in CSAPR_AQModeling.pdf, Appendix B, pages B-10 and B-12 for 8-hour ozone design values that show the base case 2012 ozone concentrations at surrounding monitoring sites versus projected base case 2014 ozone concentrations. 2012 Base Case represents modeled results taken from the 2012 and 2014 Base Case emissions, represents the 2014 Base emissions with emissions projections factored into the modeling. Table 7 below shows the CSAPR modeling results for the Boone County monitor and the potential impact from Nucor.

Table 7
EPA's Cross-State Air Pollution Rule - 8-Hour Ozone Modeling Results

Monitor ID	County	2012 Base (ppb)	2014 Base (ppb)	2012 - 2014 Base (ppb)	Anticipated Source Impact (ppb)	Source Impact on 2014 Base Results (%)
180110001	Boone	73.4	71.7	1.7	0.067	0.098%
181090005	Morgan	71.7	70.2	1.5	0.060	0.080%
180630004	Hendricks	68.9	67.4	1.5	0.060	0.089%
180150002	Carroll	67.3	65.7	1.6	0.063	0.092%
181670024	Vigo	67.2	66.4	0.8	0.032	0.046%

Summary of Ozone Results

Nucor's NO_x and VOC emissions were compared with the U.S. EPA CSAPR modeling for 8-hour ozone to determine what impacts may occur as a result of ozone formation. When Nucor emissions were compared with the amount of NO_x emission reductions realized from emission estimates associated with base case emissions for CSAPR and compared with CSAPR modeling results for 8-hour ozone, the impacts from Nucor on the Whitestown ozone monitor in Boone County are anticipated to be minimal and not have a significant impact on the attainment status of Boone County and any surrounding counties, including Montgomery County.

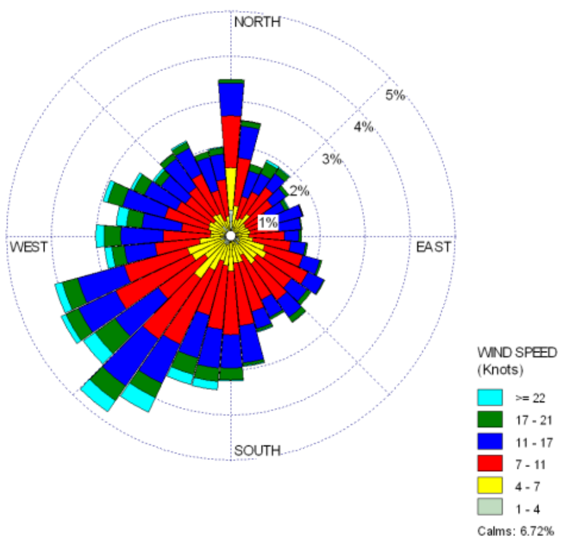
Part F - Secondary $PM_{2.5}$ Formation Analysis

In addition to direct emissions of $PM_{2.5}$; other pollutants, chiefly NO_x and SO_2, can lead to formation of $PM_{2.5}$ further downwind. The photochemical reactions that transform these pollutants into particulate nitrates and sulfates, which become the major species of $PM_{2.5}$, take place over hours or days. Dispersion modeling for these two primary pollutants shows that concentrations are below Significant Impact Levels (SIL) for their respective NAAQS and further diminish within the modeling domain of 50 km. Since the NO_x and SO_2 standards are extremely restrictive, a typical source being below the SILs would likely prevent the pollutants from impacting secondary formation significantly enough to result in a violation of the $PM_{2.5}$ standards.

