Indiana Department of Environmental Management
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Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

Amber Carter
Nucor Steel
4537 S. Nucor Road
Crawfordsville, IN 47933

Re: 107-47704-00038
Significant Permit Modification

Dear Amber Carter:

Nucor Steel was issued Part 70 Operating Permit Renewal No. T107-45287-00038 on January 24, 2024, for a stationary steel mini-mill located at 4537 S. Nucor Road, Crawfordsville, IN 47933. An application requesting changes to this permit was received on March 7, 2024. Pursuant to the provisions of 326 IAC 2-7-12, a Significant Permit Modification to this permit is hereby approved as described in the attached Technical Support Document.

Please find attached the entire Part 70 Operating Permit as modified, including the following revised attachments:

Attachment E: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ]
Attachment G: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart IIII]

The permit references the below listed attachments. Since these attachments have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this modification:

Attachment A: Fugitive Dust Control Plan
Attachment B: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Dc]
Attachment C: Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 [40 CFR 60, Subpart AAa]
Attachment D: National Emission Standards for Hazardous Air Pollutants for Steel Pickling—HCl Process Facilities and Hydrochloric Acid Regeneration Plants [40 CFR 63, Subpart CCC]
Attachment F: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters [40 CFR 63, Subpart DDDDD]
Attachment H: Standards of Performance for Metal Coil Surface Coating [40 CFR 60, Subpart TT]
Attachment I: National Emission Standards for Hazardous Air Pollutants for Major Sources: Surface Coating of Metal Coil [40 CFR 63, Subpart SSSS]
Attachment J: National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products [40 CFR 63, Subpart MMMM]
Attachment K: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines [40 CFR 60, Subpart JJJJ]

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

Previously issued approvals for this source are also available via IDEM's Virtual File Cabinet (VFC). To access VFC, please go to: https://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria.

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

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. A copy of the application and permit is also available via IDEM's Virtual File Cabinet (VFC). To access VFC, please go to: https://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/public-participation/; and the Citizens' Guide to IDEM on the Internet at: https://www.in.gov/idem/resources/citizens-guide-to-idem/.

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

If you have any questions regarding this matter, please contact Aasim Noveer, 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) 234-1243 or (800) 451-6027, and ask for Aasim Noveer or (317) 234-1243.

Sincerely,

Brian Williams, Section Chief
Permits Branch
Office of Air Quality

Attachments: Modified Permit and Technical Support Document
cc: File - Montgomery County
Montgomery County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch

Part 70 Operating Permit
OFFICE OF AIR QUALITY

Nucor Steel
4537 S. Nucor Road
Crawfordsville, Indiana 47933

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

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

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

Operation Permit No.: T107-45287-00038 Master Agency Interest ID.: 12021	
Issued by: Original signed by: Brian Willams, Section Chief Permits Branch, Office of Air Quality	Issuance Date: January 24, 2024 Expiration Date: January 24, 2029

Significant Source Modification No. 107-46841-00038, issued on February 16, 2024.
Significant Permit Modification No. 107-47380-00038, issued on March 6, 2024.

Significant Permit Modification No.: 107-47704-00038	
Issued by: Brian Willams, Section Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date: January 24, 2029

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.5 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

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

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

Source Address:	4537 S. Nucor Road, Crawfordsville, Indiana 47933
General Source Phone Number:	(765) 364-1323
SIC Code:	3312 Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills
County Location:	Montgomery
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

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

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

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

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

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

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

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

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

D.1 – RESERVED

D.2 –RESERVED

D.3 – RESERVED

D.4 – RESERVED

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

D.6 – WASTEWATER TREATMENT PLANT

(a) 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.

(b) 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.

(c) 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.

(d) 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

(a) 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 700 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. The emissions unit consists of the following:

(1) One (1) front end loader, identified as FEL, constructed in 2015, with a maximum throughput of 700 tons per hour.

(2) One (1) Grizzly hopper with vibrating feeder, identified as Grizzly, with a maximum throughput of 700 tons per hour, constructed in 2016.

(3) One (1) feeder, identified as Syn Feeder, constructed in 2016, with a maximum throughput of 1,000 tons per hour.

(4) One (1) storage pile, identified as OS #1.

(5) One (1) belt conveyor, identified as Belt Conveyor #10, constructed in 2016, with a maximum throughput of 600 tons per hour.

(6) One (1) magnetic separator, identified as MAG #1, constructed in 2011, with a maximum throughput of 100 tons per hour.

(7) One (1) storage pile, identified as M #1.

(8) One (1) magnetic separator, identified as MAG #4, constructed in 2016, with a maximum throughput of 100 tons per hour.

(9) One (1) magnetic separator, identified as MAG #2, constructed before 2011, with a maximum throughput of 100 tons per hour.

(10) One (1) storage pile, identified as M #2.

(11) One (1) screen, identified as TSP-2, constructed in 2011, with a maximum rated capacity of 400 tons per hour.

(12) One (1) belt conveyor, identified as Belt Conveyor #9, constructed before 2011, with a maximum throughput of 600 tons per hour.

(13) One (1) magnetic separator, identified as MAG #3, constructed before 2011, with a maximum throughput of 100 tons per hour.

(14) One (1) storage pile, identified as M #3.

(15) One (1) crusher, identified as TSP-6, approved in 2010 for construction and approved in 2011 for modification, with a maximum capacity of 430 tons per hour.

(16) One (1) belt conveyor, identified as Belt Conveyor #11, constructed in 2016, with a maximum throughput of 600 tons per hour.

(17) One (1) belt conveyor, identified as Belt Conveyor #8, constructed in 2016, with a maximum throughput of 600 tons per hour.

(18) One (1) conveyor, identified as Conv #7, constructed before 2011, with a maximum throughput of 600 tons per hour.

(19) One (1) screening process consisting of three (3) screeners, identified as TSP-8, approved in 2011 and 2013 for modification, with a maximum capacity of 600 tons per hour.

(20) Four (4) shutes, identified as shutes F, G, H, and I, each with a maximum capacity of 600 tons per hour.

(21) One (1) conveyor, identified as LG Conv #4, constructed before 2011, with a maximum throughput of 600 tons per hour.

(22) One (1) magnetic separator, identified as MAG #6, constructed before 2011, with a maximum capacity of 100 tons per hour.

(23) One (1) storage pile, identified as M #6.

(24) One (1) radial stacker, identified as Radial Stacker #S4, constructed before 2011, with a maximum throughput of 600 tons per hour.

(25) Two (2) storage piles, identified as S #3.

(26) One (1) cone crusher, identified as Cone Crusher, constructed before 2011, with a maximum capacity of 600 tons per hour.

(27) One (1) conveyor, identified as Conv #2B, constructed before 2011, with a maximum throughput of 600 tons per hour.

(28) One (1) conveyor, identified as Conv #2A, constructed before 2011, with a maximum throughput of 600 tons per hour.

(29) One (1) conveyor, identified as LG Conv #5, constructed before 2011, with a maximum throughput of 600 tons per hour.

(30) One (1) magnetic separator, identified as MAG #7, constructed before 2011, with a maximum throughput of 100 tons per hour.

(31) One (1) storage pile, identified as M #7.

(32) One (1) radial stacker, identified as Radial Stacker #S5, constructed before 2011, with a maximum throughput of 600 tons per hour.

(33) Two (2) storage piles, identified as S #2.

(34) One (1) conveyor, identified as Conv #2, constructed before 2011, with a maximum throughput of 600 tons per hour.

(35) One (1) magnetic separator, identified as MAG #5, constructed before 2011, with a maximum capacity of 100 tons per hour.

(36) One (1) storage pile, identified as M #5.

(37) One (1) radial stacker, identified as Radial Stacker #S1, constructed before 2011, with a maximum throughput of 600 tons per hour.

(38) One (1) storage pile, identified as S #1.

The following units have historically been identified as part of EU-10, but are separate from the above operation.

(39) One (1) portable screen operation, constructed prior to 2011, consisting of the following:

(A) One (1) portable screen, identified as 15" slanted Grizzly, with a maximum throughput of 400 tons per hour.

(B) Two (2) storage piles associated with 15" slanted Grizzly.

(C) One (1) portable screen, identified as 12" slanted Grizzly, with a maximum throughput of 400 tons per hour.

(D) Two (2) storage piles associated with 15" slanted Grizzly.

(E) One (1) portable screen, identified as 3" slanted Grizzly, with a maximum throughput of 400 tons per hour.

(F) Two (2) storage piles associated with 15" slanted Grizzly.

(40) Two (2) drop ball operations, identified as DB#1 and DB#2constructed prior to 2011, each with a maximum throughput of 20 tons per hour.

(b) Blend Plant, approved in 2011 for construction, with a maximum rated capacity of 305 tons per hour. The Blend Plant will further process the various materials streams from the existing Slag Operation EU-10 to produce various blends of slag products.

(1) One (1) front end loader, identified as BP-FEL-1, approved in 2011 for construction, with a maximum throughput of 600 tons per hour.

(2) One (1) conveying system, identified as BP-2, and consisting of the following:

(A) Four (4) hoppers, identified as #1 - #4 hoppers, approved in 2011 for construction, with a total maximum throughput of 600 tons per hour.

(B) One (1) conveyor, identified as Conv #12, approved in 2011 for construction, with a maximum throughput of 600 tons per hour.

(C) One (1) stacker conveyor, identified as Stacker #S6, approved in 2011 for construction, with a maximum throughput of 600 tons per hour.

(D) Two (2) conveyors, identified as Conv #13 and Conv #13A, approved in 2011 for construction, each with a maximum throughput of 600 tons per hour.

(3) One (1) magnetic separator, identified as MAG #9, approved in 2011 for construction, with a maximum throughput of 100 tons per hour.

(4) One (1) crusher, identified as BP Crusher, approved in 2011 for construction, with a maximum capacity of 600 tons per hour.

(5) Fifty (50) slag storage piles, identified as piles SP#4 and Pile M#9, approved in 2011 for construction.

(c) 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.

(1) One (1) front end loader, approved in 2011 for construction, with a maximum throughput of 300 tons per hour.

(2) One (1) feed hopper, identified as Feed Hopper, approved in 2011 for construction, with a maximum capacity of 300 tons per hour.

(3) One (1) conveyor, identified as Conveyor #14, approved in 2011 for construction, with a maximum capacity of 300 tons per hour.

(4) Three (3) conveyors, identified as Conveyors #15, #16, and #17, approved in 2011 for construction, each with a maximum capacity of 600 tons per hour.

(5) One (1) double decker screen, identified as PS1 and PS2, approved in 2015 for construction, each screen has a maximum capacity of 300 tons per hour.

(6) Two (2) radial stacker conveyors, identified as Radial Stacker #S7 and #S8, approved in 2011 for construction, each with a maximum throughput of 600 tons per hour.

(7) Two (2) slag storage piles, identified as piles SP#7 - SP#8, approved in 2011 for construction.

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

D.8 – LINDE GASES PLANT

(a) 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.

Under the NESHAP 40 CFR Part 63, Subpart DDDDD, these units are part of an affected source.

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

D.10 – Petroleum PRODUCT STORAGE

(a) 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.

(b) 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.

(c) 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.

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

(e) One (1) 1,000 gallon diesel storage tank, approved in 2023 for construction, identified as DST #6, with maximum storage capacity 1,043 gallons.

D.11 – COOLING TOWERS

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

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

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

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

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

Cooling Towers	No. of Cells	Average Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Meltshop Non Contact	9	60,000	Galvanizing/Annealing Non Contact	2	6,500
[1]Meltshop Caster Contact	2	5,000	Annealing Non Contact	2	5,000
[1]Meltshop Caster Contact(expansion)	2	5,000	LINDE Non Contact (CT-91B)	2	3,200
Hot Mill Non Contact	4	25,319			
Cold Mill Non Contact	2	10,000			
Cold Mill Non Contact (expansion)	1	5,000			
One (1) Cooling Tower, approved in 2012 for construction, with average capacity of 1,840 gallons per minute (gpm), located at LINDE GASES PLANT.					

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

(3) One laminar cooling tower (contact), approved for modification in 2023 with an average capacity of 31,600 gallons/min.

(4) One cooling tower (non-contact) identified as GANCT, approved in 2024 for construction for the Galvanizing/Annealing operations with an average capacity of 5,000 gallons/min.

(5) One cooling tower (non-contact), identified as ANCT, approved in 2024 for construction for the Annealing operations with an average capacity of 3,000 gallons/min.

D.12 – INSIGNIFICANT ACTIVITIES – SCRAP HANDLING AND PROCESSING
(See Condition A.4)

D.13 – EMERGENCY GENERATORS

(a) 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.

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(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.

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(3) Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(5) One(1) Lip Seal diesel emergency generator, identified as GEN #5, approved in 2016 for construction, with a maximum capacity of 15 hp, with emissions uncontrolled.

Under 40 CFR Part 60, Subpart IIII, this unit is considered an affected facility. Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered a new affected source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(8) Lagoon emergency generator, identified as GEN #8, with a capacity of 670.5 HP, permitted in 2021, with emissions uncontrolled.

Under 40 CFR Part 60, Subpart IIII, this unit is considered an affected facility. Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered a new affected source.

(9) One (1) diesel fired emergency generator for Zinc Pot, identified as CC-GEN1, approved in 2023 for construction, with a maximum rated capacity of 3,000 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

(10) One (1) diesel fired emergency generator for line cooling, identified as CC-GEN2,

approved in 2023 for construction, with a maximum rated capacity of 500 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

D.14 – INSIGNIFICANT ACTIVITIES – FUEL Dispensing Facilities
(See Condition A.4)

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

(a) 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)

(a) 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.

(b) 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.

Under 40 CFR Part 63, Subpart DDDDD, this unit is considered an affected source.

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

(a) Reversing and Tempering (R/T) Mill, (previously known as Temper Mill), identified as EU-14, constructed in 1995, permitted in 2021 to process high carbon steel when the RM mill is down for maintenance or repair, 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

(a) 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

(a) Eighteen (18) natural gas-fueled batch Annealing Furnaces, identified as EU-03, constructed in 2001 and modified in 2017 to replace the bases. 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).

Under 40 CFR Part 63, Subpart DDDDD, these units are considered affected source.

(b) One (1) natural gas-fired annealing furnace, identified as AN-19, approved for construction in 2007 and modified in 2017 to replace the bases, 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).

Under 40 CFR Part 63, Subpart DDDDD, this unit is considered an affected source.

D.20 – RESERVED

D.21 – COLD MILL – ACID REGENERATION

(a) 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

(a) Thirty six (36) Main Burners, identified as PHB #1 – PHB #36, permitted in 2019, with a heat input capacity of 1.50 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 54.30 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 galvanizing line has an electrostatic oiler. The three (3) Auxiliary Burners exhaust to the atmosphere.

(b) Additional burners as follows:

(1) Forty four (44) Burners, identified as RB#1 – RB#44, permitted in 2019, 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 burners use natural gas as primary fuel and propane as backup fuel and exhaust to stack S-27.

Under 40 CFR Part 63, Subpart DDDDD, these units are considered affected source.

(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.

Under 40 CFR Part 63, Subpart DDDDD, this unit is considered an affected source.

(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.

(c) 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) One (1) chem (roll) coater, identified as CHEM, constructed in 2020, permitted in 2022 with a nominal coating application rate of 0.45 gal/min, using no control, and exhausting indoors.

Under 40 CFR 60, Subpart TT, this is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this is considered an affected source.

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

(a) 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.

(b) 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. Approved in 2023 for a modification to add or replace burners so that the total heat input capacity of the burners is increase from 50 MMBtu/hr to 60 MMBtu/hr.

(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. Approved in 2023 for a modification to add or replace burners so that the total heat input capacity of the burners is increase from 50 MMBtu/hr to 60 MMBtu/hr.

(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 – RESERVED

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

D.28 – MELT SHOP – MATERIAL TRANSFER STATION

(a) 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.

(b) 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.

(c) 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, LMFs, PREHEATERS AND DRYERS

(a) 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 Baghouse 1 and Meltshop Baghouse 2). In addition, the EAFs have the following associated equipment:

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

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 Baghouse 1 and Meltshop Baghouse 2 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 Baghouse 1 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 Baghouse 1 exhausts to a stack identified as BH1.

(B) The Meltshop Baghouse 2 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 Baghouse 2 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.

(b) 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 Baghouse 1 which exhausts to a stack identified as BH1, and Meltshop Baghouse 2 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.

(c) 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.

(d) 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 Baghouse 1 which exhausts to stack BH1 or Meltshop Baghouse 2 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, and AOD. Both Casters approved in 2023 for modification to produce thicker slabs with installation of new molds, strand guides, and segments etc.

(e) 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.

(f) 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 #6a, 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.

(2) 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.

(3) 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.

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

(5) Tundish dryout stations, as follows:

(A) One (1) natural gas-fired tundish dryout station using propane as a backup fuel, identified as TD #1, constructed in 1989, modified in 2015 with replacement burners, with a maximum heat input capacity of 3.00 MMBtu/hr, exhausting to stack S-10.

(B) One (1) natural gas-fired tundish dryout station using propane as a backup fuel, identified as TD#2, constructed in 1990, modified in 2018 with replacement burners, with a maximum heat input capacity of 3.00 MMBtu/hr, exhausting to stack S-10.

(6) 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.

(7) 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.

(8) 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.

(9) 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)).

(10) 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.

(11) 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.

(12) Two (2) natural gas-fired Ladle Dryers, identified as LDSN#1 and LDSN#2, approved in 2024 for construction, with a heat input capacity of 10 MMBtu per hour, with uncontrolled emissions exhausting the Meltshop baghouses.

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.32 - Direct Reduced Iron (DRI) Handling System

(a) Rail Unload Hopper, identified as HP1, constructed in 2012, with a designed capacity of 400 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(b) Vibratory Screening Feeder, identified as VF1, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(c) Rail Unload Fines Drag Conveyor, identified as DC1, constructed in 2012, with a designed capacity of 10 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(d) Rail Unload Fines Bagging Station, identified as BS1, constructed in 2012, using Meltshop Baghouse 1 or Meltshop Baghouse 2 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, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(f) Two (2) Recirculating Conveyors, identified as SC1 and SC2 constructed in 2012, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(g) Discharge Diverter, identified as DV1, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

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

(i) Rail Unload Belt Conveyor, identified as BC1, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(j) Discharge Diverter, identified as DV2, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(k) Silo Loading Belt Conveyor, identified as BC2, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(l) Iron Carbide Silo, identified as ICS1, constructed in 1994 and modified in 2012, with a designed capacity of 250 tons per hour and a designed storage capacity of 3585 tons, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(m) Vibratory Screening Feeder, identified as VF2, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(n) Silo Fines Bagging Station, identified as BS2, constructed in 2012, using Meltshop Baghouse 1 or Meltshop Baghouse 2 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, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(p) Two (2) Recirculating Conveyors, identified as SC3 and SC4, constructed in 2012, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(q) Discharge Diverter, identified as DV3, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

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

(s) Silo Unloading Belt Conveyor, identified as BC3, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(t) Day Bin, identified as DB1, constructed in 2012, with a designed capacity of 250 tons per hour and a designed storage capacity of 200 tons, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(u) Weigh Belt Feeder, identified as WB1, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(v) South Scrap Bay Belt Conveyor, identified as BC4, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(w) South Furnace Belt Conveyor, identified as BC10, constructed in 2005 and modified in 2012, with a designed capacity of 265 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(x) Weigh Belt Feeder, identified as WB2, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(y) North Scrap Bay Belt Conveyor, identified as BC5, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(z) Belt Conveyor, identified as BC7, constructed in 2005 and modified in 2012, with a designed capacity of 265 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(aa) North Furnace Belt Conveyor, identified as BC9, constructed in 2005 and modified in 2012, with a designed capacity of 265 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

D.33 - RESERVED

D.34 – INSIGNIFICANT ACTIVITIES – Indirect Heat Units

D.35 - Continuous Galvanizing Line (CGL)

(a) One (1) Continuous Galvanizing Line (CGL), identified as CC-CGL, approved in 2023 for construction, consisting of the following:

(1) One (1) cleaning section, with a maximum capacity of 76 tons per hour, using hot caustic detergent spray to remove residual fines and oils, using wet scrubber (CGL-WS) as control and exhausting to stack (CGL#1).

(2) One (1) natural gas fired hot water circuit burner, with a maximum capacity of 9.0

MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CGL#2).

Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(3) One (1) natural gas fired annealing furnace, with a maximum capacity of 53.1 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CGL#3).

Under 40 CFR 63, Subpart DDDDD, radiant tube burners section of this unit is considered an affected source.

(4) One (1) chemical passivation roll coater, with a maximum capacity of 76 tons per hour, without control and exhausting to stack (CGL#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(5) One (1) electrostatic oiler, with a maximum capacity of 76 tons per hour, without control and exhausting to stack (CGL#5).

D.36 - Continuous Coating Line (CCL)

(a) Continuous Coating Line (CCL), identified as CC-CCL, approved in 2023 for construction, consisting of the following:

(1) One (1) precleaning section and one (1) cleaning section, with a maximum capacity of 73.8 tons per hour, using hot caustic detergent for cleaning, using ~~a~~ wet scrubbers (CCL-WS1 and CCL-WS2) as control and exhausting to stacks (CC#1 and CC#2, respectively).