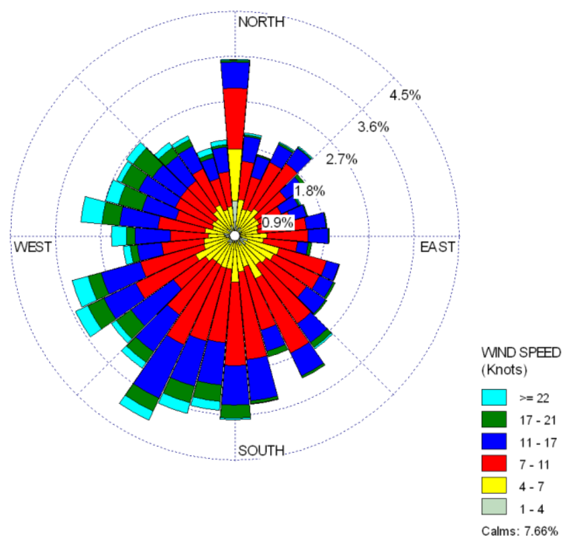
However, it is possible that some transformation into nitrates and sulfates from this source may occur and be transported downwind. No peer-reviewed regulatory model presently exists to examine the photochemical impacts of an individual source of SO_2 and NO_x. All photochemical models are regional scale and a source of this size would not show any measurable impact. Therefore, other available information from emissions inventories, meteorological analyses, and other modeling projects can be used to estimate the impact from this source.

The nearest active $PM_{2.5}$ monitor to Nucor is the Greenbush Street monitor in Tippecanoe County. The 2011 and 2012 wind roses taken from the Indianapolis International Airport in Indianapolis, Marion County shows the winds typically blow from the southwest and west. Nucor would be considered upwind of the Greenbush Street monitor. Nucor submitted data from October 2010 through September 2011 from their on-site monitoring station. Since the Nucor on-site monitoring data was collected for only 12 months, a three-year design value could not be established. However, the analysis will be conducted on this monitoring data as well as the Greenbush St. monitoring data.

Indianapolis 2011



Indianapolis 2012



The 2009 – 2011 annual $PM_{2.5}$ design value at the Greenbush St. monitor in Tippecanoe County is 11.0 µg/m^3, well below the annual $PM_{2.5}$ NAAQS of 15.0 µg/m^3. The 2009 – 2011 24-hour $PM_{2.5}$ design value at the Greenbush St. monitor is 24.0 µg/m^3, below the 24-hour $PM_{2.5}$ NAAQS of 35.0 µg/m$^{3.}$ The Nucor on-site monitoring data was collected from October 2010 through September 2011 so a three-year 24-hour $PM_{2.5}$ design value could not be established. The annual monitoring value at the Nucor $PM_{2.5}$ monitor was 10.6 µg/m^3 and the 24-hour monitored value was 23.7 µg/m^3.

Secondary $PM_{2.5}$ Weight of Evidence Analysis based on EPA's CSAPR Modeling

Because of the established relationship between NO_x and SO_2, and the regional transport and formation of $PM_{2.5}$, CSAPR was also intended to assist states to meet the $PM_{2.5}$ NAAQS. This rule included extensive modeling to support the emissions reductions necessary in each state to achieve the $PM_{2.5}$ NAAQS in the eastern U.S. While the U.S. Court of Appeals for the D.C. Circuit issued a decision vacating CSAPR on August 21, 2012, the modeling analysis conducted by U.S. EPA is considered valid and will be used for the secondary $PM_{2.5}$ analysis.

U.S. EPA used a regional model, CAMx, and AQAT to determine levels of reduction from EGUs necessary to achieve the NAAQS at every site. The documentation includes extensive tables showing impacts at all $PM_{2.5}$ monitoring sites in the eastern U.S. and emission reduction levels necessary to achieve those results. To examine the possible impact of Nucor, results from the modeling U.S. EPA conducted to establish the final 2014 budgets in CSAPR and were used for this analysis. The CSAPR website is located at http://www.epa.gov/crossstaterule/techinfo.html.

Information regarding SO_2 and NO_x emission reductions necessary to achieve the future year modeled design values can be found in the "EmissionsSummaries.xlsx" spreadsheet under the Emissions Inventory Final Rule TSD section at U.S. EPA's CSAPR website for technical information: http://www.epa.gov/crossstaterule/techinfo.html. The spreadsheet shows the base case annual SO_2 and NO_x emissions for Indiana in 2012 and 2014. Indiana's total SO_2 and NO_x emission reductions between these two base case scenarios are 89,222 tons, summarized in Table 8 below. All surrounding states make similar significant reductions. Potentials to emit after controls for Nucor are 688.0 tons per year of NO_x and 552.6 tons per year of SO_2 for a total of 1,240.6 tons per year of NO_x and SO_2 emissions.

Table 8
EPA's Cross-State Air Pollution Rule Emission Summary for Indiana

	Pollutant	2012 Base Case Emissions (tons/year)	2014 Base Case Emissions (tons/year)	2012-2014 Difference (tons/year)
Indiana	SO_2	929,162	863,923	65,239
Indiana	NO_x	455,325	431,342	23,983
TOTAL				**89,222**

Annual $PM_{2.5}$ Modeling Results

The latest annual $PM_{2.5}$ design value (2009-2011) for the nearest $PM_{2.5}$ monitor to Nucor is the Greenbush St. monitor in Tippecanoe County is 11.0 µg/m^3. The maximum annual $PM_{2.5}$ modeled concentration for the Greenbush St. $PM_{2.5}$ monitor is 12.87 µg/m^3 for the 2012 base case and 12.42 µg/m^3 for the 2014 base case results. This is a decrease of 0.45 µg/m^3. Indiana's 2014 SO_2 emissions from EGUs were adjusted by 65,239 tons from the 2012 base case emissions and 2014 NO_x emissions were reduced by 23,983 for a total of 89,222 tons of SO_2 and NO_x. This particular monitoring site is not necessarily impacted by every EGU in Indiana, but in the surrounding states, hundreds of thousands of tons of annual SO_2 and NO_x emission reductions would occur by 2014, many of which would impact the Tippecanoe County monitor. Therefore, to estimate Nucor's impact on modeled concentrations, the ratio of Nucor's SO_2 and NO_x emissions to Indiana's SO_2 and NO_x decreases from 2012 and 2014 base case CSAPR emissions was calculated. This ratio was then compared to the modeled annual $PM_{2.5}$ impact from the difference between the CSAPR 2012 and 2014 base case annual $PM_{2.5}$ modeling results.

(1) **1240.6 tons** Nucor's SO_2 and NO_x emissions / **89,222** tons of SO_2 and NO_x emissions reduced through CSAPR modeling = 1.362%

(2) **1.39%** Nucor SO_2/NO_x emission ratio *** 0.45 µg/m^3** modeled annual $PM_{2.5}$ CSAPR results = **0.0063 µg/m^3** of Nucor annual $PM_{2.5}$ impact

(3) **0.0063 µg/m^3** Nucor's annual $PM_{2.5}$ impact /**12.42 µg/m^3** of 2014 Base Case annual $PM_{2.5}$ **modeled** results = **0.055%** Nucor's impact on the 2014 modeled Base Case annual $PM_{2.5}$ results.

Tables showing projected base case 2014 $PM_{2.5}$ concentrations at existing monitoring sites versus control strategy $PM_{2.5}$ concentrations are located in CSAPR_AQModeling.pdf, Appendix B, pages B-41 and B-42 for annual design values and pages B-70 to B-72 for 24-hour design values. 2014 Base represents anticipated 2014 emissions. Table 9 below shows the CSAPR annual $PM_{2.5}$ modeled concentrations at the Tippecanoe County $PM_{2.5}$ monitor and surrounding monitors. Nucor's anticipated impacts on those monitors and the Nucor on-site monitoring station are below 0.007 µg/m^3.

Table 9
EPA's Cross-State Air Pollution Rule - Annual $PM_{2.5}$ Modeling Results

Monitor ID	County	2012 Base	2014 Base	2012 - 2014 Base (µg/m^3)	Anticipated Source Impact (µg/m^3)	Source Impact on 2014 Base Case Results (%)
Nucor	Montgomery	10.6 *	N/A	N/A	0.0065 **	0.063% ***
181570008	Tippecanoe	12.87	12.42	0.45	0.0061	0.055%
180970081	Marion	15.16	14.65	0.51	0.0069	0.061%

* Monitored value from October 2010 to September 2011 – does not represent 3-year design value
** Source impact based on U.S. EPA's CSAPR averaged modeled impacts from surrounding $PM_{2.5}$ monitors
*** Source impact on the annual value from October 2010 to September 2011