(2) One (1) natural gas fired hot water circuit burner, with a maximum capacity of 5.12 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CC#3).

Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(3) One (1) chemical passivation roll coater, with a maximum capacity of 73.9 tons per hour, without control and exhausting to stack (CC#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(4) One (1) prime coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) prime coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the prime coater section and prime oven and exhausting to stack (CC#5). Heat for the prime coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(5) One (1) finish coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) finish coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the finish coater section and finish coat oven and exhausting to stack

(CC#5). Heat for the finish coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(6) One (1) natural gas fired recuperative thermal oxidizer, identified as RTO, with a maximum natural gas heat input capacity of 22.6 MMBtu/hr, using low NOx burner (LNB) and exhausting to Stack (CC#5).

D.37 - Coating Complex Boiler

(a) One (1) natural gas fired coating complex boiler, identified as CC-BOIL, approved in 2023 for construction, with a maximum heat input capacity of 50.0 MMBtu/hr, using low NOx burners (LNBs) and exhausting to stack (CCB).

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

D.38 – Towers and Structures Operations

(a) One (1) caustic detergent cleaning operation and one (1) sulfuric acid pickling operation for towers and structures operation, identified as CDPT&S, approved in 2024 for construction, with a nominal production rate of 40 tons per hour, using two (2) scrubber systems as control, identified as CDPT&SWS, and exhausting to stacks SCRBC_T&S1 and SCRBC_T&S2.

(b) One (1) natural gas fired galvanizing furnace for towers and structures operation, identified as NGGFT&S, approved in 2024 for construction, with a maximum heat input capacity of 17 MMBtu per hour and exhausting to stack KF_T&S.

(c) One (1) flux and galvanizing process for towers and structures operation, identified as FGT&S, approved in 2024 for construction, with a nominal production rate of 40 tons per hour, using two (2) baghouses identified as FGT&SBH1 and FGT&SBH2, as control, and exhausting to stacks BHG_T&S1 and BHG_T&S2.

(d) One (1) plasma cutting operation, with three (3) plasma cutting tables and two (2) robotic plasma cutting heads, associated with towers and structures operation, identified as PCT&S, approved in 2024 for construction, with a nominal production rate of 165 poles per day, using cartridge filters PCT&SCF as controls., and exhausting inside the building.

(e) One (1) welding operation associated with towers and structures operation, identified as WT&S, using SAW and MCAW (GMAW) type welding, approved in 2024 for construction, with a nominal throughput rate of 165 poles per day, using no controls, and exhausting inside the building.

(f) One (1) shot blasting operation associated with towers and structures operation, identified as SBT&S, approved in 2024 for construction, with a maximum throughput rate of 40 tons per hour, using a baghouse identified as SBT&SBH as control, and exhausting inside the building.

(g) One (1) coating booth operation associated with towers and structures, identified as CBT&S, approved in 2024 for construction, consisting of the following:

(1) airless spray of polyurethane, with a nominal throughput rate of 4 poles per hour, using a dry filter CBT&SBH as control, and exhausting inside the building; and

(2) roll-on UV coating, with a nominal throughput rate of 4 poles per hour, using no control, and exhausting inside the building.

(3) degreasing, with a nominal throughput rate of 4 poles per hour, using no control, and exhausting inside the building.

Under 40 CFR 63, Subpart MMMM, this unit is considered an affected source.

(h) One (1) natural gas fired boiler for towers and structures operation, identified as NGBT&S, approved in 2024 for construction, with a maximum heat input capacity of 15 MMBtu per hour, using no controls, and exhausting to stack BLR_T&S.

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(i) One (1) natural gas fired dryer/generator for tower and structures operation, identified as NGDGT&S, approved in 2024 for construction, with a maximum heat input rate of 3 MMBtu per hour, using no controls, and exhausting inside the building.

(j) One (1) natural gas fired heater for Supplemental Galv Building heat for towers and structures operation, identified as NGHT&S, approved in 2024 for construction, with a maximum heat input capacity of 1.48 MMBtu per hour, using no controls, and exhausting inside the building.

(k) One (1) natural gas fired emergency generator engine for towers and structures operation, identified as EGET&S, approved in 2024 for construction, with a maximum output of 671 hp, using no controls, and exhausting to the atmosphere.

Under 40 CFR 60, Subpart JJJJ, this unit is considered an affected facility.
Under 40 CFR 63, Subpart ZZZZ, this unit is considered a new affected source.

(l) One (1) cooling tower (non-contact) for towers and structures operation, identified as CTT&S approved in 2024 for construction, with a maximum water recirculation rate of 1,000 gallons per minute.

(m) Twenty (20) natural gas fired space heaters, approved in 2024 for construction, each with a maximum heat input capacity of 2.67 MMBtu per hour, using no controls, and exhausting indoors.

(n) Haul paved road truck traffic for towers and structure operation.

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).

(14) Four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2, approved in 2024 for construction, each equipped with bin vent filters (passive system).

D.6 – RESERVED

D.8 – INSIGNIFICANT ACTIVITIES – LINDE GASES PLANT

(e) One (1) natural gas-fired drying bed regeneration unit, permitted in 2018, with a maximum heat input of 2.60 MMBtu/hr, using no controls, and exhausting to a stack.

Under the NESHAP 40 CFR 63, Subpart DDDDD, the drying bed regeneration unit is an affected source.

D.9 – INSIGNIFICANT ACTIVITIES – PAVED AND UNPAVED ROADS

(f) 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

(g) 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):

(h) 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

(i) 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.

(j) 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.23 – INSIGNIFICANT ACTIVITIES – WELDING

(k) 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.

(l) 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):

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

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

D.27 – INSIGNIFICANT ACTIVITIES – DEGREASING

(o) 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

(p) 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.

(6) One (1) Tundish Processing Operation, approved in 2021 for construction, with a maximum capacity of 60 tons per day, with particulate emissions controlled by water spray, comprised of the following:

(A) Tundish Transfer; and

(B) Tundish Crushing.

D.34 – INSIGNIFICANT ACTIVITIES – Indirect Heat Units

(q) 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.

(1) One (1) natural gas fired hot water heater, constructed in 2000, with a maximum heat input capacity of 1.0 MMBtu/hr. This unit is used to heat the main natural gas supply to prevent condensation in the supply line.

Under 40 CFR 63, Subpart DDDDD, this is an affected source.

(2) One (1) QA/QC furnace, constructed in 1997, with a maximum of 8 burners, each with a maximum heat input capacity of 0.084 MMBtu/hr.

Under 40 CFR 63, Subpart DDDDD, this is an affected source.

A.5 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, as defined in 326 IAC 2-7-1(21):

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):

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

(1) One (1) natural gas fired quality control furnace, identified as Cold Mill Quality Control Furnace, with 8 burners each with a maximum rated capacity of 0.084 MMBtu/hr.

INSIGNIFICANT ACTIVITIES - Steel Technologies Operations

(b) One (1) 72 inch slitter line, installed in 2016, with a maximum capacity of 400,000 lbs/hr, and consisting of two (2) shears and one (1) edge trimmer.

(c) Natural gas fired comfort heaters, consisting of:

(1) Two (2) natural gas fired comfort heaters, each with a maximum rated heat input of 1.8 MMBtu/hr, installed in 2016.

(2) One (1) natural gas fired comfort heater, with a maximum rated heat input of 0.1 MMBtu/hr, installed in 2016.

(3) One (1) natural gas fired comfort heater, with a maximum rated heat input of 0.08 MMBtu/hr, installed in 2016.

(4) Two (2) natural gas fired comfort heaters, each with a maximum rated heat input of 1.0 MMBtu/hr, installed in 2017.

INSIGNIFICANT ACTIVITIES

(d) 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

(e) Space heaters, process heaters, or boilers using the following fuels:

(i) 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.

(f) Combustion source flame safety purging on startup.

(g) 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.

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

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

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

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

(l) Closed loop heating and cooling systems.

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

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

(o) 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.

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

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

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

(s) Heat exchanger cleaning and repair.

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

(u) 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.

(v) 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.

(w) 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.

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

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

    (i) On-site fir training approved by the Department.

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

(aa) Portable blast cleaning equipment with enclosures.

(bb) Indoor and outdoor kerosene heaters.

(cc) Rolling oil recovery systems.

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

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

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

(gg) Batteries and battery charging stations.

(hh) 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.

(ii) Nonasbestos insulation installation or removal.

(jj) Instrument air dryer and filter maintenance.

(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.

(oo) Eight (8) natural gas-fired space heaters for warehouse with heat input equal to or less than ten million (10,000,000) Btu per hour each.

A.6 Part 70 Permit Applicability [326 IAC 2-7-2]

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

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

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

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

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

(a) This permit, T107-45287-00038, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

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

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

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7] [IC 13-17-12]

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

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

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

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

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

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

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

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

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

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

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

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

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

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

and

United States Environmental Protection Agency, Region 5
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

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

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

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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

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

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

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

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

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

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

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

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

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

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

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

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

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

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

(a) All terms and conditions of permits established prior to T107-45287-00038 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

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

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

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

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

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

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

Request for renewal shall be submitted to:

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

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the

document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

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

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

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

B.18 Permit Revision Under Economic Incentives and Other Programs
[326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

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

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

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

and

United States Environmental Protection Agency, Region 5
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

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

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

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

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(37)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

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

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

(3) Any change in emissions; and

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

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

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

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

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

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

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

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

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

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

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

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

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

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

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-8590 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

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

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

C.5 Fugitive Dust Emissions [326 IAC 6-4]

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

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

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the attached plan as in Attachment A. The provisions of 326 IAC 6-5 are not federally enforceable.

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

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

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

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

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

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

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

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

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

C.11 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)][40 CFR 64][326 IAC 3-8]

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

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of

permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

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

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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

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

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

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

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

(d) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 326 IAC 2-2.

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

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.

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

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

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

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

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

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

C.15 Risk Management Plan [326 IAC 2-7-5(11)] [40 CFR 68]

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

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

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

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

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

(1) initial inspection and evaluation;

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

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

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

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

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

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

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

(II)

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

(1) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(2) Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

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

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

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

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

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

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

(h) *CAM recordkeeping requirements.*

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

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

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

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

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(33) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

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

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

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

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:
   (AA) All calibration and maintenance records.
   (BB) All original strip chart recordings for continuous monitoring instrumentation.
   (CC) Copies of all reports required by the Part 70 permit.

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

   These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

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

(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(2) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.20 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2][326 IAC 2-3] [40 CFR 64][326 IAC 3-8]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B - Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

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

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

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

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

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

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

(b) The address for report submittal is:

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

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (oo) and/or 326 IAC 2-3-1 (jj)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (ww) and/or 326 IAC 2-3-1 (pp), for that regulated NSR pollutant, and

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

(f) The report for project at an existing emissions *unit* shall be submitted no later than sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

Reports required in this part shall be submitted to:

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

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

Stratospheric Ozone Protection

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

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

SECTION D.0 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description: Entire Source

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

(b) 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. Approved in 2023 for a modification to add or replace burners so that the total heat input capacity of the burners is increase from 50 MMBtu/hr to 60 MMBtu/hr.

(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. Approved in 2023 for a modification to add or replace burners so that the total heat input capacity of the burners is increase from 50 MMBtu/hr to 60 MMBtu/hr.

(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)

(a) (4) Both the Meltshop Baghouse 1 and Meltshop Baghouse 2 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 Baghouse 1 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 Baghouse 1 exhausts to a stack identified as vent BH1.

(B) The Meltshop Baghouse 2 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 Baghouse 2 exhausts to a stack identified as BH2.

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

(f) (6) 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, and Tunnel Furnace Snub shall not exceed 544,917 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

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

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

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

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

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 from Table 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 2-7-5(1)] [326 IAC 2-7-6(1)]

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

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

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

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

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

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

(1) All documentation relating to:

(A) design, installation, and testing of all elements of the monitoring system; and
(B) required corrective action or compliance plan activities.

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

(3) All records of corrective and preventive action.

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

(A) Date of facility downtime.
(B) Time of commencement and completion of each downtime.
(C) Reason for each downtime.

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

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

The reports shall include the following:

(1) Date of downtime.
(2) Time of commencement.
(3) Duration of each downtime.
(4) Reasons for each downtime.
(5) Nature of system repairs and adjustments.

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

D.0.5 Record Keeping Requirements

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

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

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

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

(d) Monthly records of the CO_2e 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 quarterly summary of the information to document the compliance status with Condition D.0.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the definition of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.1 RESERVED

SECTION D.2 RESERVED

SECTION D.3 RESERVED

SECTION D.4 RESERVED

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(14) Four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2, approved in 2024 for construction, each equipped with bin vent filters (passive system).

(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.5.1 Prevention of Significant Deterioration (PSD) Minor Limits for PM, PM_{10} and $PM_{2.5}$ Emissions [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 requirements:

(a) The PM emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

(b) The PM_{10} emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

(c) The $PM_{2.5}$ emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

Compliance with these limits, shall limit the potential to emit of PM, PM_{10} and $PM_{2.5}$ to less than 25, 15 and 10 tons per twelve (12) consecutive month period, respectively, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2024 Modification permitted under SSM No. 107-47617-00038.

D.5.2 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

D.5.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.5.4 Particulate Control

In order to assure compliance with Conditions D.5.1 and D.5.2, bin vent filters for particulate control shall be in operation and control emissions from the four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) at all times the four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) are in operation.

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

D.5.5 Visible Emissions Notations

(a) Visible emission notations from the four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) exhausts 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 a 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.

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

D.5.6 Record Keeping Requirement

(a) To document the compliance status with Condition D.5.5, the Permittee shall maintain a daily record of visible emission notations of the bin vent filters from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) exhausts. 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).

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

SECTION D.6 RESERVED

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

SLAG PROCESSING

(a) 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 700 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. The emissions unit consists of the following:

(1) One (1) front end loader, identified as FEL, constructed in 2015, with a maximum throughput of 700 tons per hour.

(2) One (1) Grizzly hopper with vibrating feeder, identified as Grizzly, with a maximum throughput of 700 tons per hour, constructed in 2016.

(3) One (1) feeder, identified as Syn Feeder, constructed in 2016, with a maximum throughput of 1,000 tons per hour.

(4) One (1) storage pile, identified as OS #1.

(5) One (1) belt conveyor, identified as Belt Conveyor #10, constructed in 2016, with a maximum throughput of 600 tons per hour.

(6) One (1) magnetic separator, identified as MAG #1, constructed in 2011, with a maximum throughput of 100 tons per hour.

(7) One (1) storage pile, identified as M #1.

(8) One (1) magnetic separator, identified as MAG #4, constructed in 2016, with a maximum throughput of 100 tons per hour.

(9) One (1) magnetic separator, identified as MAG #2, constructed before 2011, with a maximum throughput of 100 tons per hour.

(10) One (1) storage pile, identified as M #2.

(11) One (1) screen, identified as TSP-2, constructed in 2011, with a maximum rated capacity of 400 tons per hour.

(12) One (1) belt conveyor, identified as Belt Conveyor #9, constructed before 2011, with a maximum throughput of 600 tons per hour.

(13) One (1) magnetic separator, identified as MAG #3, constructed before 2011, with a maximum throughput of 100 tons per hour.

(14) One (1) storage pile, identified as M #3.

(15) One (1) crusher, identified as TSP-6, approved in 2010 for construction and approved in 2011 for modification, with a maximum capacity of 430 tons per hour.

(16) One (1) belt conveyor, identified as Belt Conveyor #11, constructed in 2016, with a maximum throughput of 600 tons per hour.

(17) One (1) belt conveyor, identified as Belt Conveyor #8, constructed in 2016, with a maximum throughput of 600 tons per hour.

(18) One (1) conveyor, identified as Conv #7, constructed before 2011, with a maximum throughput of 600 tons per hour.

(19) One (1) screening process consisting of three (3) screeners, identified as TSP-8, approved in 2011 and 2013 for modification, with a maximum capacity of 600 tons per hour.

(20) Four (4) shutes, identified as shutes F, G, H, and I, each with a maximum capacity of 600 tons per hour.

(21) One (1) conveyor, identified as LG Conv #4, constructed before 2011, with a maximum throughput of 600 tons per hour.

(22) One (1) magnetic separator, identified as MAG #6, constructed before 2011, with a maximum capacity of 100 tons per hour.

(23) One (1) storage pile, identified as M #6.

(24) One (1) radial stacker, identified as Radial Stacker #S4, constructed before 2011, with a maximum throughput of 600 tons per hour.

(25) Two (2) storage piles, identified as S #3.

(26) One (1) cone crusher, identified as Cone Crusher, constructed before 2011, with a maximum capacity of 600 tons per hour.

(27) One (1) conveyor, identified as Conv #2B, constructed before 2011, with a maximum throughput of 600 tons per hour.

(28) One (1) conveyor, identified as Conv #2A, constructed before 2011, with a maximum throughput of 600 tons per hour.

(29) One (1) conveyor, identified as LG Conv #5, constructed before 2011, with a maximum throughput of 600 tons per hour.

(30) One (1) magnetic separator, identified as MAG #7, constructed before 2011, with a maximum throughput of 100 tons per hour.

(31) One (1) storage pile, identified as M #7.

(32) One (1) radial stacker, identified as Radial Stacker #S5, constructed before 2011, with a maximum throughput of 600 tons per hour.

(33) Two (2) storage piles, identified as S #2.

(34) One (1) conveyor, identified as Conv #2, constructed before 2011, with a maximum throughput of 600 tons per hour.

(36) One (1) storage pile, identified as M #5.

(37) One (1) radial stacker, identified as Radial Stacker #S1, constructed before 2011, with a maximum throughput of 600 tons per hour.

(38) One (1) storage pile, identified as S #1.

The following units have historically been identified as part of EU-10, but are separate from the above operation.

(39) One (1) portable screen operation, constructed prior to 2011, consisting of the following:

(A) One (1) portable screen, identified as 15" slanted Grizzly, with a maximum throughput of 400 tons per hour.

(B) Two (2) storage piles associated with 15" slanted Grizzly.

(C) One (1) portable screen, identified as 12" slanted Grizzly, with a maximum throughput of 400 tons per hour.

(D) Two (2) storage piles associated with 15" slanted Grizzly.

(E) One (1) portable screen, identified as 3" slanted Grizzly, with a maximum throughput of 400 tons per hour.

(F) Two (2) storage piles associated with 15" slanted Grizzly.

(40) Two (2) drop ball operations, identified as DB#1 and DB#2constructed prior to 2011, each with a maximum throughput of 20 tons per hour.

(b) Blend Plant, approved in 2011 for construction, with a maximum rated capacity of 305 tons per hour. The Blend Plant will further process the various materials streams from the existing Slag Operation EU-10 to produce various blends of slag products.

(1) One (1) front end loader, identified as BP-FEL-1, approved in 2011 for construction, with a maximum throughput of 600 tons per hour.

(2) One (1) conveying system, identified as BP-2, and consisting of the following:

(A) Four (4) hoppers, identified as #1 - #4 hoppers, approved in 2011 for construction, with a total maximum throughput of 600 tons per hour.

(B) One (1) conveyor, identified as Conv #12, approved in 2011 for construction, with a maximum throughput of 600 tons per hour.

(C) One (1) stacker conveyor, identified as Stacker #S6, approved in 2011 for construction, with a maximum throughput of 600 tons per hour.

(D) Two (2) conveyors, identified as Conv #13 and Conv #13A, approved in 2011 for construction, each with a maximum throughput of 600 tons per hour.

(3) One (1) magnetic separator, identified as MAG #9, approved in 2011 for construction, with a maximum throughput of 100 tons per hour.

(4) One (1) crusher, identified as BP Crusher, approved in 2011 for construction, with a maximum capacity of 600 tons per hour.

(5) Fifty (50) slag storage piles, identified as piles SP#4 and Pile M#9, approved in 2011 for construction.

(c) 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.

(1) One (1) front end loader, approved in 2011 for construction, with a maximum throughput of 300 tons per hour.

(2) One (1) feed hopper, identified as Feed Hopper, approved in 2011 for construction, with a maximum capacity of 300 tons per hour.

(3) One (1) conveyor, identified as Conveyor #14, approved in 2011 for construction, with a maximum capacity of 300 tons per hour.

(4) Three (3) conveyors, identified as Conveyors #15, #16, and #17, approved in 2011 for construction, each with a maximum capacity of 600 tons per hour.

(5) One (1) double decker screen, identified as PS1 and PS2, approved in 2015 for construction, each screen has a maximum capacity of 300 tons per hour.

(6) Two (2) radial stacker conveyors, identified as Radial Stacker #S7 and #S8, approved in 2011 for construction, each with a maximum throughput of 600 tons per hour.

(7) Two (2) slag storage piles, identified as piles SP#7 - SP#8, approved in 2011 for construction.