24-Hour $PM_{2.5}$ Modeling Results

The same emissions and impact analysis methodology used for the annual $PM_{2.5}$ impacts were used to determine the 24-hour $PM_{2.5}$ impacts from Nucor. The latest 24-hour $PM_{2.5}$ design value (2009-2011) for the nearest $PM_{2.5}$ monitor to Nucor is from the Greenbush Street monitor in Tippecanoe County and is 24.0 µg/m^3. The maximum 24-hour $PM_{2.5}$ modeled concentration for the Greenbush St. $PM_{2.5}$ monitor is 33.9 µg/m^3 for the 2012 base case and 32.1 µg/m^3 for the 2014 base case. This is a reduction of modeled concentration of 1.8 µg/m^3. To estimate the 24-hour impact of Nucor on modeled concentrations, the ratio of Nucor SO_2 and NO_x emissions and the CSAPR SO_2 and NO_x emission reductions was calculated. This ratio was then compared to the modeled 24-hour $PM_{2.5}$ impact from the difference between the CSAPR 2012 and 2014 base case 24-hour $PM_{2.5}$ modeling results.

(1) **1,240.6 tons** Nucor SO_2 and NO_x emissions / **89,222 tons** of SO_2 and NO_x emissions reduced through CSAPR modeling = **1.39%**

(2) **1.39%** Nucor SO_2/NO_x emission ratio *** 1.8 µg/m^3** modeled 24-hour $PM_{2.5}$ CSAPR results = **0.025 µg/m^3** of Nucor 24-hour PM2.5 impact

(3) 0.**025 µg/m^3** Nucor 24-hour $PM_{2.5}$ impact /**32.1 µg/m^3** of 2014 Base Case 24-hour $PM_{2.5}$ modeled results = **0.070%** Nucor's impact on the 2014 modeled Base Case 24-hour $PM_{2.5}$ concentration.

Modeling results below in Table 10 show 2012 and 2014 Base Case modeled 24-hour concentrations and the anticipated Nucor impacts, based on the emissions comparison and estimated impacts. Estimated impacts on the Nucor $PM_{2.5}$ monitoring site show an impact less than 0.03 µg/m^3 from the Nucor emissions from the PSD modification. Surrounding $PM_{2.5}$ monitors realize even less impact on $PM_{2.5}$ concentrations.

Table 10
EPA's Cross-State Air Pollution Rule - 24-Hour $PM_{2.5}$ Modeling Results

Monitor ID	County	2012 Base	2014 Base	2012 - 2014 Base ($\mu g/m^3$)	Anticipated Source Impact ($\mu g/m^3$)	Source Impact on 2014 Base Case Results (%)
Nucor	Montgomery	23.7 *	N/A	N/A	0.0232 **	0.098% ***
181570008	Tippecanoe	33.9	32.1	0.45	0.0245	0.069%
180970081	Marion	36.9	35.1	0.51	0.0245	0.07%

* Monitor operated from October 2010 to September 2011 – does not represent 3-year design value
** Source impact based on U.S. EPA's CSAPR averaged modeled impacts from surrounding $PM_{2.5}$ monitors
*** Source impact on the annual value from October 2010 to September 2011

Summary Annual and 24-Hour $PM_{2.5}$

Nucor's SO_2 and NO_x emissions were compared with U.S. EPA CSAPR modeling for annual and 24-hour $PM_{2.5}$ to determine what impacts of $PM_{2.5}$ may occur as a result of secondary $PM_{2.5}$ formation. When the Nucor emissions were compared with the amount of SO_2 and NO_x emission reductions realized from the CSAPR modeling analysis, and then compared with CSAPR modeling results for annual and 24-hour, the impacts from Nucor on the nearest $PM_{2.5}$ monitor is anticipated to be minimal and will not have an effect on the attainment status of any $PM_{2.5}$ monitors in the area.

Part G – Qualitative Analysis

Additional Impact Analysis

All PSD permit applicants must prepare an additional impact analysis for each pollutant subject to regulation under the Act. This analysis assesses the impacts on growth, soils and vegetation, endangered species, and visibility caused by any increase in emissions of any regulated pollutant from the source. The Nucor modeling submittal provided an additional impact analysis performed by ERM.

Economic Growth

The purpose of the growth analysis is to quantify project associated growth and estimate the air quality impacts from this growth either quantitatively or qualitatively.

It is estimated that minimal additional jobs will be created as a result of the proposed project. Most of the employees will be drawn from surrounding areas. Since the area is predominately rural, it is not expected the growth impacts will cause a violation of the NAAQS or the PSD increment.