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

(The information describing the process contained in this emissions unit 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, PM_{10} and $PM_{2.5}$ Emissions [326 IAC 2-2]

(a) The PM, PM_{10} and $PM_{2.5}$ emissions from EU-10 shall not exceed the limits listed in the table below:

Unit Description	Throughput Limit (tons/yr)	PM Emissions Limit (lb/ton)	PM_{10} Emissions Limit (lb/ton)	$PM_{2.5}$ Emissions Limit (lb/ton)
Front End Loader (FEL)		2.64E-04	1.29E-04	4.80E-05
Grizzly hopper w/ vibratory feeder (Grizzly)		9.00E-05	3.30E-05	9.33E-06
Feeder (Syn Feeder)		9.00E-05	3.30E-05	9.33E-06
Belt conveyor (Belt Conveyor #10)		9.00E-05	3.30E-05	9.33E-06
Magnetic separators (MAG #1 - MAG # 7)		9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
Screen (TSP-2)	2,000,000	7.50E-04	2.61E-04	1.76E-05
Belt conveyors (Belt Conveyor #9, #11, & #8)*		9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
Crusher (TSP-6)*		1.62E-04	7.20E-05	1.33E-05

Unit Description	Throughput Limit (tons/yr)	PM Emissions Limit (lb/ton)	PM_{10} Emissions Limit (lb/ton)	$PM_{2.5}$ Emissions Limit (lb/ton)
Screen (TSP-8)	2,000,000	7.50E-04	2.61E-04	1.76E-05
Conveyors (Conv #7, LG Conv #4, Conv #2B, Conv #2A, LG Conv #5, & Conv #2)**		9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
4 Shutes (F, G, H, I)**		9.00E-05	3.30E-05	9.33E-06
Radial stacker (Radial Stacker #S4, #S5, and #S1)**		9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
Cone Crusher (Cone Crusher)**		1.62E-04	7.20E-05	1.33E-05

*These units are bottlenecked by the throughput limit on TSP-2.
**These units are bottlenecked by the throughput limit on TSP-8.

(b) The throughput for the Blend Plant shall not exceed 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The PM, PM_{10} and $PM_{2.5}$ emissions from the Blend Plant shall not exceed the limits listed in the table below:

Unit Description	PM Emissions Limit (lb/ton)	PM_{10} Emissions Limit (lb/ton)	$PM_{2.5}$ Emissions Limit (lb/ton)
Front End Loader (BP-FEL-1)	2.64E-04	1.29E-04	4.80E-05
Hoppers (#1 - #4)	9.00E-05	3.30E-05	9.33E-06
Conveyors (Conv #12, #13, #13A)	9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
Stacker conveyor (Stacker #S6)	9.00E-05	3.30E-05	9.33E-06
Magnetic separator (MAG #9)	9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
Crusher (BP Crusher)	1.62E-04	7.20E-05	1.33E-05

(d) The throughput for the Permanent Screening Plant shall not exceed 300,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(e) The PM, PM_{10} and $PM_{2.5}$ emissions from the Permanent Screening Plant shall not exceed the limits listed in the table below:

Unit Description	PM Emissions Limit (lb/ton)	PM_{10} Emissions Limit (lb/ton)	$PM_{2.5}$ Emissions Limit (lb/ton)
Front End Loader	2.64E-04	1.29E-04	4.80E-05
Feed Hopper (Feed Hopper)	9.00E-05	3.30E-05	9.33E-06
Conveyors (Conveyor #14, #15, #16, #17)	9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)
Double Decker Screen (PS1, PS2)	7.50E-04 (each)	2.61E-04 (each)	1.76E-05 (each)
Radial stacker conveyor (Radial Stacker #S7, #S8)	9.00E-05 (each)	3.30E-05 (each)	9.33E-06 (each)

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

Compliance with this limit shall limit the potential to emit PM to less than twenty-five (25), PM_{10} to less than fifteen (15), and $PM_{2.5}$ to less than ten (10) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to source modification permitted under SSM No. 107-29766-00038.

D.7.3 Prevention of Significant Deterioration (PSD) Minor Limits for PM, PM_{10} and $PM_{2.5}$ Emissions [326 IAC 2-2]

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

Compliance with this limit shall limit the potential to emit of PM to less than twenty-five (25), PM_{10} to less than fifteen (15), and $PM_{2.5}$ to less than ten (10) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to source modification permitted under SSM No. 107-36491-00038.

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

(a) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from each of the following facilities shall not exceed the pound per hour limit listed in the table below when running at the listed maximum process weight rates:

Process/Facility	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
EU-10		
Front End Loader (FEL)	700	73.06
Grizzly hopper w/ vibratory feeder (Grizzly)	700	73.06
Feeder (Syn Feeder)	1,000	77.59
Belt conveyor (Belt Conveyor #10)	600	71.16
Magnetic separators (MAG #1 - MAG # 7)	100 (each)	51.28 (each)
Screen (TSP-2)	400	66.31
Belt conveyors (Belt Conveyor #9, #11, & #8)	600 (each)	71.16 (each)
Crusher (TSP-6)	430	67.16
Screen (TSP-8)	600	71.16
Conveyors (Conv #7, LG Conv #4, Conv #2B, Conv #2A, LG Conv #5, & Conv #2)	600 (each)	71.16 (each)
4 Shutes (F, G, H, I)	600 (each)	71.16 (each)
Radial stacker (Radial Stacker #S4, #S5, and #S1)	600 (each)	71.16 (each)
Cone Crusher (Cone Crusher)	600	71.16
Blend Plant		
Front End Loader (BP-FEL-1)	600	71.16
Hoppers (#1 - #4)	600 (each)	71.16 (each)
Conveyors (Conv #12, #13, #13A)	600 (each)	71.16 (each)

Process/Facility	Process Weight Rate (tons/hour)	Particulate Emissions Limit (pounds/hour)
Stacker conveyor (Stacker #S6)	600	71.16
Magnetic separator (MAG #9)	100	51.28
Crusher (BP Crusher)	600	71.16
Permanent Screening Plant		
Front End Loader	300	63.00
Feed Hopper (Feed Hopper)	300	63.00
Conveyor (Conveyor #14)	300	63.00
Conveyors (Conveyor #15, #16, #17)	600 (each)	71.16 (each)
Double Decker Screen (PS1, PS2)	300 (each)	63.00 (each)
Radial stacker conveyor (Radial Stacker #S7, #S8)	600 (each)	71.16 (each)
Screen (15" slanted Grizzly)	400	66.31
Screen (12" slanted Grizzly)	400	66.31
Screen (3" slanted Grizzly)	400	66.31
Drop Ball (DB#1)	20	30.51
Drop Ball (DB#)	20	30.51

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

Interpolation of the data for the process weight rate up to 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

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

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

(b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), when the process weight rate exceeds two hundred (200) tons per hour, the allowable emissions may exceed that shown in the table in 326 IAC 6-3-2(e) provided the concentration of particulate in the discharge gases to the atmosphere is less than one tenth (0.10) pound per one thousand (1,000) pounds of gases.

D.7.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan, is required for these facilities and any control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan.

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

D.7.6 Particulate Matter (PM) Control

In order to ensure compliance with Conditions D.7.1 and D.7.2, the Permittee shall apply an initial application of water or a mixture of water and wetting agent or the use of water sprays weather permitting to control the PM, PM_{10}, and $PM_{2.5}$ emissions from the front end loaders, hoppers, feeders, magnetic separators, shutes, crushers, screens, and conveyors, such that the associated opacity limitations in Condition D.7.1 and pound per ton limits in Condition D.7.2 are not exceeded at each emission point where slag handling and processing operations occur.

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

D.7.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.2(a), the Permittee shall maintain records of the throughput weight to TSP-2 and TSP-8 for each compliance period.

(b) To document the compliance status with Condition D.7.2(b), the Permittee shall maintain records of the throughput weight to the Blend Plant for each compliance period.

(c) To document the compliance status with Condition D.7.2(d), the Permittee shall maintain records of the throughput weight to the Permanent Screening Plant for each compliance period.

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

D.7.8 Reporting Requirements

A quarterly report of throughput weight to TSP-2, TSP-8, the Blend Plant and the Permanent Screening Plant and a quarterly summary of the information to document the compliance status with Condition D.*7.2* shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee’s obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

LINDE GASES PLANT

(a) 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.

Under the NESHAP 40 CFR Part 63, Subpart DDDDD, these units are part of an affected source.

D.8 – INSIGNIFICANT ACTIVITIES – LINDE GASES PLANT

(e) One (1) natural gas-fired drying bed regeneration unit, permitted in 2018, with a maximum heat input of 2.60 MMBtu/hr, using no controls, and exhausting to a stack.

Under the NESHAP 40 CFR 63, Subpart DDDDD, the drying bed regeneration unit is an affected source.

(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.8.1 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.8.2 Particulate Matter Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), the PM emissions from the following units shall be limited to Pt pounds per MMBtu heat input, as follows:

Emission Unit	**Unit ID**	**Pt (lb/MMBtu)**
Linde Boiler No. 1	ID No. 1	0.42
Linde Boiler No. 2	ID No. 2	0.38
Hydrogen Plant Boiler	Hydrogen Plant Boiler	0.36
Drying bed regeneration unit	none	0.29

D.8.3 Preventive Maintenance Plan (PMP) [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.8.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.8.1, 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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – PAVED AND UNPAVED ROADS

(f) 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 emissions unit 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:

(a) 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%).

(b) 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%).

(c) 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.

(d) The three (3) opacity readings for each vehicle pass shall be taken as follows:

(1) The first reading will be taken at the time of emission generation;

(2) The second reading will be taken five (5) seconds later; and

(3) 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 BACT Requirements [326 IAC 2-2]

Pursuant to PSD 107-2764-00038, issued on November 30, 1993, and PSD/SSM No. 107-45480-00038, 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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

PETROLEUM PRODUCT STORAGE

(a) 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.

(b) 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.

(c) 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.

(d) One (1) 1000 gallon aboveground diesel storage tank, identified as DST #5, installed in 2010.

(e) One (1) 1,000 gallon diesel storage tank, approved in 2023 for construction, identified as DST #6, with maximum storage capacity 1,043 gallons.

(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.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.

(e) Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements for the DST #6:

(i) A submerged fill pipe shall be used when the tank is being filled by a pump.

(ii) The tank shell and roof shall be white painted and the paint shall be in good condition.

SECTION D.11 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COOLING TOWERS

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

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

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

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

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

Cooling Towers	No. of Cells	Average Capacity (gal/min)	Cooling Towers	No. of Cells	Average Capacity (gal/min)
Meltshop Non Contact	9	60,000	Galvanizing/Annealing Non Contact	2	6,500
[1]Meltshop Caster Contact	2	5,000	Annealing Non Contact	2	5,000
[1]Meltshop Caster Contact(expansion)	2	5,000	LINDE Non Contact (CT-91B)	2	3,200
Hot Mill Non Contact	4	25,319			
Cold Mill Non Contact	2	10,000			
Cold Mill Non Contact (expansion)	1	5,000			
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 due to the caster quench but will not increase its permitted average capacity of 10,000 gpm.
[2] Note: The cooling towers that are not subject to BACT were determined per *Parties Joint Motion to Enter Settlement Agreement and Permanent Stay,* Cause No 03-A-J-3253, on April 21, 2010.

(3) One laminar cooling tower (contact), approved for modification in 2023 with an average capacity of 31,600 gallons/min.

(4) One cooling tower (non-contact) identified as GANCT, approved in 2024 for construction for the Galvanizing/Annealing operations with an average capacity of 5,000 gallons/min.

(5) One cooling tower (non-contact), identified as ANCT, approved in 2024 for construction for the Annealing operations with an average capacity of 3,000 gallons/min.

INSIGNIFICANT ACTIVITIES – COOLING TOWERS

(g) 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 emissions unit description box is descriptive information and does not constitute enforceable conditions.)

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

D.11.1 Cooling Towers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2, PSD SSM 107-16823-00038, issued November 21, 2003, and PSD SSM 107-21359-00038, issued April 27, 2006, the Permittee shall comply with the following BACT requirements for the Castrip Contact, Castrip Non Contact, Vacuum Degasser Contact and Vacuum Degasser Non Contact cooling towers:

(a) The design drift rate from each cooling tower shall not exceed 0.005%.

(b) The Permittee shall retain records demonstrating that the cooling towers are designed to achieve 0.005% drift.

(c) The visible emissions from each cooling tower shall not exceed 20% opacity, based on a 6-minute average.

(d) The 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.

D.11.2 Cooling Towers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 and PSD/SSM 107-36834-00038, the Permittee shall comply with the following BACT requirements:

(a) PM, PM_{10}, and $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall be controlled by the use of drift eliminators with a maximum designed drift rate not to exceed 0.001%.

(b) PM emissions from the Hot Mill contact cooling tower shall not exceed 0.38 lb/hr.

(c) PM_{10} emissions from the Hot Mill contact cooling tower shall not exceed 0.19 lb/hr.

(d) $PM_{2.5}$ emissions from the Hot Mill contact cooling tower shall not exceed 0.001 lb/hr.

D.11.3 Cooling Towers PSD BACT [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3 and PSD/SSM 107-45480-00038, issued on April 17, 2023, the Permittee shall comply with the following BACT requirements for the laminar cooling tower:

(a) The drift loss rate shall be no greater than 0.005% and maximum total dissolved solids (TDS) shall be no greater than 5000 mg/L.

(b) The PM, PM_{10} and $PM_{2.5}$ emissions from the laminar cooling tower shall be controlled by high efficiency drift eliminators.

D.11.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.11.5 Particulate Control

In order to comply with Condition D.11.3, the drift eliminators shall be in operation and control emissions from the laminar cooling tower at all times that the laminar cooling tower is in operation.

D.11.6 Monitoring

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the hot mill contact cooling tower for measuring the water conductivity. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 24-hour average.

(b) The water conductivity shall not exceed a 24-hour average of 4,165 μS/cm.

(c) If the 24-hour average water conductivity exceeds 4,165 μS/cm, the Permittee shall take a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. Failure to take response steps 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.11.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.11.6, the Permittee shall maintain continuous water conductivity records for the hot mill contact cooling tower.

(b) To document the compliance status with Condition D.11.3, the Permittee shall retain records demonstrating that the cooling tower is designed to achieve 0.005% drift.

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

SECTION D.12 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – SCRAP HANDLING AND PROCESSING

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

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

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

(The information describing the process contained in this emissions unit 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 cannot 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 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from the scrap handling and processing 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

D.12.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.12.4 Visible Emissions Notations

(a) Visible emission notations of scrap cutting exhausts 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 a 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.

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

D.12.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.12.4, the Permittee shall maintain records of daily visible emission notations of the scrap cutting operation exhausts. 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) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.13 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

EMERGENCY GENERATORS

(a) 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.

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(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.

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(3) Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(9) One (1) diesel fired emergency generator for Zinc Pot, identified as CC-GEN1, approved in 2023 for construction, with a maximum rated capacity of 3,000 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/ source.

(10) One (1) diesel fired emergency generator for line cooling, identified as CC-GEN2, approved in 2023 for construction, with a maximum rated capacity of 500 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/ source.

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

(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.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, the Permittee shall comply with the following BACT requirements for GEN #1 through GEN #3:

(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.

D.13.2 CC-GEN1 PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

$PM/PM_{10}/PM_{2.5}$

(a) The PM, PM_{10} and $PM_{2.5}$, each, emissions from CC-GEN1 shall not exceed 0.15 g/hp-h (0.2 g/kw-hr).

NOx

(b) The NOx emissions from CC-GEN1 shall not exceed 4.8 g/hp-hr (6.4 g/kW-hr).

SO_2

(c) Only ultra-low sulfur diesel fuel (0.0015%S) shall be used at the CC-GEN1.

CO

(d) The CO emissions from CC-GEN1 shall not exceed 2.61 g/hp-hr (3.5 g/kW-hr).

(e) The CO emissions from CC-GEN1 shall be controlled by oxidation catalyst.

VOC

(f) The VOC emissions from CC-GEN1 shall not exceed 0.32 g/hp-hr.

GHGs

(g) The CO2e emissions from CC-GEN1 shall not exceed 163.6 lb/MMBtu.

(h) The CO2e emissions from CC-GEN1 shall not exceed 920.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(i) Good engineering design and manufacturer’s recommended operating and maintenance procedures.

PM, PM_{10}, $PM_{2.5}$, NOx, VOC, and CO

(j) CC-GEN1 shall be certified engine.

D.13.3 CC-GEN2 PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

$PM/PM_{10}/PM_{2.5}$

(a) The PM, PM_{10} and $PM_{2.5}$, each, emissions from CC-GEN2 shall not exceed 0.15 g/hp-h (0.2 g/kw-hr).

NOx

(b) The NOx emissions from CC-GEN2 shall not exceed 3.0 g/hp-hr (4.0 g/kW-hr).

SO_2

(c) Only ultra-low sulfur diesel fuel (0.0015%S) shall be used at CC-GEN2.

CO

(d) The CO emissions from CC-GEN2 shall not exceed 2.61 g/hp-hr (3.5 g/kW-hr).

(e) The CO emissions from CC-GEN2 shall be controlled by oxidation catalyst.

VOC

(f) The VOC emissions from CC-GEN2 shall not exceed 1.13 g/hp-hr.

GHGs

(g) The CO2e emissions from CC-GEN2 shall not exceed 163.6 lb/MMBtu.

(h) The CO2e emissions from CC-GEN2 shall not exceed 153.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(i) Good engineering design and manufacturer's recommended operating and maintenance procedures.

PM, PM_{10}, $PM_{2.5}$, NOx, VOC, and CO

(j) CC-GEN2 shall be certified engine.

D.13.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.13.5 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.13.2(d) and D.13.3(d), no later than one hundred and eighty (180) days after modification, the Permittee shall perform CO testing for the oxidation catalyst equipped on CC-GEN1 and CC-GEN2 utilizing methods as approved by the commissioner. The test shall be repeated at least once every five 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.13.6 Greenhouse Gases (GHGs) Calculations

(a) To determine the compliance status with Condition D.13.2(h), the following equation shall be used to determine the CO2e emissions from CC-GEN1:

CO2e emissions (tons/month) = fuel usage (gallons/month) x 0.137 (MMBtu/gallon) x [163.05 (lb/MMBtu) x 1 + 0.00661 (lb/MMBtu) x 25 + 0.00132 (lb/MMBtu) x 298] / 2000 (ton/lb)

Where:

lb/MMBtu emission factor based on 40 CFR Part 98 Tables C-1 and C-2.

Global warming potentials (GWP) values 1, 25 and 298 are from Table A-1 of 40 CFR Part 98 Subpart A.

(b) To determine the compliance status with Condition D.13.3(h), the following equation shall be used to determine the CO2e emissions from CC-GEN2:

CO2e emissions (tons/month) = fuel usage (gallons/month) x 0.137 (MMBtu/gallon) x [163.05 (lb/MMBtu) x 1 + 0.00661 (lb/MMBtu) x 25 + 0.00132 (lb/MMBtu) x 298] / 2000 (ton/lb)

Where:

lb/MMBtu emission factor based on 40 CFR Part 98 Tables C-1 and C-2.

Global warming potentials (GWP) values 1, 25 and 298 are from Table A-1 of 40 CFR Part 98 Subpart A.

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

D.13.7 Oxidation Catalyst Temperature

For oxidation catalyst equipped on CC-GEN1 and CC-GEN2:

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the oxidation catalyst for measuring operating temperature. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of startup until the stack test results are available, the Permittee shall operate the oxidation catalyst at or above the 3-hour average temperature specified by the oxidation catalyst manufacturer.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.13.2(d) and D.13.3(d).

(c) On and after the date the most recent compliant stack test results are available, the Permittee shall operate the oxidation catalyst at or above the 3-hour average temperature as observed during the compliant stack test.

(d) If the 3-hour average temperature falls below the above mentioned 3-hour average temperature, the Permittee shall take a 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. A 3-hour average temperature reading below the above mentioned 3-hour average temperature is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.13.8 Parametric Monitoring

For oxidation catalyst equipped on CC-GEN1 and CC-GEN2:

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with the limits in Conditions D.13.2(d) and D.13.3(d).

(b) The duct pressure or fan amperage shall be observed at least once per day when the oxidation catalyst is in operation. On and after the date the most recent compliant stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in the most recent compliant stack test.

(c) When, for any one reading, the duct pressure or fan amperage is outside the above mentioned range, the Permittee shall take a reasonable response. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A 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.

(d) The instruments used for determining the duct 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 every six (6) months.

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

D.13.9 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) In order to document the compliance status with Conditions D.13.2(c) and D.13.3(c), the Permittee shall maintain monthly records of the vendor analysis of fuel delivered to show the percent sulfur content of the fuel used in the emergency engines (CC-GEN1 and CC-GEN2).

(c) To document the compliance status with Conditions D.13.2(h) and D.13.3(h), the Permittee shall maintain monthly records of the diesel fuel usage at each of the emergency engines (CC-GEN1 and CC-GEN2) and the CO2e emissions from the emergency engines (CC-GEN1 and CC-GEN2).

(d) To document the compliance status with Condition D.13.7, the Permittee shall maintain continuous temperature records (on a 3-hour average basis) for the catalytic oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a 3-hour average temperature record is not taken and the reason for the lack of a 3-hour average temperature record (e.g., the process did not operate that day).

(e) To document the compliance status with Condition D.13.8, the Permittee shall maintain daily records of the duct pressure or fan amperage and the duct pressure or fan amperage used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a duct pressure or fan amperage record is not taken and the reason for the lack of duct pressure or fan amperage record (e.g., the process did not operate that day).

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

SECTION D.14 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – FUEL DISPENSING FACILITIES

(i) 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.

(j) 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 emissions unit 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 that extends to not more than:
(i) twelve (12) inches from the bottom of the storage tank if the fill pipe was installed on or before November 9, 2006; or
(ii) six (6) inches from the bottom of the storage tank if the fill pipe was installed after November 9, 2006.

(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.

D.14.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

SECTION D.15 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – PICKLE LINES 1 AND 2

(a) 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 emissions unit 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.

(2) The PM (filterable) emissions from PL1 shall not exceed 0.01 gr/dscf.

(3) The PM_{10} (filterable and condensable) emissions from PL1 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.

(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 PM_{10} and $PM_{2.5}$ (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.

D.15.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from Pickle Line 1 and Pickle Line 2 (PL1 and PL2) each shall not exceed 61.0 pounds per hour each when operating at process weight rates of 250 tons per hour each.

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

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

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

D.15.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Pickle Lines 1 and 2 (PL1 and PL2) and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.15.4 Scrubber Operation

(a) In order to assure compliance with Condition D.15.1(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) In order to assure compliance with Condition D.15.1(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.

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

D.15.5 Scrubbers Parametric Monitoring

The Permittee shall monitor and record the pressure drop across the PL1 scrubber and PL2 scrubber at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit listed in the table below 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 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)
Pickle Line 1 Scrubber	2.8 - 4.8
Pickle Line 2 Scrubber	4.9 - 7.8

The instruments used for determining the pressure drop 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.15.6 Scrubber Flow Rate

(a) The Permittee shall monitor and record the flow rate of the fresh water make up flow into the PL1 and PL2 scrubbers at least once per day when the associated processes are in operation.

(b) The Permittee shall monitor and record the scrubber recirculating water flow at PL1 scrubber at least once per day when the associated processes are in operation.

(c) The Permittee shall determine the minimum flow rates from the latest valid stack tests that demonstrate compliance with limits in Conditions D.15.1(a) and D.15.1(b).

(d) On and after the date the stack test results are available, the Permittee shall maintain each flow rate at or above the minimum rate as observed during the latest compliant stack test.

(e) When for any one reading, the flow rate is below the above mentioned minimum, the Permittee shall take a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. A reading that is below the above mentioned minimum flow rate is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.15.7 Scrubber Failure 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 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.15.6, the Permittee shall maintain once per day records of the pressure drop of the PL1 scrubber used in conjunction with Pickle Line 1; and pressure drop of the 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) To document the compliance status with Condition D.15.7, the Permittee shall maintain once per day records of the scrubber recirculating water flow rate and fresh water make up flow into PL1 scrubber used in conjunction with Pickle Line 1; and the 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).

(c) 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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – COLD REVERSING MILL 1, COLD MILL BOILER (CMB #1)

(a) 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.

(b) 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 emissions unit 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 and State VOC BACT Limit [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2, 326 IAC 8-1-6, 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) stack 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 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):

(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/PM_{10} 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.16.3 Particulate Matter Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), the particulate emissions from the 34.0 MMBtu per hour heat input Cold Mill boiler (CMB #1) shall be limited to 0.44 pounds per MMBtu heat input.

D.16.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.16.5 Mist Eliminators

In order to assure compliance with Condition D.16.1, 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.16.6 Natural Gas Fuel

In order to assure compliance with Condition D.16.2, 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 2-7-5(1)][326 IAC 2-7-6(1)]

D.16.7 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, the Permittee shall take a 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.

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

D.16.8 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.16.7, 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.16.9 Reporting Requirements

A quarterly report of the information needed to document compliance with Condition D.16.1(a) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee’s obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

SECTION D.17 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – REVERSING AND TEMPERING (R/T) MILL

(a) Reversing and Tempering (R/T) Mill, (previously known as Temper Mill), identified as EU-14, constructed in 1995, permitted in 2021 to process high carbon steel when the RM mill is down for maintenance or repair, 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 emissions unit description box is descriptive information and does not constitute enforceable conditions.)

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

D.17.1 Reversing and Tempering (R/T) Mill PSD BACT [326 IAC 2-2]

Pursuant to PSD SSM 107-16823-00038, issued November 21, 2003, and 326 IAC 2-2, the Permittee shall comply with the following BACT requirements:

(a) The R/T Mill shall not exceed its annual maximum capacity of 2,190,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month on a rolling 12-month basis.

(b) This R/T Mill is allowed to reverse and temper.

(c) The VOC emissions from the R/T Mill shall not exceed 0.06 lb/ton.

(d) The visible emissions from the R/T Mill stack shall not exceed 5% opacity, based on a 6-minute average.

(e) The R/T Mill shall comply with the following requirements specified in PSD 107-3702-00038, issued March 28, 1995:

(1) When reversing, PM and PM_{10} 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.

(f) 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.17.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.17.3 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 when in reversing mode operation, 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, the Permittee shall take a 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.

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

D.17.4 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.17.3, 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.17.5 Reporting Requirements

A quarterly report of the information needed to document compliance with Condition D.17.1(a) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (35).

SECTION D.18 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – ALKALINE CLEANING STATION

(a) 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 emissions unit description box is descriptive information and does not constitute enforceable conditions.)

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

D.18.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the Galvanizing Line Alkaline Cleaning Station shall not exceed 54.7 pounds per hour when operating at a process weight rate of 140 tons per hour.

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

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

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

D.18.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the Galvanizing Line Alkaline Cleaning Station and the mist eliminators. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.18.3 Mist Eliminators

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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – ANNEALING FURNACES

(a) Eighteen (18) natural gas-fueled batch Annealing Furnaces, identified as EU-03, constructed in 2001 and modified in 2017 to replace the bases. 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).

(b) One (1) natural gas-fired annealing furnace, identified as AN-19, approved for construction in 2007 and modified in 2017 to replace the bases, 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 emissions unit 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 backup fuel.

D.19.2 PSD Limit [326 IAC 2-2]

The input of propane to annealing furnace AN-19, combined with the input of propane to emission units LP #4, LP #7, TD #3, MD #1, MD #2, LDS #1, LP #1, LP #2, LP #3, and LP #5 (permitted in Section D.29) shall be limited to less than 1,089 thousand gallons of propane (LPG) per twelve consecutive month period, with compliance determined at the end of each month. NOx emissions shall not exceed 0.208 pounds per MMBtu when burning propane.

Compliance with this limit will ensure that the potential to emit from the modification performed under SSM 107-23609-00038 is less than forty (40) tons of NOx per year and will render the requirements of 326 IAC 2-2 (PSD) not applicable.

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

D.19.3 Vendor Certification

In order to assure compliance with Condition D.19.1(a), (b), and (c), the Permittee shall submit the vendor design guarantees for the above-mentioned batch annealing furnace.

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

D.19.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.19.2, 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.19.2. 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.19.5 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.19.2 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

SECTION D.20 RESERVED

SECTION D.21 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

COLD MILL – ACID REGENERATION

(a) 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 emissions unit 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 107-2764-00038 (November 30, 1993), AA 107-9857-00038 (September 18, 1998), PSD SSM 107-16823-00038 (November 21, 2003), and PSD SSM 107-24348-00038 (December 3, 2007), 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 PM_{10} 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 stack shall not exceed 5% opacity, based on a 6-minute average.

(h) 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.21.2 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 Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

D.21.3 Scrubber Monitoring

(a) The Permittee shall continuously monitor and record 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.

(b) The Permittee shall determine the minimum 3-hour average flow rate from the latest valid stack test that demonstrates compliance with limits in Condition E.2.2.

(c) On and after the date the stack test results are available, the Permittee shall maintain a flow rate at or above the minimum 3-hour average rate as observed during the latest compliant stack test.

(d) 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.

(e) If the flow rate is below the above mentioned minimum , Permittee shall take a 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 or failure to correct the malfunction within a reasonable time shall be considered a deviation from this permit.

(f) 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.21.4 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).

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

D.21.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.21.3, 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.21.3(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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

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

(a) Thirty six (36) Main Burners, identified as PHB #1 – PHB #36, permitted in 2019, with a heat input capacity of 1.50 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 54.30 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 galvanizing line has an electrostatic oiler. The three (3) Auxiliary Burners exhaust to the atmosphere.

(b) Additional burners as follows:

(1) Forty four (44) Burners, identified as RB#1 – RB#44, permitted in 2019, 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 burners use natural gas as primary fuel and propane as backup fuel and exhaust to stack S-27.

Under 40 CFR Part 63, Subpart DDDDD, these units are considered affected source.

(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.

(c) 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) One (1) chem (roll) coater, identified as CHEM, constructed in 2020, permitted in 2022 with a nominal coating application rate of 0.45 gal/min, using no control, and exhausting indoors.

Under 40 CFR 60, Subpart TT, this is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this is considered an affected source.

(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.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 1.50 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.

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/PM_{10} emissions from the 36 Main Burners, each at 1.50 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 exceed 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/PM_{10} 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 1.50 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 1.50 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 PSD Minor Limits [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

(a) The VOC input, including coatings, dilution solvents and cleaning solvents, to the Chem Coater shall be less than 39.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, shall limit the potential to emit from the 2022 Modification permitted under SSM No. 107-44951-00038 VOC to less than forty (40) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

D.22.6 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-4]

Pursuant to 326 IAC 8-2-4 (Coil Coating Operations), the Chem Coater shall not discharge into the atmosphere VOC in excess of two and six-tenths (2.6) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator from prime and topcoat or single coat operations.

D.22.7 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.22.8 Vendor Certification

In order to assure compliance with Conditions D.22.1(a) and (b), the Permittee shall submit the vendor design guarantees for the thirty-six (36) replacement Main Burners (PHB#1 - PHB#36) and the forty-four replacement radiant tube section burners (RB#1 - RB#44).

D.22.9 Volatile Organic Compounds [326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC limitations contained in Conditions D.22.5 and D.22.6 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the “as supplied” and “as applied” VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

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

D.22.10 Record Keeping Requirements [326 IAC 2-7-5(3)(A)(iii)] [326 IAC 3-5]

(a) To document the compliance status with Conditions D.22.5 and D.22.6, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC limitations established in Conditions D.22.5 and D.22.6.

(1) The VOC of each coating material and solvent used less water.

(2) The amount of coating material and solvent less water used on monthly basis.

(A) Records shall include purchase orders, invoices, and safety data sheets (SDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.

(3) The cleanup solvent usage for each month.

(4) The total VOC input, including coatings, dilution solvents, and cleaning solvents, for each month and 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.22.11 Reporting Requirements

The Permittee shall submit the following information on a quarterly basis:

(a) A quarterly summary of the information to document the compliance status with Condition

D.22.5, shall be submitted using the reporting forms located at the end of this permit, or the equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition.

The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1(35).

SECTION D.23 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – WELDING

(k) 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.

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

(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.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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SHEARS AND SIDE TRIMMERS

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

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

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

(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.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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

HOT STRIP MILL & TUNNEL FURNACE SYSTEM

(a) 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.

(b) 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. Approved in 2023 for a modification to add or replace burners so that the total heat input capacity of the burners is increase from 50 MMBtu/hr to 60 MMBtu/hr.

(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. Approved in 2023 for a modification to add or replace burners so that the total heat input capacity of the burners is increase from 50 MMBtu/hr to 60 MMBtu/hr.

(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 emissions unit 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 PM_{10} 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 Shuttle and Snub 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, shuttle furnaces No. 1 and No. 2, and the snub furnace, shall comply with the following requirements:

(a) The 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 Snub Furnace shall each not exceed 100 pounds per million cubic feet (lb/MMCF) of natural gas burned.

(2) The VOC emissions from Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 5.5 lb/MMCF.

(3) SO2 emissions from shuttle furnaces No. 1 and No. 2, and the snub furnace shall not exceed 0.6 lb/MMCF.

(4) The PM_{10} and $PM_{2.5}$ (Filterable and Condensable) emissions from 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 Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall each not exceed 84 lbs/MMCF.

(c) The 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 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 Shuttle Furnace Nos. 1 and 2 and Snub Furnace shall

each not exceed 0.001 lb/gal of propane burned.

(3) The PM_{10} and $PM_{2.5}$ (Filterable and Condensable) emissions from 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.

(f) 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:

(1) The NOx emissions from the snub furnace shall be limited to 100 lbs per million cubic feet of natural gas burned.

(2) The snub furnace shall be equipped and operated with low NOx burners.

D.25.3 Tunnel Furnaces No. 1 and No. 2 - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10} and $PM_{2.5}$

(a) The PM, PM_{10} and $PM_{2.5}$, each emission from Tunnel Furnace No. 1 shall not exceed 0.0076 lb/MMBtu.

(b) The PM, PM_{10} and $PM_{2.5}$, each emission from Tunnel Furnace No. 2 shall not exceed 0.0076 lb/MMBtu.

NOx

(c) The NOx emissions from Tunnel Furnace No. 1 shall not exceed 0.07 lb/MMBtu.

(d) The NOx emissions from Tunnel Furnace No. 2 shall not exceed 0.07 lb/MMBtu.

(e) The NOx emissions from Tunnel Furnaces No. 1 and No. 2 shall be controlled by low NOx burners (LNB) and good combustion practices.

SO_2

(f) The SO_2 emissions from Tunnel Furnaces No. 1 and No. 2 shall not exceed 0.0006 lb/MMBtu.

CO

(g) The CO emissions from Tunnel Furnaces No. 1 and No. 2 shall not exceed 0.07 lb/MMBtu.

VOC

(h) The VOC emissions from Tunnel Furnaces No. 1 and No. 2 shall not exceed 0.0054 lb/MMBtu.

Pb

(i) The lead (Pb) emissions from Tunnel Furnaces No. 1 and No. 2 shall not exceed 0.0005 lb/MMscf.

CO_2e

(j) The CO_2e emissions from Tunnel Furnaces No. 1 and No. 2 shall not exceed 117.1 lb/MMBtu.

(k) The CO_2e emissions from the each of Tunnel Furnaces No. 1 and No. 2 shall not exceed 30,774 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

PM, PM_{10}, $PM_{2.5}$, SO_2, CO, Pb, Hg, Be, CO_2e

(l) Only pipeline quality natural gas fuel shall be combusted at Tunnel Furnaces No. 1 and No. 2.

PM, PM_{10}, $PM_{2.5}$, VOC, CO, CO_2e

(m) The PM, PM_{10}, $PM_{2.5}$, VOC, CO, CO_2e emissions from Tunnel Furnaces No. 1 and No. 2 shall be minimized using good combustion practices.

D.25.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.25.5 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.25.3, no later than one hundred and eighty (180) days after Tunnel Furnaces No. 1 or No. 2 modification, the Permittee shall perform PM, PM_{10}, $PM_{2.5}$, NOx, VOC and CO testing on one of Tunnel Furnaces from No. 1 and No. 2 utilizing methods as approved by the commissioner. The test shall be repeated at least once every five years from the date of the most recent valid compliance demonstration such that time period for the testing on any Tunnel Furnaces from No. 1 and No. 2 shall not exceed 10 years.

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.

PM_{10} and $PM_{2.5}$ includes filterable and condensable particulate matter.

D.25.6 Greenhouse Gases (GHGs) Calculations

To determine the compliance status with Condition D.25.3(k), the following equation shall be used to determine the CO_2e emissions from Tunnel Furnaces No. 1 and No. 2:

CO_2e emissions (tons/month) = Fuel Usage (MMcf/month) x [(119,315 (lb CO_2/MMcf) x 1 + 2.2 (lb CH_4/MMcf) x 25 + 0.22 (lb N_2O/MMcf) x 298] x 1/2000 (ton/lb)

Where:

lb/MMcf emission factors are based on 40 CFR Part 98 Tables C-1 and C-2.

Global warming potentials (GWP) values 1, 25 and 298 are 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.25.7 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) To document the compliance status with Condition D.25.3(k), the Permittee shall maintain monthly records of the fuel usage and CO2e emissions from each of Tunnel Furnaces No. 1 and No. 2.

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

SECTION D.26 RESERVED

SECTION D.27 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – DEGREASING

(o) 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 emissions unit 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 Degreaser Control Equipment and Operating Requirements [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2(Cold Cleaner Degreaser Control Equipment and Operating Requirements), the Permittee shall:

(a) Ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a facility for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases.

(5) Provide a permanent, conspicuous label summarizing the operating requirements in subdivisions (3), (4), (6), and (7).

(6) Store waste solvent only in covered containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

D.27.2 Material Requirements for Cold Cleaner Degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), the Permittee shall not operate a cold cleaning degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

D.27.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility and its associated control device. 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 Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.27.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.27.2, the Permittee shall maintain the following records for each purchase of solvent used in the cold cleaner degreasing operations. These records shall be retained on-site or accessible electronically for the most recent three (3) year period and shall be reasonably accessible for an additional two (2) year period.

(1) The name and address of the solvent supplier.

(2) The date of purchase (or invoice/bill dates of contract servicer indicating service date).

(3) The type of solvent purchased.

(4) The total volume of the solvent purchased.

(5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

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

SECTION D.28 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

MELT SHOP – MATERIAL TRANSFER STATION

(a) 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.

(b) 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.

(c) 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 emissions unit 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 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.28.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

(a) 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

(b) Pursuant to 326 IAC 6-3-2, the Material transfer station #2 and Material transfer station #3 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

D.28.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

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

SECTION D.29 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

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

(a) 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 Baghouse 1 and Meltshop Baghouse 2). 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.

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 Baghouse 1 and Meltshop Baghouse 2 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 Baghouse 1 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 Baghouse 1 exhausts to a stack identified as BH1.

(B) The Meltshop Baghouse 2 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 Baghouse 2 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.

(b) 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 Baghouse 1 which exhausts to a stack identified as BH1, and Meltshop Baghouse 2 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.

(c) 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.

(d) 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 Baghouse 1 identified as vent BH1 which exhausts to stack BH1 or Meltshop EAF Baghouse 2 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, and AOD. Both Casters approved in 2023 for modification to produce thicker slabs with installation of new molds, strand guides, and segments etc.

(e) 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.

(f) 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 #6a, 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.

(2) 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.

(3) 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.

(4) 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.

(5) Tundish dryout stations, as follows:

(A) One (1) natural gas-fired tundish dryout station using propane as a backup fuel, identified as TD #1, constructed in 1989, modified in 2015 with replacement burners, with a maximum heat input capacity of 3.00 MMBtu/hr, exhausting to stack S-10.

(B) One (1) natural gas-fired tundish dryout station using propane as a backup fuel, identified as TD#2, constructed in 1990, modified in 2018 with replacement burners, with a maximum heat input capacity of 3.00 MMBtu/hr, exhausting to stack S-10.

(6) 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.

(7) 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.

(8) 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.

(9) 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)).

(10) 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.

(11) 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 emissions unit 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)).

(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.

(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.

(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.

(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 PM_{10}/$PM_{2.5}$ (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/PM_{10} 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, or AOD.

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.

(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.

(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.

(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.

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.29.12(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/PM_{10} 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/PM_{10} 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 #6a 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/PM_{10} (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/PM_{10} (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 (TNP1 through TNP8) shall comply with the following BACT requirements:

(1) The Tundish Nozzle Preheaters (TNP1 through TNP8) 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 (TNP1 through TNP8) 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 (TNP1 through TNP8) shall not exceed 5.5 pounds per million cubic feet of natural gas burned, 0.035 pounds per hour (total).

(iii) The SO_2 emissions from the Tundish Nozzle Preheaters (TNP1 through TNP8) shall not exceed 0.6 pounds per million cubic feet of natural gas burned, 0.004 pounds per hour (total).

(iv) The PM_{10} and $PM_{2.5}$ (filterable and condensable) emissions from the Tundish Nozzle Preheaters (TNP1 through TNP8) 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 (TNP1 through TNP8) 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 (TNP1 through TNP8) shall not exceed 84 pounds per million cubic feet of natural gas burned, 0.53 pounds per hour (total).

(3) The Tundish Nozzle Preheaters (TNP1 through TNP8) 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 (TNP1 through TNP8) shall not exceed 0.013 lb/gal of propane burned.

(ii) The VOC emissions from the Tundish Nozzle Preheaters (TNP1 through TNP8) shall not exceed 0.001 lb/gallon of propane burned.

(iii) The Particulate Matter (filterable) emissions from the Tundish Nozzle Preheaters (TNP1 through TNP8) shall not exceed 0.002 lb/gal of propane burned.

(iv) The PM_{10} and $PM_{2.5}$ (Filterable and Condensable) emissions from Tundish Nozzle Preheaters (TNP1 through TNP8) shall not exceed 0.007 lb/gal of propane burned.

(5) The Tundish Nozzle Preheaters (TNP1 through TNP8) 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 SO_2 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 PM_{10} and $PM_{2.5}$ (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 PM_{10} and $PM_{2.5}$ (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 Stations (TD #1 and TD #2) 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 Stations (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/PM_{10} 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) SO_2 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 Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

(a) 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.

(b) NOx emissions shall not exceed 0.208 pounds per MMBtu when burning propane.

Compliance with these limits shall limit the potential to emit from SSM 107-23609-00038 of NOx to less than forty (40) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

D.29.9 Particulate Matter Limitations [326 IAC 6-3-2]

(a) 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)
EAFs	502	69.0
AOD	502	69.0
CC #1 and CC #2	502	69.0
DTF	502	69.0
15 Belt Conveyors	200	58.5
20 Weight Hoppers	200	58.5
Flux and alloy material handling system	502	69.0

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

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.29.10 Continuous Casters CC #1 and CC #2 - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10}, $PM_{2.5}$

(a) The PM emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 2.8 pound per hour.