Soils and Vegetation Analysis

A list of soil types present in the general area was determined. Soil types include the following: Loamy Glacial Till, Moderate Thick Loess over Loamy Glacial Till and thin Loess over Glacial Till.

Due to the agricultural nature of the land, crops in the Montgomery County area consist mainly of corn, sorghum, wheat, soybeans, and oats (2002 Agricultural Census for Montgomery County). The maximum modeled concentrations for Nucor are well below the threshold limits necessary to have adverse impacts on the surrounding vegetation such as autumn bent, nimblewill, barnyard grass, bishopscap and horsetail, and milkweed (Flora of Indiana – Charles Deam). Livestock in Montgomery

County consist mainly of hogs, cattle, and sheep (2002 Agricultural Census for Montgomery County) and will not be adversely impacted from the facility. Trees in the area are mainly hardwoods. These are hardy trees and no significant adverse impacts are expected due to modeled concentrations.

Federal and State Endangered Species Analysis

Federal and state endangered or threatened species are listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana. Of the federal and state endangered species on the list, 2 reptiles, 4 mollusks, 13 birds, and 4 mammals have habitat within Montgomery County. The mollusks and certain species of birds and mammals are found along rivers and lakes while the other species of birds, mammals, and reptiles are found in forested areas. The facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial, farming, and residential activities in the area.

Federal and state endangered or threatened plants are listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana. At this time 15 endangered, threatened, or rare plant species are found in Montgomery County. The endangered plants do not thrive in industrialized and residential areas. The facility is not expected to adversely affect any plant on the endangered species list.

Visibility Analysis

The VISCREEN model is designed as a screening model to determine the visual impact parameters from a single source plume. It is used basically to determine whether or not a plume is visible as an object itself. The visibility impairment analysis considers the impacts that occur within the impact area of the source as defined by the user distances. The user distances are determined by the nearest interstate or airport. EPA has defined these locations in guidance to the state.

The PM_{10} and NO_2 emissions limits were used to run a local visibility Level 1 analysis. VISCREEN Version 1.01 was used to determine if the color difference parameter (Delta-E) or the plume (green) contrast limits were exceeded. The Delta-E was developed to specify the perceived magnitude of color and brightness changes and is used as the primary basis for determining the perceptibility of plume visual impacts. The plume constant can be defined at any wavelength as the relative difference in the intensity (called spectral radiance) between the viewed object and its background. This is used to determine how the human eye responds differently to different wavelengths of light. The Delta-E of 2.0 and the plume contrast of 0.05 were not exceeded at the nearest interstate location along I-74 or at the Crawfordsville Municipal Airport.

Potential visibility impacts to Mammoth Cave National Park (further than 400 km from Nucor) were examined. The Federal Land Managers' Q/D initial screening test was performed to determine if additional Class I air quality related values (AQRV) analysis was needed. Q is the annual emissions in tons per year divided by the distance in kilometers. The screening test showed Nucor was below the screening value of 10 which determines no further Class I AQRV was required.

Additional Analysis Conclusions

Finally, the results of the additional impact analysis conclude the operation of the facility will have no significant adverse impact on economic growth, soils, vegetation, or visibility in the immediate vicinity or on any Class I area.

Part H – HAPs Analysis

OAQ currently requests data concerning the emission of 189 HAPs listed in the 1990 Clean Air Act Amendments (CAAA) that are either carcinogenic or otherwise considered toxic and may be used by industries in the State of Indiana. These substances are listed as air toxic compounds on the State of Indiana, Department of Environmental Management, Office of Air Quality's construction permit application Form GSD-08.

For Nucor, a full HAP analysis was completed comparing the maximum estimated concentrations of each pollutant with the Unit Risk Factor (URF) or the Inhalation Unit Risk, and the Reference Concentration (RfC). This analysis offers a refined, up to date site specific analysis that takes into account the different potencies and health effects that each pollutant presents to the public.