(b) The PM_{10} emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 0.45 pound per hour.

(c) The $PM_{2.5}$ emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 0.45 pound per hour.

(d) The PM, $PM1_0$, $PM_{2.5}$ emissions from the lower mold portions of the Continuous Casters CC #1 and CC #2 exhausting through the steam vents shall be minimized using good operating practices.

(e) The PM, PM_{10}, $PM_{2.5}$ emissions from the upper mold portions of the Continuous Casters CC #1 and CC #2 shall be controlled by baghouse.

NOx

(f) The NOx emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 0.08 pound per hour.

(g) The NOx emissions from the Continuous Casters CC #1 and CC #2 shall be minimized using good operating practices.

SO_2

(h) The SO_2 emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 0.23 pounds per hour.

CO

(i) The CO emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 6.03 pound per hour.

(j) The CO emissions from the Continuous Casters CC #1 and CC #2 shall be minimized using good operating practices.

VOC

(k) The VOC emissions from the Continuous Casters CC #1 and CC #2 steam vent shall not exceed 0.24 pounds per hour.

(l) The VOC emissions from the Continuous Casters CC #1 and CC #2 shall be minimized using good operating practices.

D.29.11 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the emission units identified in this Section D.29 and their control devices except for emission units identified in (a)(1), (a)(2), (a)(4), (a)(7), (a)(8), (a)(9), and (f)(11). Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.29.12 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.29.13 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.29.14 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)) 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.29.15 Testing Requirements [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, PM_{10} and $PM_{2.5}$ 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 Baghouse 1 and Baghouse 2 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 Baghouse 1 stack and Baghouse 2 stack,

(2) Meltshop Roof monitor, and

(3) EAF Dust Handling System,

(d) The PM, PM_{10}, $PM_{2.5}$, 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.29.17.

(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.29.16 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.29.10, no later than one hundred and eighty (180) days after Continuous Caster CC #1 or CC #2 are both modified, the Permittee shall perform PM, PM_{10}, $PM_{2.5}$, NOx, VOC and CO testing on continuous casters CC #1 and CC #2 utilizing methods as approved by the commissioner. The test shall be repeated at least once every five 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.

PM_{10} and $PM_{2.5}$ includes filterable and condensable particulate matter.

D.29.17 CO, SO_2, and NOx Continuous Emission Rate Monitoring Requirement [326 IAC 2-2] [326 IAC 3-5]

(a) CO, SO_2, 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, SO_2, 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, SO_2, 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.

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

D.29.18 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 Baghouse 1 roof monitor or stack and Meltshop Baghouse 2 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.

D.29.19 Maintenance of CEMS [326 IAC 2-7-5(3)(A)(iii)]

(a) In the event that a breakdown of the SO_2, 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 SO_2, 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.

(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.

D.29.20 Bag Leak Detection System (BLDS)

(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 Baghouse 1 (BLDS 1) shall be installed according to the provisions of Condition D.29.20(b) and operated according to the conditions in D.29.20(d). The BLDS for Meltshop Baghouse 2 (BLDS 2) shall be installed according to the provisions of Condition D.29.20(c) and operated according to the conditions in D.29.20(d).

(b) The BLDS (BLDS 1) for Meltshop Baghouse 1 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 Baghouse 2 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.29.19(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.29.20(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.29.21 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 – Baghouse 1 and Baghouse 2	Method 9 visual observations.	Continuous measurement of relative PM loading in the baghouse stack.	Visual inspection.
II. Indicator Range	PM emission limit of 0.0018 grain/dscf	An excursion is defined as an opacity measurement exceeding 3% on a 6-minute average.	Predetermined increases in PM loading sets off an alarm, which the operator will respond to.	An excursion is defined as failure to perform the bi-annual inspection.
III. Performance Criteria				
A. Data Representativeness	U.S. EPA Method 5, for PM or other Methods approved by the 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	Continuous relative PM loading measurements.	Bi-annual

EAFs/AODs and LMFs				
PARAMETER	INDICATOR NO. 1	INDICATOR NO. 2	INDICATOR NO. 3	INDICATOR NO. 4
		unless inclement weather).		
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.29.22 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.29.18(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.29.21 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.29.23 Reporting Requirements

(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 Baghouse 1 roof monitor, Meltshop Baghouse 2 stack and Meltshop roof monitor; and

This reporting requirement also satisfies the semiannual exceedance reporting required under 40 CFR 60.276a(b) and (g).

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

(c) The Permittee shall submit a semi-annual report for each BLDS, the following information:

(1) All visible emission data where six minute averages exceeded 3 percent opacity;

(2) The dates and times when the alarm sounded and procedures to initiate corrective action were not initiated within one (1) hour, and the date and time when corrective actions were initiated;

(3) The dates and times when the alarm sounded and the cause of the alarm was not alleviated within three (3) hours, and the dates and times when the cause of the alarms was alleviated, and;

(4) The dates and times that the BLDS was not operational, and the reason(s) why it was not operational.

(d) The Permittee shall submit quarterly report to document compliance with the propane usage limit required in Condition D.29.8.

SECTION D.30 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

INSIGNIFICANT ACTIVITIES – MELTSHOP

(p) 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 emissions unit 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 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

Steel Technologies Operations:

(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.

Insignificant Activities

(r) Natural gas fired comfort heaters, consisting of:

(1) Two (2) natural gas fired comfort heaters, each with a maximum rated heat input of 1.8 MMBtu/hr, installed in 2016.

(2) One (1) natural gas fired comfort heater, with a maximum rated heat input of 0.1 MMBtu/hr, installed in 2016.

(3) One (1) natural gas fired comfort heater, with a maximum rated heat input of 0.08 MMBtu/hr, installed in 2016.

(4) Two (2) natural gas fired comfort heaters, each with a maximum rated heat input of 1.0 MMBtu/hr, installed in 2017.

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

Pursuant to 326 IAC 6-2-2 (Particulate Emission Limitations for Sources of Indirect Heating), the PM emissions from the following units shall be limited to Pt pounds per MMBtu heat input, as follows:

Emission Unit	MMBtu/hr	Pt (lb/MMBtu)
6 Indirect Fired Air Heaters	each 0.8 4.8 Total	0.29
2 Comfort Heaters	each 1.8 3.6 Total	0.29
1 Comfort Heater	0.1	0.29
1 Comfort Heater	0.08	0.29
2 Comfort Heaters	each 1.0 2.0 Total	0.29

SECTION D.32 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

Direct Reduced Iron (DRI) Handling System

(a) Rail Unload Hopper, identified as HP1, constructed in 2012, with a designed capacity of 400 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(b) Vibratory Screening Feeder, identified as VF1, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(c) Rail Unload Fines Drag Conveyor, identified as DC1, constructed in 2012, with a designed capacity of 10 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(d) Rail Unload Fines Bagging Station, identified as BS1, constructed in 2012, using Meltshop Baghouse 1 or Meltshop Baghouse 2 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, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(f) Two (2) Recirculating Conveyors, identified as SC1 and SC2 constructed in 2012, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(g) Discharge Diverter, identified as DV1, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

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

(i) Rail Unload Belt Conveyor, identified as BC1, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(j) Discharge Diverter, identified as DV2, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(k) Silo Loading Belt Conveyor, identified as BC2, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(l) Iron Carbide Silo, identified as ICS1, constructed in 1994 and modified in 2012, with a designed capacity of 250 tons per hour and a designed storage capacity of 3585 tons, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(m) Vibratory Screening Feeder, identified as VF2, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(n) Silo Fines Bagging Station, identified as BS2, constructed in 2012, using Meltshop Baghouse 1 or Meltshop Baghouse 2 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, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(p) Two (2) Recirculating Conveyors, identified as SC3 and SC4, constructed in 2012, with a designed capacity of 25 tons per hour each, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(q) Discharge Diverter, identified as DV3, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

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

(s) Silo Unloading Belt Conveyor, identified as BC3, constructed in 2012, with a designed capacity of 250 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(t) Day Bin, identified as DB1, constructed in 2012, with a designed capacity of 250 tons per hour and a designed storage capacity of 200 tons, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(u) Weigh Belt Feeder, identified as WB1, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(v) South Scrap Bay Belt Conveyor, identified as BC4, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(w) South Furnace Belt Conveyor, identified as BC10, constructed in 2005 and modified in 2012, with a designed capacity of 265 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(x) Weigh Belt Feeder, identified as WB2, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(y) North Scrap Bay Belt Conveyor, identified as BC5, constructed in 2012, with a designed capacity of 225 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(z) Belt Conveyor, identified as BC7, constructed in 2005 and modified in 2012, with a designed capacity of 265 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(aa) North Furnace Belt Conveyor, identified as BC9, constructed in 2005 and modified in 2012, with a designed capacity of 265 tons per hour, using Meltshop Baghouse 1 or Meltshop Baghouse 2 as control, exhausting to stack BH1 or BH2 accordingly.

(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.32.1 PM and PM_{10} 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 PM_{10} per year and therefore will render the requirements of 326 IAC 2-2 not applicable to the DRI handling system (SSM No. 107-30886-00038).

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
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 D.33 RESERVED

SECTION D.34 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

D.34 – INSIGNIFICANT ACTIVITIES – Indirect Heat Units

(q) 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.

(1) One (1) natural gas fired hot water heater, constructed in 2000, with a maximum heat input capacity of 1.0 MMBtu/hr. This unit is used to heat the main natural gas supply to prevent condensation in the supply line.

Under 40 CFR 63, Subpart DDDDD, this is an affected source.

(2) One (1) QA/QC furnace, constructed in 1997, with a maximum of 8 burners, each with a maximum heat input capacity of 0.084 MMBtu/hr.

Under 40 CFR 63, Subpart DDDDD, this is an affected source.

(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.34.1 Particulate Emissions [326 IAC 6-2-4]
Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), the PM emissions from the following units shall be limited to Pt pounds per MMBtu heat input, as follows:

Emission Unit	Unit ID	Pt (lb/MMBtu)
Hot water heater	none	0.36
QA/QC furnace	none	0.36

SECTION D.35 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

D.35 - Continuous Galvanizing Line (CGL)

(a) One (1) Continuous Galvanizing Line (CGL), identified as CC-CGL, approved in 2023 for construction, consisting of the following:

(1) One (1) cleaning section, with a maximum capacity of 76 tons per hour, using hot caustic detergent spray to remove residual fines and oils, using wet scrubber (CGL-WS) as control and exhausting to stack (CGL#1).

(2) One (1) natural gas fired hot water circuit burner, with a maximum capacity of 9.0 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CGL#2).

Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(3) One (1) natural gas fired annealing furnace, with a maximum capacity of 53.1 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CGL#3).

Under 40 CFR 63, Subpart DDDDD, radiant tube burners section of this unit is considered an affected source.

(4) One (1) chemical passivation roll coater, with a maximum capacity of 76 tons per hour, without control and exhausting to stack (CGL#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(5) One (1) electrostatic oiler, with a maximum capacity of 76 tons per hour, without control and exhausting to stack (CGL#5).

(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.35.1 CGL cleaning section - PM, PM_{10}, $PM_{2.5}$ PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10} and $PM_{2.5}$

(a) The PM, PM_{10} and $PM_{2.5}$, each emission from the CGL cleaning section scrubber exhaust shall not exceed 0.003 gr/dscf.

(b) The PM/PM_{10}/$PM_{2.5}$ emission from the CGL cleaning section shall be controlled by wet scrubber.

(c) The process fugitive emissions shall be minimized using the following work practices:

(i) The building doors shall be closed when CGL cleaning section is in operation, except during loading and loading operation. This requirement does not apply when there are operational and safety issues for the operation of CGL line.

(ii) The hood system shall be designed using the guidelines from the following reference manual published by EPA:

Technical Manual: Hood System Capture of Process Fugitive Particulate Emissions, EPA/600/S7-86/016 June 1986

D.35.2 CGL hot water circuit burner - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10} and $PM_{2.5}$

(a) The PM (filterable) emission from the CGL hot water circuit burner shall not exceed 1.90 lb/MMscf.

(b) The PM_{10} and $PM_{2.5}$, each emission from the CGL hot water circuit burner shall not exceed 7.60 lb/MMscf.

(c) The PM, PM_{10} and $PM_{2.5}$ emissions from the CGL hot water circuit burner shall be minimized using good combustion practices.

(d) Only pipeline quality natural gas shall be combusted.

NOx

(e) The NOx emissions from the CGL hot water circuit burner shall not exceed 50.00 lb/MMscf.

(f) The CGL hot water circuit burner shall be equipped with low NOx burners (LNB).

(g) The NOx emissions from the CGL hot water circuit burner shall be minimized using good combustion practices.

(h) Only pipeline quality natural gas shall be combusted.

SO_2

(i) The SO_2 emissions from the CGL hot water circuit burner shall not exceed 0.0006 lb/MMBtu.

(j) Only pipeline quality natural gas fuel shall be combusted.

CO

(k) The CO emissions from the CGL hot water circuit burner shall not exceed 84.0 lb/MMscf.

(l) The CO emissions from the CGL hot water circuit burner shall be minimized using good combustion practices.

VOC

(m) The VOC emissions from the CGL hot water circuit burner shall not exceed 5.50 lb/MMscf.

(n) The VOC emissions from the CGL hot water circuit burner shall be minimized using good combustion practices.

Pb

(o) The lead (Pb) emissions from the CGL hot water circuit burner shall not exceed 0.0005 lb/MMscf.

(p) Only pipeline quality natural gas fuel shall be combusted.

CO2e

(q) The CO2e emissions from the CGL hot water circuit burner shall not exceed 117.1 lb/MMBtu.

(r) The CO2e emissions from the CGL hot water circuit burner shall not exceed 4,616 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(s) The CO2e emissions from the CGL hot water circuit burner shall be minimized using good combustion practices.

(t) Only pipeline quality natural gas shall be combusted.

Be

(u) Only pipeline quality natural gas fuel shall be combusted.

Hg

(v) Only pipeline quality natural gas fuel shall be combusted.

D.35.3 CGL annealing furnace - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10} and $PM_{2.5}$

(a) The PM (Filtrable), PM_{10} and $PM_{2.5}$, each emission from the CGL annealing furnace shall not exceed 0.0012 lb/MMBtu.

(b) The PM, PM_{10} and $PM_{2.5}$ emissions from the CGL annealing furnace shall be minimized using good combustion practices.

(c) Only pipeline quality natural gas shall be combusted in the CGL annealing furnace burners.

NOx

(d) The NOx emissions from the CGL annealing furnace shall not exceed 0.05 lb/MMBtu.

(e) The NOx emissions from the CGL annealing furnace shall be minimized using good combustion practices.

(f) The CGL annealing furnace shall be equipped with low NOx burners (LNB).

SO_2

(g) The SO_2 emissions from the CGL annealing furnace shall not exceed 0.0006 lb/MMBtu.

(h) Only pipeline quality natural gas fuel shall be combusted.

CO

(i) The CO emissions from the CGL annealing furnace shall not exceed 0.082 lb/MMBtu.

(j) The CO emissions from the CGL annealing furnace shall be minimized using good combustion practices and use of natural gas fuel.

VOC

(k) The VOC emissions from the CGL annealing furnace shall not exceed 0.0054 lb/MMBtu.

(l) The VOC emissions from the CGL annealing furnace shall be minimized using good combustion practices.

(m) Only pipeline quality natural gas fuel shall be combusted.

Pb

(n) The lead (Pb) emissions from the CGL annealing furnace shall not exceed 0.0005 lb/MMCF.

(o) Only pipeline quality natural gas fuel shall be combusted.

CO2e

(p) The CO2e emissions from the CGL annealing furnace shall not exceed 117.1 lb/MMBtu.

(q) The CO2e emissions from the CGL annealing furnace shall not exceed 27,234 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(r) The CO2e emissions from the CGL annealing furnace shall be minimized using good combustion practices.

(s) Only pipeline quality natural gas fuel shall be combusted.

Be

(t) Only pipeline quality natural gas fuel shall be combusted.

Hg

(u) Only pipeline quality natural gas fuel shall be combusted.

D.35.4 CGL chemical passivation - VOC PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

(a) The Permittee shall not cause to be discharged into the atmosphere more than.0.28 kilogram VOC per liter of coating solids applied for each calendar month.

(b) Only waterborne, low solvent or organic coating shall be used.

D.35.5 CGL electrostatic oiler - VOC PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

(a) The VOC emissions from the CGL electrostatic oiler shall not exceed 0.0009 lb/hour.

(b) The VOC emissions from the CGL electrostatic oiler shall be minimized using low VOC oils (oil VOC 9.0% by weight) and good operating practices.

D.35.6 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-4]

Pursuant to 326 IAC 8-2-4 (Coil Coating Operations), the CGL chemical passivation shall not discharge into the atmosphere VOC in excess of two and six-tenths (2.6) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator from prime and topcoat or single coat operations.

D.35.7 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.35.8 Particulate Control

In order to assure compliance with Condition D.35.1, scrubber CGL-WS for particulate control shall be in operation and control emissions from the CGL cleaning section at all times the CGL cleaning section is in operation.

D.35.9 Testing Requirements [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Condition D.35.1(a), no later than one hundred and eighty (180) days after the initial startup of CGL cleaning section, the Permittee shall perform PM, PM_{10} and $PM_{2.5}$ testing on CGL cleaning section utilizing methods as approved by the commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be performed 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.

PM_{10} and $PM_{2.5}$ includes filterable and condensable particulate matter.

(b) In order to demonstrate compliance with Condition D.35.3(a), no later than one hundred and eighty (180) days after the initial startup of CGL annealing furnace, the Permittee shall perform PM, PM_{10} and $PM_{2.5}$ testing on CGL annealing furnace utilizing methods as approved by the commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be performed 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.

PM_{10} and $PM_{2.5}$ includes filterable and condensable particulate matter.

D.35.10 Volatile Organic Compounds [326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC limitations contained in Conditions D.35.4(a) and D.35.6 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the “as supplied” and “as applied” VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.35.11 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

Compliance with the VOC content limit in Condition D.35.6 shall be determined pursuant to 326 IAC 8-1-2(a)(7), using a volume weighted average of coatings on a daily basis. This volume weighted average shall be determined by the following equation:

$$A = [\sum (C \times U) / \sum U]$$

Where:

A is the volume weighted average in pounds VOC per gallon less water as applied;

C is the VOC content of the coating in pounds VOC per gallon less water as applied; and

U is the usage rate of the coating in gallons per day.

(b) Compliance with the VOC content limit in Conditions D.35.4 shall be determined using a volume weighted average of coatings on a monthly basis. The Permittee shall use the procedures in 40 CFR 60.463(b) and (c)(1) to document compliance.

D.35.12 Greenhouse Gases (GHGs) Calculations

To determine the compliance status with Conditions D.35.2(r) and D.35.3(q), the following equation shall be used to determine the CO2e emissions from the CGL hot water circuit burner and CGL annealing furnace:

CO2e emissions (tons/month) = Fuel Usage (MMcf/month) x [(119,315 (lb CO2/MMcf) x 1 + 2.2 (lb CH4/MMcf) x 25 + 0.22 (lb N2O/MMcf) x 298] x 1/2000 (ton/lb)

Where:

lb/MMcf emission factors are based on 40 CFR Part 98 Tables C-1 and C-2.

Global warming potentials (GWP) values 1, 25 and 298 are from Table A-1 of 40 CFR Part 98 Subpart A.

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

D.35.13 Parametric Monitoring - Scrubber Pressure Drop [40 CFR 64]

The Permittee shall monitor and record the pressure drop across the scrubber CGL-WS at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is between 1.0 and 12.0 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. A pressure drop reading that is outside the above mentioned range(s) is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.35.14 Scrubber Flow Rate [40 CFR 64]

(a) The Permittee shall monitor and record the flow rate of the wet scrubber CGL-WS at least once per day when the associated processes are in operation. From the date of startup until the stack test results are available, the Permittee shall maintain the flow rate at or above the minimum flow rate specified by the Scrubber manufacturer.

(b) The Permittee shall determine the minimum flow rate from the latest valid stack test that demonstrates compliance with limits in Condition D.35.1.

(c) On and after the date the stack test results are available, the Permittee shall maintain a flow rate at or above the minimum rate as observed during the latest compliant stack test.

(d) When for any one reading, the flow rate is below the above mentioned minimum, the Permittee shall take a 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. A reading that is below the above mentioned minimum flow rate is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.35.15 Scrubber Failure Detection

In the event that a scrubber malfunction has been observed:

(a) For a scrubber controlling emissions from a process operated continuously, a failed unit and the associated process will be shut down immediately until the failed unit has 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).

(b) For a scrubber 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).

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

D.35.16 Record Keeping Requirements

(a) To document the compliance status with Conditions D.35.4 and D.35.6, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC limit established in Conditions D.35.4 and D.35.6.

(1) The VOC content of each coating material and solvent used less water.

(2) The amount of each coating material and solvent used on daily basis.

(A) Records shall include purchase orders, invoices, and safety data sheets (SDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvent.

(3) The VOC content of each coating less water as applied.

(4) The volume weighted average VOC content less water of the coatings used for each day.

(5) Proportion of solids in each coating used.

(b) To document the compliance status with Condition D.35.13, the Permittee shall maintain records of pressure drop for the scrubber. The Permittee shall include in its daily record when a pressure drop is not taken and the reason for the lack of pressure drop record (e.g., the process did not operate that day).

(c) To document the compliance status with Condition D.35.14, the Permittee shall maintain daily records of flow rate for the scrubber. The Permittee shall include in its daily record when a flow rate is not taken and the reason for the lack of flow rate record (e.g., the process did not operate that day).

(d) To document the compliance status with Conditions D.35.2(r) and D.35.3(q), the Permittee shall maintain records of the fuel usage and CO2e emissions from CGL hot water circuit burner and the CGL annealing furnace.

(e) To document compliance with Condition D.35.5, the Permittee shall maintain monthly records of electrostatic oil usage and the VOC content.

(f) To document the compliance status with Condition D.35.1(c), the Permittee shall maintain records of the dates when building doors are not closed while CGL cleaning section is in operation and the operational and safety issues for those dates. The Permittee shall include in its record when date is not recorded and the reason for the lack of record of the date (e.g., the process did not operate that day).

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

SECTION D.36 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

D.36 - Continuous Coating Line (CCL)

(a) Continuous Coating Line (CCL), identified as CC-CCL, approved in 2023 for construction, consisting of the following:

(1) One (1) precleaning section and one (1) cleaning section, with a maximum capacity of 73.8 tons per hour, using hot caustic detergent for cleaning, using ~~a~~ wet scrubbers (CCL-WS1 and CCL-WS2) as control and exhausting to stacks (CC#1 and CC#2, respectively).

(2) One (1) natural gas fired hot water circuit burner, with a maximum capacity of 5.12 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CC#3).

Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(3) One (1) chemical passivation roll coater, with a maximum capacity of 73.9 tons per hour, without control and exhausting to stack (CC#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(4) One (1) prime coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) prime coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the prime coater section and prime oven and exhausting to stack (CC#5). Heat for the prime coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(5) One (1) finish coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) finish coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the finish coater section and finish coat oven and exhausting to stack (CC#5). Heat for the finish coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(6) One (1) natural gas fired recuperative thermal oxidizer, identified as RTO, with a maximum natural gas heat input capacity of 22.6 MMBtu/hr, using low NOx burner (LNB) and exhausting to Stack (CC#5).

(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.36.1 CCL precleaning and cleaning section - PM, PM_{10}, $PM_{2.5}$ PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10} and $PM_{2.5}$

(a) The PM, PM_{10} and $PM_{2.5}$, each emission from the CCL precleaning and cleaning sections scrubber exhausts shall not exceed 0.003 gr/dscf.

(b) The PM, PM_{10} and $PM_{2.5}$ emissions from the CCL precleaning and cleaning section shall be controlled by wet scrubber.

(c) The process fugitive emissions shall be minimized using the following work practices:

(i) The building doors shall be closed when CCL precleaning and cleaning section is in operation, except during loading and loading operation. This requirement does not apply when there are operational and safety issues for the operation of CCL line.

(ii) The hood system shall be designed using the guidelines from the following reference manual published by EPA:

Technical Manual: Hood System Capture of Process Fugitive Particulate Emissions, EPA/600/S7-86/016 June 1986

D.36.2 CCL hot water circuit burner - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM/PM_{10}/$PM_{2.5}$

(a) The PM (filterable) emission from the CCL hot water circuit burner shall not exceed 1.90 lb/MMscf.

(b) The PM_{10} and $PM_{2.5}$, each emission from the CCL hot water circuit burner shall not exceed 7.60 lb/MMscf.

(c) The PM, PM_{10} and $PM_{2.5}$ emissions from the CCL hot water circuit burner shall be minimized using good combustion practices.

(d) Only pipeline quality natural gas shall be combusted.

NOx

(e) The NOx emissions from the CCL hot water circuit burner shall not exceed 50.00 lb/MMscf

(f) The CCL hot water circuit burner shall be equipped with low NOx burners (LNB).

(g) The NOx emissions from the CCL hot water circuit burner shall be minimized using good combustion practices.

(h) Only pipeline quality natural gas shall be combusted.

<u>SO_2</u>

(i) The SO_2 emissions from the CCL hot water circuit burner shall not exceed 0.0006 lb/MMBtu.

(j) Only pipeline quality natural gas fuel shall be combusted.

<u>CO</u>

(k) The CO emissions from the CCL hot water circuit burner shall not exceed 84.0 lb/MMscf.

(l) The CO emissions from the CCL hot water circuit burner shall be minimized using good combustion practices.

<u>VOC</u>

(m) The VOC emissions from the CCL hot water circuit burner shall not exceed 5.50 lb/MMscf.

(n) The VOC emissions from the CCL hot water circuit burner shall be minimized using good combustion practices.

<u>Pb</u>

(o) The lead (Pb) emissions from the CCL hot water circuit burner shall not exceed 0.0005 lb/MMscf.

(p) Only pipeline quality natural gas fuel shall be combusted.

<u>CO2e</u>

(q) The CO2e emissions from the CCL hot water circuit burner shall not exceed 117.1 lb/MMBtu.

(r) The CO2e emissions from the CGL hot water circuit burner shall not exceed 2,625 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(s) The CO2e emissions from the CCL hot water circuit burner shall be minimized using good combustion practices

(t) Only pipeline quality natural gas shall be combusted.

<u>Be</u>

(u) Only pipeline quality natural gas fuel shall be combusted.

<u>Hg</u>

(v) Only pipeline quality natural gas fuel shall be combusted.

D.36.3 CCL chemical passivation - VOC PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

<u>VOC</u>

(a) The Permittee shall not cause to be discharged into the atmosphere more than.0.28 kilogram VOC per liter of coating solids applied for each calendar month.

(b) Only waterborne, low solvent or organic coating shall be used.

D.36.4 CCL ovens with RTO - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10}, $PM_{2.5}$

(a) The PM, PM_{10} and $PM_{2.5}$, each emission from CCL ovens with RTO shall not exceed 0.009 lb/MMBtu.

(b) The PM, PM_{10} and $PM_{2.5}$ emission from the CCL ovens with RTO shall be minimized using good combustion practices.

(c) Only pipeline quality natural gas shall be combusted.

NOx

(d) The NOx emissions from the CCL ovens with RTO shall not exceed 20.0 pounds per hour.

(e) The NOx emissions from the CCL ovens with RTO shall be controlled by LNB and good combustion practices.

SO_2

(f) The SO_2 emissions from the CCL ovens with RTO shall not exceed 0.0006 lb/MMBtu.

(g) Only pipeline quality natural gas fuel shall be combusted.

CO

(h) The CO emissions from the CCL ovens with RTO shall not exceed 20.0 pounds per hour .

(i) The CO emissions from the CCL ovens with RTO shall be minimized using good combustion practices.

VOC

(j) The VOC emissions from the CCL strip coaters and ovens shall not exceed 4.0 pounds per hour.

(k) The VOC emissions from the CCL strip coaters and ovens shall be controlled by RTO.

(l) The minimum overall VOC reduction efficiency (including collection and control efficiency) for the RTO shall be 98.0% unless outlet VOC concentrations from the RTO is equal to or less than 10 ppmv at 100% capture.

Pb

(m) The Pb emissions from the CCL ovens with RTO shall not exceed 0.0005 lb/MMscf.

(n) Only pipeline quality natural gas fuel shall be combusted.

GHGs

(o) The CO2e emissions from the CCL ovens with RTO shall not exceed 117.1 lb/MMBtu.

(p) The CO2e emissions from the CCL ovens shall be minimized using good combustion practices.

(q) Only pipeline quality natural gas fuel shall be combusted.

Be
(r) Only pipeline quality natural gas fuel shall be combusted.

Hg
(s) Only pipeline quality natural gas fuel shall be combusted.

D.36.5 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-4]

Pursuant to 326 IAC 8-2-4 (Coil Coating Operations):

(a) CCL chemical passivation shall not discharge into the atmosphere VOC in excess of two and six-tenths (2.6) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator from prime and topcoat or single coat operations.

(b) CCL strip coaters shall not discharge into the atmosphere VOC in excess of two and six-tenths (2.6) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator from prime and topcoat or single coat operations.

D.36.6 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.36.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

Pursuant to 326 IAC 8-1-2(a) and to comply with Condition D.36.4(j) and D.36.5(b), the RTO for VOC control shall be in operation and control emissions from the CCL strip coaters at all times CCL strip coaters are in operation.

D.36.8 Particulate Control

In order to assure compliance with Condition D.36.1(a), scrubbers CCL-WS1 and CCL-WS2 for particulate control shall be in operation and control emissions from the CCL precleaning and cleaning section at all times the CCL precleaning and cleaning sections are in operation.

D.36.9 Testing Requirements [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Condition D.36.1(a), no later than one hundred and eighty (180) days after initial startup of the CCL precleaning and cleaning section, the Permittee shall perform PM, PM_{10} and $PM_{2.5}$ testing on one of the CCL precleaning and cleaning section wet scrubbers from CCL-WS1 and CCL-WS2. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration such that time period for the testing on any wet scrubber shall not exceed 10 years.

PM_{10} and $PM_{2.5}$ includes filterable and condensable particulate matter.

(b) In order to demonstrate compliance with Condition D.36.4, no later than one hundred and eighty (180) days after initial startup of the CCL strip coaters and ovens, the Permittee shall perform NOx, CO and VOC (including inlet and outlet VOC emission rates and overall VOC control efficiency) testing for CCL strip coaters and ovens with RTO. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(c) The testing shall be performed utilizing methods as approved by the commissioner. Testing shall be performed 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.36.10 Volatile Organic Compounds (VOC)[326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC content and usage limitations contained in Conditions D.36.3 and D.36.5 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the “as supplied” and “as applied” VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.36.11 Volatile Organic Compound (VOC) Content Limitations [326 IAC 8-1-2]

(a) The Permittee shall comply with the following for the CCL chemical passivation:

Compliance with the VOC content limit in Condition D.36.5(a) shall be determined pursuant to 326 IAC 8-1-2(a)(7), using compliant coatings or volume weighted average of coatings on a daily basis. The volume weighted average shall be determined by the following equation:

$$A = [\sum (C \times U) / \sum U]$$

Where:

A is the volume weighted average in pounds VOC per gallon less water as applied;

C is the VOC content of the coating in pounds VOC per gallon less water as applied; and

U is the usage rate of the coating in gallons per day.

(b) Compliance with the VOC content limit in Conditions D.36.3 shall be determined using a volume weighted average of coatings on a monthly basis. The Permittee shall use the procedures in 40 CFR 60.463(b) and (c)(1) to document compliance.

(c) The Permittee shall comply with the following for the CCL strip coaters:

(A) Pursuant to 326 IAC 8-1-2 (b), the CCL strip coaters VOC emissions shall be limited to no greater than the equivalent emissions (E), expressed as pounds of VOC per gallon of coating solids, allowed in Condition D.36.5(b).

This equivalency was determined by the following equation:

$$E = L / (1 - (L/D))$$

Where

E= Equivalent emission limit in pounds of VOC per gallon of coating solids as applied.

L= Applicable emission limit from 326 IAC 8 in pounds of VOC per gallon of coating;

D= Baseline solvent density of VOC in coating and shall be equal to 7.36 pounds per gallon of solvent;

A solvent density of 7.36 pounds of VOC per gallon of coating shall be used to determine equivalent pounds of VOC per gallon of solids for the applicable emission limit contained in this article.

(B) The pounds of VOC per gallon of coating solids shall be limited to less than 3.94 (E value determined in D.36.11(c)(A) above).

Compliance with the equivalent VOC emission limit here shall be determined using the following equation:

$$Ea = La / (1 - (La/Da))$$

Where
Ea= Actual emissions in pounds of VOC per gallon of coating solids as applied;
La= Actual VOC content in pounds of VOC per gallon of coating, as applied
Da= Actual density of the VOC in coating, as applied, in pounds per gallon of VOC;

(C) Pursuant to 326 IAC 8-1-2(c), the overall efficiency of RTO shall be no less than the equivalent overall efficiency calculated by the following equation:

$$O = \frac{V - E}{V} \times 100$$

Where:

V = The actual VOC content of the coating or, if multiple coatings are used, the daily weighted average VOC content of all coatings, as applied to the subject coating line as determined by the applicable test methods and procedures specified in 326 IAC 8-1-4 in units of pounds of VOC per gallon of coating solids as applied.
E = Equivalent emission limit in pounds of VOC per gallon of coating solids as applied.
O = Equivalent overall efficiency of the capture system and control device as a percentage.

The overall efficiency of RTO shall be greater than (O).

D.36.12 Greenhouse Gases (GHGs) Calculations

To determine the compliance status with Conditions D.36.2(r), the following equation shall be used to determine the CO2e emissions from the CCL hot water circuit burner:

CO2e emissions (tons/month) = Fuel Usage (MMcf/month) x [(119,315 (lb CO2/MMcf) x 1 + 2.2 (lb CH4/MMcf) x 25 + 0.22 (lb N2O/MMcf) x 298] x 1/2000 (ton/lb)

Where:

lb/MMcf emission factors are based on 40 CFR Part 98 Tables C-1 and C-2.

Global warming potentials (GWP) values 1, 25 and 298 are from Table A-1 of 40 CFR Part 98 Subpart A.

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

D.36.13 Parametric Monitoring - Scrubber Pressure Drop [40 CFR 64]

The Permittee shall monitor and record the pressure drop across the scrubbers CCL-WS1 and CCL-WS2 at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is between 1.0 and 12.0 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. A pressure drop reading that is outside the above mentioned range(s) is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.36.14 Scrubber Flow Rate [40 CFR 64]

(a) The Permittee shall monitor and record the flow rate of the CCL-WS1 and CCL-WS2 at least once per day when the associated processes are in operation. From the date of startup until the stack test results are available, the Permittee shall maintain the flow rate at or above the minimum flow rate specified by the scrubber manufacturer.

(b) The Permittee shall determine the minimum flow rate from the latest valid stack test that demonstrates compliance with limits in Condition D.35.1.

(c) On and after the date the stack test results are available, the Permittee shall maintain a flow rate at or above the minimum rate as observed during the latest compliant stack test.

(d) When for any one reading, the flow rate is below the above mentioned minimum, the Permittee shall take a 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. A reading that is below the above mentioned minimum flow rate is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.36.15 Scrubber Failure Detection

In the event that a scrubber malfunction has been observed:

(a) For a scrubber controlling emissions from a process operated continuously, a failed unit and the associated process will be shut down immediately until the failed unit has 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).

(b) For a scrubber 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).

D.36.16 RTO Temperature [40 CFR 64]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO for measuring operating temperature. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of startup until the stack test results are available, the Permittee shall operate the RTO at or above the 3-hour average temperature specified by the equipment vendor/manufacturer for optimum operation.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with VOC limits in Conditions D.36.4 and D.36.5(b).

(c) On and after the date the most recent compliant stack test results are available, the Permittee shall operate the RTO at or above the 3-hour average temperature as observed during the compliant stack test.

(d) If the 3-hour average temperature falls below the above mentioned 3-hour average temperature, the Permittee shall take a 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. A 3-hour average temperature reading below the above mentioned 3-hour average temperature is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.36.17 RTO Parametric Monitoring [40 CFR 64]

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with VOC limits in D.36.4(j) and D.36.5(b).

(b) The duct pressure or fan amperage shall be observed at least once per day when the RTO is in operation. On and after the date the stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

(c) When, for any one reading, the duct pressure or fan amperage is outside the above mentioned range, the Permittee shall take a reasonable response. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A 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.

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

D.36.18 Record Keeping Requirements

(a) To document the compliance status with Condition D.36.2(r), the Permittee shall maintain records of the fuel usage and CO_2e emissions from each of the CCL Hot water circuit burner.

(b) To document the compliance status with Conditions D.36.3 and D.36.5, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC usage limit established in Conditions D.36.3 and D.36.5(a).

(1) The VOC content of each coating material and solvent used less water.

(2) The amount of each coating material and solvent used on daily basis.

(A) Records shall include purchase orders, invoices, and safety data sheets (SDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvent.

(3) The VOC content of each coating less water as applied.

(4) The volume weighted average VOC content less water of the coatings used for

each day when non-compliant coatings are used.

(5) The dates when compliant coatings are used.

(6) Proportion of solids in each coating used.

(c) To document the compliance status with Condition D.36.13, the Permittee shall maintain records of pressure drop for the scrubbers. The Permittee shall include in its daily record when a pressure drop is not taken and the reason for the lack of pressure drop record (e.g., the process did not operate that day).

(d) To document the compliance status with Condition D.36.14, the Permittee shall maintain daily records of flow rate for the scrubbers. The Permittee shall include in its daily record when a flow rate is not taken and the reason for the lack of flow rate record (e.g., the process did not operate that day).

(e) To document the compliance status with Condition D.36.16, the Permittee shall maintain continuous temperature records (on a 3-hour average basis) for the RTO and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a 3-hour average temperature record is not taken and the reason for the lack of a 3-hour average temperature record (e.g., the process did not operate that day).

(f) To document the compliance status with Condition D.36.17, the Permittee shall maintain daily records of the duct pressure or fan amperage and the duct pressure or fan amperage used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a duct pressure or fan amperage record is not taken and the reason for the lack of duct pressure or fan amperage record (e.g., the process did not operate that day).

(g) To document the compliance status with Condition D.36.1(c), the Permittee shall maintain records of the dates when building doors are not closed while CCL precleaning and cleaning sections are in operation and the operational and safety issues for those dates. The Permittee shall include in its record when date is not recorded and the reason for the lack of record of the date (e.g., the process did not operate that day).

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

SECTION D.37 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

DRI – Coating Complex Boiler

(a) One (1) natural gas fired coating complex boiler, identified as CC-BOIL, approved in 2023 for construction, with a maximum heat input capacity of 50.0 MMBtu/hr, using low NOx burners (LNBs) and exhausting to stack (CCB).

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(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.37.1 CC-BOIL Boiler - PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, Pb, Hg, Be and GHG PSD BACT [326 IAC 2-2-3]

Pursuant to PSD/SSM No. 107-45480-00038 and 326 IAC 2-2-3 (PSD BACT), the Permittee shall comply with the following BACT requirements:

PM, PM_{10} and $PM_{2.5}$

(a) The PM (Filtrable), PM_{10} and $PM_{2.5}$, each emission from the boiler (CC-BOIL) shall not exceed 0.0007 lb/MMBtu.

(b) The PM, PM_{10} and $PM_{2.5}$ emissions from the boiler (CC-BOIL) shall be minimized using good combustion practices.

NOx

(c) The NOx emissions from the boiler (CC-BOIL) shall not exceed 0.035 lb/MMBtu.

(d) The NOx emissions from the boiler (CC-BOIL) shall be controlled by LNB.

CO

(e) The CO emissions from the boiler (CC-BOIL) shall not exceed 61.0 lb/MMscf.

(f) The CO emissions from the boiler (CC-BOIL) shall be minimized using good combustion practices.

SO_2

(g) The SO_2 emissions from the boiler (CC-BOIL) shall not exceed 0.0006 lb/MMBtu.

VOC

(h) The VOC emissions from the boiler (CC-BOIL) shall not exceed 0.0054 lb/MMBtu.

(i) The VOC emissions from the boiler (CC-BOIL) shall be minimized using good combustion practices and natural gas fuel (clean fuel).

Pb

(j) The Pb emissions from the boiler (CC-BOIL) shall not exceed 0.0005 lb/MMscf.

CO2e

(k) The CO2e emissions from the boiler (CC-BOIL) shall not exceed 117.1 lb/MMBtu.

(l) The CO2e emissions from the boiler (CC-BOIL) shall not exceed 25,645 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(m) The CO2e emissions from the boiler (CC-BOIL) shall be minimized using energy efficiency measures.

PM, PM_{10}, $PM_{2.5}$, SO_2, Pb, Hg, Be, and GHG

(n) Only pipeline quality natural gas fuel shall be combusted.

D.37.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.37.3 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.35.1(a) and (c), no later than one hundred and eighty (180) days after the initial startup of CC-BOIL Boiler, the Permittee shall perform PM, PM_{10}, $PM_{2.5}$ and NOx testing on CC-BOIL Boiler utilizing methods as approved by the commissioner. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be performed 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.

PM_{10} and $PM_{2.5}$ includes filterable and condensable particulate matter.

D.37.4 Greenhouse Gases (GHGs) Calculations

To determine the compliance status with Conditions D.37.1(l), the following equation shall be used to determine the CO2e emissions from the Boiler (CC-BOIL):

CO2e emissions (tons/month) = Fuel Usage (MMcf/month) x [(119,315 (lb CO2/MMcf) x 1 + 2.2 (lb CH4/MMcf) x 25 + 0.22 (lb N2O/MMcf) x 298] x 1/2000 (ton/lb)

Where:

lb/MMcf emission factors are based on 40 CFR Part 98 Tables C-1 and C-2.

Global warming potentials (GWP) values 1, 25 and 298 are 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.37.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.37.1(l), the Permittee shall maintain monthly records of the fuel usage and CO2e emissions from boiler (CC-BOIL).