The URF is the upper-bound excess lifetime cancer risk estimated to result from continuous inhalation exposure to a pollutant over a 70 year lifetime. Multiplying the estimated concentration by the URF will produce a cancer risk estimate. The cancer risk estimate is the conservative probability of developing cancer from exposure to a pollutant or a mixture of pollutants over a 70 year lifetime, usually expressed as the number of additional cancer cases in a given number of people, e.g., one in a million. For screening purposes at Nucor, the cancer estimates for each pollutant are considered to be additive when deriving the cumulative maximum individual cancer risk.

Non-cancer health effects are determined using the Reference Concentration. The RfC is an estimate of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Dividing the estimated pollutant concentration by the RfC will determine the pollutant’s Hazard Quotient (HQ). All of the HAPs’ Hazard Quotients were added together to determine Nucor’s Hazard Index (HI).

This HAP screening analysis uses health protective assumptions that overestimate the actual risk associated with emissions from Nucor. Estimates 1) assume a 70 year exposure time, 2) assume that all carcinogens cause the same type of cancer, 3) assume that all non-carcinogens have additive health effects, 4) assume maximum permit allowable emissions from the facility, and 5) use conservatively derived dose-response information. The risk analysis cannot accurately predict whether there will be observed health problems around Nucor; rather it identifies possible avenues of risk.

The results of the HAP modeling are in Table 11.

TABLE 11
Hazardous Air Pollutant Modeling Results

Compound	CAS Number	Annual Concentration (ug/m3)	Cancer URF, (ug/m3)-1	Source	Cancer Risk	Non-Cancer Chronic RfC, ug/m3	Source of IDEM RfC Source	Hazard Quotient
Antimony Compounds	0	**0.0000100000**				0.20	TRI	0.000
Arsenic compounds	0	**0.0000300000**	4.3E-03	IRIS	1.29E-07	0.03	CAL	0.001
Beryllium compounds	0	**0.0000010000**	2.4E-03	IRIS	2.40E-09	0.02	IRIS	0.000
Cadmium compounds	7440439	**0.0000300000**	1.8E-03	IRIS	5.40E-08	0.02	CAL	0.002
Chromium (VI) compounds	18540299	**0.0001600000**	1.2E-02	IRIS	1.92E-06	0.10	IRIS	0.002
Cobalt	0	**0.0000100000**				0.10	ATSDR	0.000
Manganese compounds	0	**0.0012900000**				0.05	IRIS	0.026
Mercury compounds	0	**0.0000400000**				0.09	CAL	0.000
Nickel compounds	0	**0.0000500000**	2.4E-04	IRIS	1.20E-08	0.20	ATSDR	0.000
Phosphorous	7723140	**0.0003000000**				0.07	CAL	0.004
Selenium compounds	0	**0.0000010000**				20.00	CAL	0.000
				Total Cancer Risk	2.1174E-06		**Hazard Index (HI)**	0.0351

* Further information on URFs and RfCs can be found at the following U.S. EPA web site:
http://www.epa.gov/ttn/atw/toxsource/chronicsources.html

The Hazard Index for the project does not exceed 1. Pollutants with a HQ greater than 1 are considered to be at concentrations that could represent a health concern. Hazard Quotients above 1 do not represent areas where adverse health effects will be observed but indicate that the potential exists.

The additive cancer risk estimate is 2.1 additional cancer causes in one million people. This means if an individual was exposed to these HAPs continuously for 70 years, the risk of getting cancer from this exposure would be 2.1 in one million. The U.S. EPA considers one in ten thousand (1.0E-04) excess cancer risks to be the upper range of acceptability with an ample margin of safety. The probability for the general public to be exposed to this HAP for 24 hours a day, seven days a week, and 52 weeks a year for 70 years is minimal.

For this HAP risk assessment, IDEM assumed 100% of the chromium VI stayed in hexavalent form. Studies show through chemical reactions chromium VI will be reduced to chromium III in the ambient air. The 1996 National Air Toxics Assessment (NATA) assumed that only 34% of the emissions from coke plants are chromium VI. This determination was an arbitrary determination deemed to be conservative. The Michigan Department of Environmental Quality set up monitors with the purpose of determining the speciation of chromium VI to chromium III in the ambient air. Several of their monitor locations were within 2 miles of a coke plant. They found a range of 0.6-2.4% chromium VI in their sampling. The residual risk document for coke ovens published in December 2003 determined that since the formation of the chromium took place in a highly reducing environment that 0% of the chromium emitted would be in the hexavalent phase.