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

SECTION D.38 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description: D.38 – Towers and Structures Operations

(a) One (1) caustic detergent cleaning operation and one (1) sulfuric acid pickling operation for towers and structures operation, identified as CDPT&S, approved in 2024 for construction, with a nominal production rate of 40 tons per hour, using two (2) scrubber systems as control, identified as CDPT&SWS, and exhausting to stacks SCRBC_T&S1 and SCRBC_T&S2.

(b) One (1) natural gas fired galvanizing furnace for towers and structures operation, identified as NGGFT&S, approved in 2024 for construction, with a maximum heat input capacity of 17 MMBtu per hour and exhausting to stack KF_T&S.

(c) One (1) flux and galvanizing process for towers and structures operation, identified as FGT&S, approved in 2024 for construction, with a nominal production rate of 40 tons per hour, using two (2) baghouses identified as FGT&SBH1 and FGT&SBH2, as control, and exhausting to stacks BHG_T&S1 and BHG_T&S2.

(d) One (1) plasma cutting operation, with three (3) plasma cutting tables and two (2) robotic plasma cutting heads, associated with towers and structures operation, identified as PCT&S, approved in 2024 for construction, with a nominal production rate of 165 poles per day, using cartridge filters PCT&SCF as controls., and exhausting inside the building.

(e) One (1) welding operation associated with towers and structures operation, identified as WT&S, using SAW and MCAW (GMAW) type welding, approved in 2024 for construction, with a nominal throughput rate of 165 poles per day, using no controls, and exhausting inside the building.

(f) One (1) shot blasting operation associated with towers and structures operation, identified as SBT&S, approved in 2024 for construction, with a maximum throughput rate of 40 tons per hour, using a baghouse identified as SBT&SBH as control, and exhausting inside the building.

(g) One (1) coating booth operation associated with towers and structures, identified as CBT&S, approved in 2024 for construction, consisting of the following:

(1) airless spray of polyurethane, with a nominal throughput rate of 4 poles per hour, using a dry filter CBT&SBH as control, and exhausting inside the building; and

(2) roll-on UV coating, with a nominal throughput rate of 4 poles per hour, using no control, and exhausting inside the building.

(3) degreasing, with a nominal throughput rate of 4 poles per hour, using no control, and exhausting inside the building.

Under 40 CFR 63, Subpart MMMM, this unit is considered an affected source.

(h) One (1) natural gas fired boiler for towers and structures operation, identified as NGBT&S, approved in 2024 for construction, with a maximum heat input capacity of 15 MMBtu per hour, using no controls, and exhausting to stack BLR_T&S.

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(i) One (1) natural gas fired dryer/generator for tower and structures operation, identified as NGDGT&S, approved in 2024 for construction, with a maximum heat input rate of 3 MMBtu per hour, using no controls, and exhausting inside the building.

(j) One (1) natural gas fired heater for Supplemental Galv Building heat for towers and structures operation, identified as NGHT&S, approved in 2024 for construction, with a maximum heat input capacity of 1.48 MMBtu per hour, using no controls, and exhausting inside the building.

(n) Haul paved road truck traffic for towers and structure operation.

(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.38.1 PSD Minor Limits [326 IAC 2-2}

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2023 Modification permitted under SSM No. 107-46841-00038, the Permittee shall comply with the following:

(a) Galvanizing Process FGT&S

(1) The PM, PM10, and PM2.5 emissions from the Galvanizing Process FGT&S shall not exceed 2.0 pounds per hour each.

(2) The Galvanizing Process FGT&S shall not exceed 3,500 hours of operation per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) Shot Blasting SBT&S

(1) The PM, PM10, and PM2.5 emissions from the shot blasting process shall not exceed 0.96 pounds per hour each.

(2) The shot blasting process SBT&S shall not exceed 3,000 hours of operation per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) Pickling Process CDPT&S

(1) The H_2SO_4 emissions from the pickling process CDPT&S shall not exceed 2 pounds per hour.

(2) The pickling process CDPT&S shall not exceed 5,200 hours of operation per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) Coating Booth Operation

(1) The coatings applied by the coating booth operation CBT&S shall be limited such that total PM, PM10, and PM2.5 emissions shall not exceed 0.76 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) Galvanizing Furnace and Dryer Combustion

(1) The combined total amount of natural gas combusted in the galvanizing furnace (NGGFT&S), dryer (NGDGT&S), shall each not exceed 102 million standard cubic feet of gas (MMSCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) The PM2.5 emissions from the galvanizing furnace (NGGFT&S) and dryer (NGDGT&S), shall be less than 7.6 pounds per million standard cubic feet of gas (lbs/MMSCF).

(f) Heaters and Space Heaters

(1) The combined total amount of natural gas combusted in the heater (NGHT&S), and space heaters shall each not exceed 215.22 million standard cubic feet of gas (MMSCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) The PM2.5 emissions from the heater (NGHT&S) and space heaters shall be less than 7.6 pounds per million standard cubic feet of gas (lbs/MMSCF).

(3) The NOx emissions from the heater (NGHT&S) and space heaters shall be less than 100 pounds per million standard cubic feet of gas (lbs/MMSCF).

(g) Paved Roads

(1) The dust control efficiency for the Paved Roads Coils to Towers shall not be less than 95%.

(2) The dust control efficiency for the Paved Roads for Towers shall not be less than 95%.

(3) The Permittee shall comply with measures outlined in the Fugitive Dust Control Plan (Attachment A).

Compliance with these limits, shall limit the potential to emit of PM, PM10, PM2.5, and NOx to less than 25, 15, 10, and 40 tons per twelve (12) consecutive month period, respectively, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2024 Modification permitted under SSM No. 107-46841-00038.

D.38.2 Hazardous Air Pollutant (HAP) Minor Limit [326 IAC 2-4.1]

In order to render the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, the Permittee shall comply with the following:

(a) The HCl emissions from the Galvanizing Process FGT&S shall not exceed 2.0 pounds per hour.

(b) The Galvanizing Process FGT&S shall not exceed 3,500 hours of operation per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The MDI emissions from the coating booth CBT&S shall not exceed 1 ton per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The Benzene emissions from the coating booth CBT&S shall not exceed 1 ton per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with these limits, shall limit the potential to emit of any single HAP to less than 10 tons per twelve (12) consecutive month period and total HAPs to less than 25 tons per twelve (12) consecutive month period, and shall render the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP).

D.38.3 Particulate Emission Limitations [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the following operations shall not exceed the following limit in pounds per hour when operating at the corresponding process weight rate of pounds 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

Summary of Process Weight rate Limits		
Process/Emission Unit	P (ton/hr)	E (lb/hr)
Galvanizing Process FGT&S	40	42.53
Shot Blaster SBT&S	40	42.53

(b) Pursuant to 326 IAC 6-3-2(d), particulate from Coating Booth Operation shall be controlled by a dry particulate filter, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

D.38.4 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), PM emissions from Boiler NGBT&S shall be limited to 0.27 pounds per MMBtu heat input.

D.38.5 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal and Plastic Parts Coating Operations), for the coating booth CBT&S, the Permittee shall not allow the discharge into the atmosphere VOC in excess of three and five-tenths (3.5) (for extreme performance coatings), pounds of VOC per gallon of coating, excluding water, as delivered to the applicator.

D.38.6 Volatile Organic Compounds (VOC) Work Practices [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9(f) (Miscellaneous Metal and Plastic Parts Coating Operations), work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not be limited to, the following:

(a) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.

(b) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

(c) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.

(d) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.

(e) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

D.38.7 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.38.8 Particulate Control

In order to assure compliance with Conditions D.38.1, and D.38.3, the following baghouses for particulate control shall be in operation and control emissions from the corresponding facility at all times the facility is in operation.

Control Device I.D.	Emission Unit I.D.
FGT&SBH	Galvanizing Process FGT&S
SBT&SBH	Shot Blaster SBT&S

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.38.9 Testing Requirements [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Conditions D.38.1(a)(1) and D.38.3, not later than 180 days after the startup of Galvanizing Process, the Permittee shall perform PM, PM10, and PM2.5 testing of the baghouse FGT&SBH utilizing methods approved by the commissioner. Thereafter, at least once every 5 years from the date of the most recent valid compliance demonstration, the Permittee shall perform PM, PM10, and PM2.5 testing of the baghouse FGT&SBH. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). PM_{10} and $PM_{2.5}$ includes filterable and condensable PM.

(b) In order to demonstrate compliance with Condition D.38.2(a), not later than 180 days after the startup of Galvanizing Process, the Permittee shall perform HCl testing of the baghouse FGT&SBH utilizing methods approved by the commissioner. Thereafter, at least once every 5 years from the date of the most recent valid compliance demonstration, the Permittee shall perform HCl testing of the baghouse FGT&SBH. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

(c) In order to demonstrate compliance with Conditions D.38.1(b)(1) and D.38.3, not later than 180 days after the startup of Shot Blaster, the Permittee shall perform PM, PM10, and PM2.5 testing of the baghouse SBT&SBH utilizing methods approved by the commissioner. Thereafter, at least once every 5 years from the date of the most recent valid compliance demonstration, the Permittee shall perform PM, PM10, and PM2.5 testing of baghouse SBT&SBH. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). PM_{10} and $PM_{2.5}$ includes filterable and condensable PM.

(d) In order to demonstrate compliance with Conditions D.38.1(c)(1) and D.38.3, not later than 180 days after the startup of pickling operation, the Permittee shall perform H2SO4 testing of the scrubber CDPT&SWS utilizing methods approved by the commissioner. Thereafter, at least once every 5 years from the date of the most recent valid compliance demonstration, the Permittee shall perform H2SO4 testing of the scrubber CDPT&SWS. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

(e) Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.38.10 Volatile Organic Compounds [326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC content and usage limitations contained in Condition D.38.5 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.38.11 PM, PM10, and PM2.5 Emissions Determination

Compliance with Condition D.38.1(d) shall be determined by calculating the PM, PM10, and PM2.5 emissions associated with each coating applied by coating booth operation CBT&S using the following equation:

PM/PM10/PM2.5 = $\sum [(CU * D * W\%S) * (1 - TE/100) * (1 - CE/100) * 1/2000]$

Where:

PM/PM10/PM2.5 = The total PM/PM10/PM2.5 emission (ton/month) for all coatings.

CU = The total coating use (gal coating/month) of each coating.
D = The density (lb coating/gal coating) of each coating.
W%S = The weight percent solids (lb solids/lb coating) of each coating.
TE = The transfer efficiency (%) of the spray applicators. This value shall equal 45% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
CE = The control efficiency (%) of the dry filters. This value shall equal 99% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.

The total PM, PM10, and PM2.5 emissions (ton/month) from the coating booth operation CBT&S is equal to the sum of the PM, PM10, and PM2.5 emissions, respectively, associated with each coating applied by this booth.

D.38.12 HAP Emissions Determination

Compliance with Condition D.38.2(c) and (d) shall be determined by calculating MDI and Benzene emissions associated with each coating applied by coating booth operation CBT&S using the following equation:

MDI (tons/month) = $\sum [(CU * D * W\%S) * (1 - TE/100) * (1 - CE/100) * MDI\%W * 1/2000]$

Where:

MDI = The total MDI emission (ton/month) for all coatings.
CU = The total coating use (gal coating/month) of each coating.
D = The density (lb coating/gal coating) of each coating.
W%S = The weight percent solids (lb solids/lb coating) of each coating.
TE = The transfer efficiency (%) of the spray applicators. This value shall equal 45% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
CE = The control efficiency (%) of the dry filters. This value shall equal 99% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
MDI%W = Weight percent of MDI in the coating.

Benzene (tons/month) = $\sum [(CU * D * W\%S) * (1 - TE/100) * (1 - CE/100) * B\%W * 1/2000]$

Where:

Benzene = The total Benzene emission (ton/month) for all coatings.
CU = The total coating use (gal coating/month) of each coating.
D = The density (lb coating/gal coating) of each coating.
W%S = The weight percent solids (lb solids/lb coating) of each coating.
TE = The transfer efficiency (%) of the spray applicators. This value shall equal 45% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
CE = The control efficiency (%) of the dry filters. This value shall equal 99% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
B%W = Percent weight of Benzene in the coating.

The total HAP emissions (tons/month) from the coating booth operation CBT&S is equal to the sum of the HAP emissions associated with each coating applied by this booth.

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

D.38.13 Parametric Monitoring – Baghouse/Filter

The Permittee shall record the pressure drop across the following baghouses at least once per day when the associated facility unit is in operation. When, for anyone reading, the pressure drop across a baghouse is outside the normal range, the Permittee shall take a reasonable response. The normal range for these units is listed below in 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 and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. 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.

Emission Unit I.D.	Control Device I.D.	Range inches of water
FGT&S	FGT&SBH	1.0 - 10.0
SBT&S	SBT&SBH	1.0 - 10.0

The instruments 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 every six (6) months.

D.38.14 Broken or Failed Bag Detection

(a) For a single compartment baghouses 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.

D.38.15 Monitoring

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters for the coating booths. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the Coating Booth CBT&S stack while one or more of the booths are in operation. If a condition exists which should result in a response, the Permittee shall take a 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.

(b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed, the Permittee shall take a 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.

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

D.38.16 Record Keeping Requirements

(a) To document the compliance status with Condition D.38.1(a)(2) and D.38.2(b), the Permittee shall maintain monthly records of the number of hours the galvanizing process is in operation.

(b) To document the compliance status with Condition D.38.1(b)(2), the Permittee shall maintain monthly records of the number of hours the shot blasting process is in operation.

(c) To document the compliance status with Condition D.38.1(c)(2), the Permittee shall maintain monthly records of the number of hours the pickling process is in operation.

(d) To document the compliance with Condition D.38.1(d), the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the PM, PM10, and PM2.5 emission limits established in Condition D.38.1(d).

(1) The amount of each coating material used (as applied). Records shall include purchase orders, invoices, and safety data sheets (SDS) necessary to verify the type and amount used.

(2) The density and weight percent solids of each coating material used (as applied).
(3) The transfer efficiency (TE) of the spray guns in coating booth CBT&S.
(4) The control efficiency (CE) of the dry filters on coating booth CBT&S.
(5) The calculated PM, PM10, and PM2.5 emissions for each month and each compliance period.

(e) To document the compliance status with Conditions D.38.1(e)(1) D.38.1(f)(1), the Permittee shall maintain monthly records of the fuel usage from the galvanizing furnace (NGGFT&S), dryer (NGDGT&S), heater (NGHT&S), and space heaters.

(f) To document the compliance with Condition D.38.2(c) and (d), the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the MDI and Benzene emission limits established in Condition D.38.2(c) and (d).

(1) The amount of each coating material used (as applied). Records shall include purchase orders, invoices, and safety data sheets (SDS) necessary to verify the type and amount used.
(2) The density and weight percent solids of each coating material used (as applied).
(3) The transfer efficiency (TE) of the spray guns in coating booth CBT&S.
(4) The control efficiency (CE) of the dry filters on coating booth CBT&S.
(5) The calculated MDI and Benzene emissions for each month and each compliance period.

(g) To document the compliance status with Condition D.38.5, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken as stated below and shall be complete and sufficient to establish compliance with the established in Condition D.38.5.

Note: (1) and (2) are necessary to show compliance with the pounds of VOC per gallon of coating, excluding water limit.

(1) The VOC content of each coating material and solvent used less water.

(2) The amount of each coating material and solvent used on monthly basis.

(A) Records shall include purchase orders, invoices, and safety data sheets (SDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.

(h) To document the compliance status with Condition D.38.13, the Permittee shall maintain daily records of pressure drop across the baghouse(s). 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).

(i) To document the compliance status with Conditions D.38.3(b) and D.38.15, the Permittee shall maintain a log of weekly overspray observations, daily and monthly inspections.

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

D.38.17 Reporting Requirements

(a) Quarterly reports of the information to document the compliance status with D.38.1(a)(2), D.38.1(b)(2), D.38.1(c)(2), D.38.1(e)(1), D.38.1(f)(1), and D.38.2(b) shall be submitted not later than thirty (30) days after the end of the quarter being reported.

(b) A quarterly summary of the PM, PM10, and PM2.5 emissions from the coating operation CBT&S covered by Condition D.38.1(d) calculated in accordance with Condition D.38.11 shall be submitted using the reporting forms located at the end of this permit, or the equivalent not later than thirty (30) days after the end of the quarter being reported.

(c) A quarterly summary of the MDI and Benzene emissions from the coating operation CBT&S covered by Condition D.38.2(c) and (d) calculated in accordance with Condition D.38.12 shall be submitted using the reporting forms located at the end of this permit, or the equivalent not later than thirty (30) days after the end of the quarter being reported.

(d) Section C - General Reporting contains the Permittee’s obligation with regard to the reporting required by this condition.

(e) The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1(35).

SECTION E.1 NSPS

Emission Unit Description:

D.8 – LINDE GASES PLANT

(a) 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:

(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, these units are considered steam generating units.

D.37 - Coating Complex Boiler

(a) One (1) natural gas fired coating complex boiler, identified as CC-BOIL, approved in 2023 for construction, with a maximum heat input capacity of 50.0 MMBtu/hr, using low NOx burners (LNBs) and exhausting to stack (CCB).

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

D.38 – Towers and Structures Operations

(h) One (1) natural gas fired boiler for towers and structures operation, identified as NGBT&S, approved in 2024 for construction, with a maximum heat input capacity of 15 MMBtu per hour, using no controls, and exhausting to stack BLR_T&S.

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

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

(a) Pursuant to 40 CFR Part 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart Dc.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.1.2 Small Industrial-Commercial-Institutional Steam Generating Units NSPS [326 IAC 12] [40 CFR Part 60, Subpart Dc]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart Dc, (included as Attachment B to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

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

Natural Gas Boiler NGBT&S

(1) 40 CFR 60.40c(a) and (b)
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a), (g), and (i)

SECTION E.2 NESHAP

Emission Unit Description:

D.6 – WASTEWATER TREATMENT PLANT

(b) 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.

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

(a) 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.

D.21 – COLD MILL – ACID REGENERATION

(a) 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 emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart CCC.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.2.2 Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants NESHAP [40 CFR Part 63, Subpart CCC] [326 IAC 20-29]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart CCC (included as Attachment D to the operating permit), which are incorporated by reference as 326 IAC 20-29, for the emission unit(s) listed above:

(1) 40 CFR 63.1155 (a), (b), (c)
(2) 40 CFR 63.1156
(3) 40 CFR 63.1157
(4) 40 CFR 63.1159
(5) 40 CFR 63.1160 (a)(1), (b)
(6) 40 CFR 63.1161 (a), (b), (c), (d)(1)(i) through (iv), (d)(2)
(7) 40 CFR 63.1162
(8) 40 CFR 63.1163 (a)(2), (a)(5), (d), (e),
(9) 40 CFR 63.1164 (a), (c)
(10) 40 CFR 63.1165
(11) 40 CFR 63.1166
(12) Table 1 to Subpart CCC of Part 63

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

E.2.3 Testing Requirements [326 IAC 2-1.1-11] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In order to document the compliance status with Condition E.2.2, the Permittee shall perform the testing required under 40 CFR 63, Subpart CCC, utilizing methods as approved by the Commissioner, at least once every 2.5 years from the date of the most recent valid compliance demonstration. 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.

SECTION E.3 **NSPS**

Emission Unit Description:

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

(a) 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 rate 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 Baghouse 1 and Meltshop Baghouse 2). 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.

(b) 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 Baghouse 1 which exhausts to a stack identified as BH1, and Meltshop Baghouse 2 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.

(e) 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.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

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

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the requirements of 40 CFR 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart AAa.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.3.2 Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983, NSPS [326 IAC 12] [40 CFR Part 60, Subpart AAa]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart AAa (included as Attachment C to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

(1) 40 CFR 60.270a
(2) 40 CFR 60.271a
(3) 40 CFR 60.272a
(4) 40 CFR 60.273a (b) through (g), except as modified by the approved Alternative Monitoring Program for Baghouse 2, dated September 4, 2004
(5) 40 CFR 60.274a (a) through (e), (h)
(6) 40 CFR 60.275a
(7) 40 CFR 60.276a

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

E.3.3 Testing Requirements [326 IAC 2-1.1-11] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In order to document the compliance status with Condition E.3.2, the Permittee shall perform the testing required under 40 CFR 60, Subpart AAa, utilizing methods as approved by the Commissioner, at least once every 2.5 years from the date of the most recent valid compliance demonstration under Condition D.29.14. 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.

SECTION E.4 **NESHAP**

Emission Unit Description:

D.13 – EMERGENCY GENERATORS

(a) 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.

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(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.

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(3) Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(5) One(1) Lip Seal diesel emergency generator, identified as GEN #5, approved in 2016 for construction, with a maximum capacity of 15 hp, with emissions uncontrolled.

Under 40 CFR Part 60, Subpart IIII, this unit is considered an affected facility.
Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered a new affected source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

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

Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.

(8) Lagoon emergency generator, identified as GEN #8, with a capacity of 670.5 HP, permitted in 2021, with emissions uncontrolled.

Under 40 CFR Part 60, Subpart IIII, this unit is considered an affected facility.
Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered a new affected source.

(9) One (1) diesel fired emergency generator for Zinc Pot, identified as CC-GEN1, approved in 2023 for construction, with a maximum rated capacity of 3,000 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/ source.

(10) One (1) diesel fired emergency generator for line cooling, identified as CC-GEN2, approved in 2023 for construction, with a maximum rated capacity of 500 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/ source.