Part I - Summary of Air Quality Analysis

ERM prepared the modeling portion of the PSD application. Montgomery County is designated as attainment for all criteria pollutants. PM_{10}, NO_2, SO_2, CO, $PM_{2.5}$, and Pb emission rates associated with the proposed facility exceeded the respective significant emission rates. Modeling results taken from AERMOD model showed PM_{10}, NO_2, SO_2, and $PM_{2.5}$ impacts were predicted to be greater than the significant impact levels. Nucor did trigger the preconstruction monitoring threshold level but can satisfy the preconstruction monitoring requirement since Nucor had existing air quality monitoring data and there is representative data of that area from Indiana's monitoring network. The NAAQS modeling showed no violations of the standard. Nucor was below eighty percent of available increment modeling. Secondary $PM_{2.5}$ and ozone formation will be below measureable values. The nearest Class I area is Mammoth Cave National Park in Kentucky, just over 400 kilometers away from the source, but emissions are below the Federal Land Manager guidance screening threshold. An additional impact analysis was performed and the operation of the proposed facility will have no significant impact. A HAP analysis was performed and showed no likely adverse impact.

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

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: David Sulc
Nucor Steel
4357 South Nucor Road
Crawfordsville, Indiana 47933

DATE: September 17, 2013

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

SUBJECT: Final Decision
PSD/Significant Source Modification to Title V
107-32615-00038

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Ronald Dickerson, VP / Nucor Steel
Herbert Weidemann / Environmental Resources Management
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

September 17, 2013

TO: Crawfordsville District Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Nucor Steel
Permit Number: 107-32615-00038

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO:	Interested Parties / Applicant
DATE:	September 17, 2013
RE:	Nucor Steel / 107-32615-00038
FROM:	Matthew Stuckey, Branch Chief Permits Branch Office of Air Quality

In order to conserve paper and reduce postage costs, IDEM's Office of Air Quality is now sending many permit decisions on CDs in Adobe PDF format. The enclosed CD contains information regarding the company named above.

This permit is also available on the IDEM website at:
http://www.in.gov/ai/appfiles/idem-caats/

If you would like to request a paper copy of the permit document, please contact IDEM's central file room at:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

Please Note: *If you feel you have received this information 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.*

Enclosures
CD Memo.dot 6/13/2013

Mail Code 61-53

IDEM Staff	AWELLS 9/17/2013 Nucor Steel 107-32615-00038 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**	

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1		David A Sulc Nucor Steel 4537 S Nucor Rd Crawfordsville IN 47933 (Source CAATS) confirmed delivery									
2		Ronald Dickerson VP / 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		Sowders Resident 605 Whitlock Ave. Crawfordsville IN 47933 *(Affected Party)*									
8		Montgomery County Health Department 110 W. South Blvd Suite 100 Crawfordsville IN 47933-3351 *(Health Department)*									
9		Mr. Chet Parsons 512 E Main Street Ladoga IN 47954 *(Affected Party)*									
10		Ms. Cheryl Cunningham 512 E Main Street Ladoga IN 47954 *(Affected Party)*									
11		Mr. Herbert Wendemann 25 W 130 Setauket Ave Naperville IL 60540 *(Affected Party)*									
12		Paul Sutton 9634 E. 150 N. Darlington IN 47940 *(Affected Party)*									
13		Mr. Robert Ford RR 1, Box 233 New Ross IN 47968 (Affected Party)									
14		June Truax 3750 US 136 E Crawfordsville IN 47933 *(Affected Party)*									
15		Judy Goshorn 6836 South Ladoga Road Ladoga IN 47954 *(Affected Party)*									

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1		Magie Read P.O. Box 248 Battle Ground IN 47920 (Affected Party)									
2		Montgomery County Commissioner 110 West South Boulvard Crawfordsville IN 47933 *(Local Official)*									
3		Crawfordsville District Public Library 205 South Washington Street Crawfordsville IN 47933 *(Library)*									
4		Mr. Herbert Weidemann Environmental Resources Management (ERM) One Continental Towers, 1701 Golf Road Suite 1000 Rolling Meadows IL 60540 *(Consultant)*									
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