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

D.38 – Towers and Structures Operations

(k) One (1) natural gas fired emergency generator engine for towers and structures operation, identified as EGET&S, approved in 2024 for construction, with a maximum output of 671 hp, using no controls, and exhausting to the atmosphere.

Under 40 CFR 60, Subpart JJJJ this unit is considered an affected facility.
Under 40 CFR 63, Subpart ZZZZ, this unit is considered a new affected source.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.4.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1,for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.4.2 Stationary Reciprocating Internal Combustion Engine NESHAP [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ, (included as Attachment E to the operating permit), which are incorporated by reference as 326 IAC 20-82, for the emergency generators as follows:

GEN #1 through #3, GEN #5 through #8, CC-GEN1 and CC-GEN2

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585 (a), (b)
(3) 40 CFR 63.6590 (a)(1)(i-ii), (a)(2)(i-ii), (b)(3)(iii), (c)(6), (7)
(4) 40 CFR 63.6595 (a)(1), (c)
(5) 40 CFR 63.6602
(6) 40 CFR 63.6605
(7) 40 CFR 63.6625 (e)(2), (f), (h), (i)
(8) 40 CFR 63.6640 (a), (b), (e), (f)(1), (f)(2), (f)(3)
(9) 40 CFR 63.6645 (a)(5), (f)
(10) 40 CFR 63.6655 (a)(1), (d), (f)(1)
(11) 40 CFR 63.6660
(12) 40 CFR 63.6665
(13) 40 CFR 63.6670
(14) 40 CFR 63.6675
(15) Table 2c, item (1)
(16) Table 6, item 9
(17) Table 8

GEN #4a and GEN #3a

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585 (a), (b)
(3) 40 CFR 63.6590 (a)(2)(i), (b)(3)(iii)
(4) 40 CFR 63.6595 (a), (c)
(5) 40 CFR 63.6602
(6) 40 CFR 63.6605
(7) 40 CFR 63.6640 (b), (e), (f)(1), (f)(2)(i), (f)(3)
(8) 40 CFR 63.6645 (f)
(9) 40 CFR 63.6660
(10) 40 CFR 63.6665
(11) 40 CFR 63.6670
(12) 40 CFR 63.6675
(13) Table 2c, item (1)
(14) Table 8 to Subpart ZZZZ of Part 63

Natural gas fired Emergency Generator EGET&S

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a) and (b)
(3) 40 CFR 63.6590(a)(2)(i), (b)(1)(i)
(4) 40 CFR 63.6645(f)
(5) 40 CFR 63.6670
(6) 40 CFR 63.6675

SECTION E.5 NESHAP

Emission Unit Description:

D.8 – LINDE GASES PLANT

(a) 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.

(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.

Under the NESHAP 40 CFR Part 63, Subpart DDDDD, these units are part of an affected source.

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

(b) 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

(a) Eighteen (18) natural gas-fueled batch Annealing Furnaces, identified as EU-03, constructed in 2001 and modified in 2017 to replace the bases. 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).

(b) One (1) natural gas-fired annealing furnace, identified as AN-19, approved for construction in 2007 and modified in 2017 to replace the bases, 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

(b) Additional burners as follows:

(1) Forty four (44) Burners, identified as RB#1 – RB#44, permitted in 2019, 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 burners use natural gas as primary fuel and propane as backup fuel and exhaust to stack S-27.

Under 40 CFR Part 63, Subpart DDDDD, these units are considered affected source.

(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.8 – INSIGNIFICANT ACTIVITIES – LINDE GASES PLANT

(e) One (1) natural gas-fired drying bed regeneration unit, permitted in 2018, with a maximum heat input of 2.60 MMBtu/hr.

Under the NESHAP 40 CFR 63, Subpart DDDDD, the drying bed regeneration unit is an affected source.

D.34 – INSIGNIFICANT ACTIVITIES – Indirect Heat Units

(q) 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.

(1) One (1) natural gas fired hot water heater, constructed in 2000, with a maximum heat input capacity of 1.0 MMBtu/hr. This unit is used to heat the main natural gas supply to prevent condensation in the supply line.

Under 40 CFR 63, Subpart DDDDD, this is an affected source.

(2) One (1) QA/QC furnace, constructed in 1997, with a maximum of 8 burners, each with a maximum heat input capacity of 0.084 MMBtu/hr.

Under 40 CFR 63, Subpart DDDDD, this is an affected source.

D.35 - Continuous Galvanizing Line (CGL)

(a) One (1) Continuous Galvanizing Line (CGL), identified as CC-CGL, approved in 2023 for construction, consisting of the following:

(2) One (1) natural gas fired hot water circuit burner, with a maximum capacity of 9.0 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CGL#2).

Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

(3) One (1) natural gas fired annealing furnace, with a maximum capacity of 53.1 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CGL#3).

Under 40 CFR 63, Subpart DDDDD, radiant tube burners section of this unit is considered an affected source.

D.36 - Continuous Coating Line (CCL)

(a) Continuous Coating Line (CCL), identified as CC-CCL, approved in 2023 for construction, consisting of the following:

(2) One (1) natural gas fired hot water circuit burner, with a maximum capacity of 5.12 MMBtu/hr, using low NOx burner (LNB) and exhausting to stack (CC#3).

Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

D.37 - Coating Complex Boiler

(a) One (1) natural gas fired coating complex boiler, identified as CC-BOIL, approved in 2023 for construction, with a maximum heat input capacity of 50.0 MMBtu/hr, using low NOx burners (LNBs) and exhausting to stack (CCB).

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

D.38 – Towers and Structures Operations

(h) One (1) natural gas fired boiler for towers and structures operation, identified as NGBT&S, approved in 2024 for construction, with a maximum heat input capacity of 15 MMBtu per hour, using no controls, and exhausting to stack BLR_T&S.

Under 40 CFR 60, Subpart Dc, this unit is considered an affected facility.
Under 40 CFR 63, Subpart DDDDD, this unit is considered an affected source.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.5.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1 for the emission units listed above, except as otherwise specified in 40 CFR 63 Subpart DDDDD.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.5.2 National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters NESHAP [40 CFR Part 63, Subpart DDDDD] [326 IAC 20-95]

The Permittee shall comply with the provisions of 40 CFR Part 63, Subpart DDDDD (included as Attachment F to the operating permit), which are incorporated by reference as 326 IAC 20-95.

(a) Units except those listed in paragraph (b):

(1) 40 CFR 63.7480
(2) 40 CFR 63.7485

(3) 40 CFR 63.7490
(4) 40 CFR 63.7495(a), (b)
(5) 40 CFR 63.7499(l), (n)
(6) 40 CFR 63.7500(a)(1)
(7) 40 CFR 63.7505
(8) 40 CFR 63.7510(e),(g)
(9) 40 CFR 63.7515(d)
(10) 40 CFR 63.7540(a)(10), (11), (13)
(11) 40 CFR 63.7545(a), (b), (f)
(12) 40 CFR 63.7550(b)(1) through (4), (c)(1), (c)(5)(i) through (iv), (xiv), (xvii)
(13) 40 CFR 63.7555(a)(1)
(14) 40 CFR 63.7560
(15) 40 CFR 63.7565
(16) 40 CFR 63.7570
(17) 40 CFR 63.7575
(18) Table 3, Items (1) through (3)
(19) Table 9, (Item (1)
(20) Table 10

(b) Drying bed regeneration unit:

(1) 40 CFR 63.7480
(2) 40 CFR 63.7485
(3) 40 CFR 63.7490(a)(2)
(4) 40 CFR 63.7490(b)
(5) 40 CFR 63.7495(a)
(6) 40 CFR 63.7499(l)
(7) 40 CFR 63.7500(a)
(8) 40 CFR 63.7500(e)
(9) 40 CFR 63.7505(a)
(10) 40 CFR 63.7510(g)
(11) 40 CFR 63.7515(d)
(12) 40 CFR 63.7515(g)
(13) 40 CFR 63.7530(f)
(14) 40 CFR 63.7540(a)(12)
(15) 40 CFR 63.7540(a)(13)
(16) 40 CFR 63.7540(b)
(17) 40 CFR 63.7545(a)
(18) 40 CFR 63.7545(c)
(19) 40 CFR 63.7545(e)
(20) 40 CFR 63.7550
(21) 40 CFR 63.7555
(22) 40 CFR 63.7560
(23) 40 CFR 63.7565
(24) 40 CFR 63.7570
(25) 40 CFR 63.7575
(26) Table 3 to Subpart DDDDD of Part 63 (item 1)
(27) Table 9 to Subpart DDDDD of Part 63
(28) Table 10 to Subpart DDDDD of Part 63

(c) Natural Gas Fired Boiler for Towers and Structures (NGBT&S)

(1) 40 CFR 63.7480
(2) 40 CFR 63.7485
(3) 40 CFR 63.7490(a) and (b)
(4) 40 CFR 63.7495(a) and (d)

(5) 40 CFR 63.7499(l)
(6) 40 CFR 63.7500(a)(1)(iv), (3), (b), (e), and (f)
(7) 40 CFR 63.7505(a)
(8) 40 CFR 63.7510(g)
(9) 40 CFR 63.7515(d), (f)
(10) 40 CFR 63.7540(a)(10), (13), and (d)
(11) 40 CFR 63.7545(a), (c), (f), and (h)
(12) 40 CFR 63.7555(a) and (h)
(13) 40 CFR 63.7560
(14) 40 CFR 63.7565
(15) 40 CFR 63.7570
(16) 40 CFR 63.7575
(17) Table 3 to Subpart DDDDD of Part 63 item (3)
(18) Table 10 to Subpart DDDDD of Part 63

SECTION E.6 NSPS

Emissions Unit Description:

D.13 – EMERGENCY GENERATORS

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

(3) Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

(5) One(1) Lip Seal diesel emergency generator, identified as GEN #5, approved in 2016 for construction, with a maximum capacity of 15 hp, with emissions uncontrolled.

Under 40 CFR Part 60, Subpart IIII, this unit is considered an affected facility.
Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered a new affected source.

(8) Lagoon emergency generator, identified as GEN #8, with a capacity of 670.5 HP, permitted in 2021, with emissions uncontrolled.

Under 40 CFR Part 60, Subpart IIII, this unit is considered an affected facility.
Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered a new affected source.

(9) One (1) diesel fired emergency generator for Zinc Pot, identified as CC-GEN1, approved in 2023 for construction, with a maximum rated capacity of 3,000 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/ source.

(10) One (1) diesel fired emergency generator for line cooling, identified as CC-GEN2, approved in 2023 for construction, with a maximum rated capacity of 500 HP, using oxidation catalyst for CO control and exhausting outside.

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/ source.

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW. (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.6.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1][40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-

1, for the emission units listed above, except as otherwise specified in 40 CFR Part 60, Subpart IIII.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.6.2 Stationary Compression Ignition Internal Combustion Engines NSPS [326 IAC 12][40 CFR Part 60, Subpart IIII]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart IIII (included as Attachment G to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission units listed above:

(1) 40 CFR 60.4200 (a)(2)(i), (a)(4)
(2) 40 CFR 60.4205 (b)
(3) 40 CFR 60.4206
(4) 40 CFR 60.4207 (b)
(5) 40 CFR 60.4208 (a), (b), (h)
(6) 40 CFR 60.4209
(7) 40 CFR 60.4211 (a), (c), (f), (g)
(8) 40 CFR 60.4212
(9) 40 CFR 60.4214 (b), (c)
(10) 40 CFR 60.4218
(11) 40 CFR 60.4219
(12) Table 8 to Subpart IIII of Part 60

SECTION E.7 NSPS

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

(d) One (1) chem (roll) coater, identified as CHEM, constructed in 2020, permitted in 2022 with a nominal coating application rate of 0.45 gal/min, using no control, and exhausting indoors.

Under 40 CFR 60, Subpart TT, this is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this is considered an affected unit.

D.35 - Continuous Galvanizing Line (CGL)

(a) One (1) Continuous Galvanizing Line (CGL), identified as CC-CGL, approved in 2023 for construction, consisting of the following:

(4) One (1) chemical passivation roll coaters, with a maximum capacity of 76 tons per hour, without control and exhausting to stack (CGL#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

D.36 - Continuous Coating Line (CCL)

(b) Continuous Coating Line (CCL), identified as CC-CCL, approved in 2023 for construction, consisting of the following:

(3) One (1) chemical passivation roll coaters, with a maximum capacity of 73.9 tons per hour, without control and exhausting to stack (CC#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(4) One (1) prime coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) prime coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the prime coater section and prime oven and exhausting to stack (CC#5). Heat for the prime coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(5) One (1) finish coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) finish coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the finish coater section and finish coat oven and exhausting to stack (CC#5). Heat for the finish coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(6) One (1) natural gas fired recuperative thermal oxidizer, identified as RTO, with a

maximum natural gas heat input capacity of 22.6 MMBtu/hr, using low NOx burner (LNB) and exhausting to Stack (CC#5).

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.7.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart TT.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.7.2 Metal Coil Surface Coating NSPS [326 IAC 12] [40 CFR Part 60, Subpart TT]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart TT (included as Attachment H to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

(1) 40 CFR 60.460
(2) 40 CFR 60.461
(3) 40 CFR 60.462(a)(1)
(4) 40 CFR 60.463(a), (b), (c)(1)
(5) 40 CFR 60.464(a)
(6) 40 CFR 60.465(a), (c), (e)
(7) 40 CFR 60.466

SECTION E.8 **NESHAP**

Emissions Unit Description:

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

(d) One (1) chem (roll) coater, identified as CHEM, constructed in 2020, permitted in 2022 with a nominal coating application rate of 0.45 gal/min, using no control, and exhausting indoors.

Under 40 CFR 60, Subpart TT, this is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this is considered an affected source.

D.35 - Continuous Galvanizing Line (CGL)

(a) One (1) Continuous Galvanizing Line (CGL), identified as CC-CGL, approved in 2023 for construction, consisting of the following:

(4) One (1) chemical passivation roll coaters, with a maximum capacity of 76 tons per hour, without control and exhausting to stack (CGL#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

D.36 - Continuous Coating Line (CCL)

(b) Continuous Coating Line (CCL), identified as CC-CCL, approved in 2023 for construction, consisting of the following:

(3) One (1) chemical passivation roll coaters, with a maximum capacity of 73.9 tons per hour, without control and exhausting to stack (CC#4).

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(4) One (1) prime coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) prime coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the prime coater section and prime oven and exhausting to stack (CC#5). Heat for the prime coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.
Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(5) One (1) finish coater section, with a maximum throughput capacity of 73.9 tons per hour, using roll coating application, equipped with one (1) finish coat oven, using natural gas fired recuperative thermal oxidizer (RTO) to control emissions from the finish coater section and finish coat oven and exhausting to stack (CC#5). Heat for the finish coat oven is supplied using RTO burner and residual heat from the combustion of coating solvent in RTO.

Under 40 CFR 60, Subpart TT, this unit is considered an affected facility.

Under 40 CFR 63, Subpart SSSS, this unit is considered an affected source.

(6) One (1) natural gas fired recuperative thermal oxidizer, identified as RTO, with a maximum natural gas heat input capacity of 22.6 MMBtu/hr, using low NOx burner (LNB) and exhausting to Stack (CC#5).

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.8.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart SSSS.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.8.2 Surface Coating of Metal Coil NESHAP [40 CFR Part 63, Subpart SSSS] [326 IAC 20-64]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart SSSS (included as Attachment I to the operating permit), which are incorporated by reference as 326 IAC 20-64, for the emission unit(s) listed above:

(1) 40 CFR 63.5080
(2) 40 CFR 63.5090(a)
(3) 40 CFR 63.5100
(4) 40 CFR 63.5110
(5) 40 CFR 63.5120(a)(1), (2), (b)
(6) 40 CFR 63.5130(b), (d), (e)
(7) 40 CFR 63.5140
(8) 40 CFR 63.5160(b), (c)
(9) 40 CFR 63.5170(a), (b)
(10) 40 CFR 63.5180(a), (b), (g), (h), (i)
(11) 40 CFR 63.5181(b), (c), (d), (e)
(12) 40 CFR 63.5190(a)(1), (a)(2)(iii), (iv), (vi), (a)(3), (a)(5), (c)
(13) 40 CFR 63.5200
(14) Table 2

SECTION E.9 NESHAP

Emissions Unit Description:

D.38 – Towers and Structures Operations

(g) One (1) coating booth operation associated with towers and structures, identified as CBT&S, approved in 2024 for construction, consisting of the following:

(1) airless spray of polyurethane, with a nominal throughput rate of 4 poles per hour, using a dry filter CBT&SBH as control, and exhausting inside the building; and

(2) roll-on UV coating, with a nominal throughput rate of 4 poles per hour, using no control, and exhausting inside the building.

(3) degreasing, with a nominal throughput rate of 4 poles per hour, using no control, and exhausting inside the building.

Under 40 CFR 63, Subpart MMMM, this unit is considered an affected source.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.9.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart MMMM.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.9.2 Surface Coating of Miscellaneous Metal Parts and Products NESHAP [40 CFR Part 63, Subpart MMMM] [326 IAC 20-80]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart MMMM (included as Attachment J to the operating permit), which are incorporated by reference as 326 IAC 20-80, for the emission unit(s) listed above:

(1) 40 CFR 63.3881(a) and (b)
(2) 40 CFR 63.3882(a), (b), and (c)
(3) 40 CFR 63.3883(a)(2) and (d)
(4) 40 CFR 63.3890(a)(1)
(5) 40 CFR 63.3891(a) or (b)
(6) 40 CFR 63.3892(a)
(7) 40 CFR 63.3893(a)

(8) 40 CFR 63.3900(a)
(9) 40 CFR 63.3901
(10) 40 CFR 63.3910
(11) 40 CFR 63.3920
(12) 40 CFR 63.3930
(13) 40 CFR 63.3931
(14) 40 CFR 63.3940
(15) 40 CFR 63.3941
(16) 40 CFR 63.3942
(17) 40 CFR 63.3950
(18) 40 CFR 63.3951
(19) 40 CFR 63.3952
(20) 40 CFR 63.3960(a)
(21) 40 CFR 63.3961
(22) 40 CFR 63.3963
(23) 40 CFR 63.3964(a)
(24) 40 CFR 63.3980
(25) 40 CFR 63.3981
(26) Table 2 to Subpart MMMM of Part 63

SECTION E.10 NSPS

Emissions Unit Description:

D.38 – Towers and Structures Operations

(k) One (1) natural gas fired emergency generator engine for towers and structures operation, identified as EGET&S, approved in 2024 for construction, with a maximum output of 671 hp, using no controls, and exhausting to the atmosphere.

Under 40 CFR 60, Subpart JJJJ, this unit is considered an affected facility.
Under 40 CFR 63, Subpart ZZZZ, this unit is considered a new affected source.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.10.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1][40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart JJJJ.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.10.2 Stationary Spark Ignition Internal Combustion Engines NSPS [326 IAC 12][40 CFR Part 60, Subpart JJJJ]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart JJJJ (included as Attachment K to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

(1) 40 CFR 60.4230(a)(4)(iv), (6), and (e)
(2) 40 CFR 60.4233(e)
(3) 40 CFR 60.4234
(4) 40 CFR 60.4236(c)
(5) 40 CFR 60.4237(a)
(6) 40 CFR 60.4243(b)(1) and (d)
(7) 40 CFR 60.4245(a)(1, 2, 3), (b), and (e)
(8) 40 CFR 60.4246
(9) 40 CFR 60.4248
(10) Table 1 to Subpart JJJJ of Part 60
(11) Table 3 to Subpart JJJJ of Part 60

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038

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:	
Email Address:	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 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12) • The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and • The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: ______________________________

Title / Position: ______________________________

Date: ______________________________

Phone: ______________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Meltshop Electric Arc Furnaces
Parameter: Steel Production
Limit: 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

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Steel Production***) (***tons***)	(***Steel Production***) (***tons***)	(***Steel Production***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ____________________

Submitted by: ______________________________

Title / Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name:	Nucor Steel
Source Address:	4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.:	T107-45287-00038
Facility:	Cold Reversing Mill 1(EU-09)
Parameter:	Mill steel throughput
Limit:	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.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Steel throughput***) (***tons***)	(***Steel throughput***) (***tons***)	(***Steel throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone:____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Reversing and Tempering (R/T) Mill (a.k.a. Cold Reversing Mill 2)
Parameter: Mill steel throughput
Limit: 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.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	Steel throughput) (***tons***)	***Steel throughput***) (***tons***)	***Steel throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone:____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: AN-19, TD #3, MD #1, and MD #2
Parameter: Propane combusted
Limit: Less than 1,089 thousand gallons per twelve consecutive month period, with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Propane combusted***) (***gallons***)	(***Propane combusted***) (***gallons***)	(***Propane combusted***) (***gallons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Screen (TSP-2)
Parameter: Throughput
Limit: Shall not exceed 2,000,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER:_____________________ YEAR:_____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone:____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Screen (TSP-8)
Parameter: Throughput
Limit: Shall not exceed 2,000,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone:____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Blend Plant
Parameter: Throughput
Limit: Shall not exceed 1,500,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Permanent Screening Plant
Parameter: Throughput
Limit: Shall not exceed 300,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)	(***Throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name:	Nucor Steel
Source Address:	4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.:	T107-45287-00038
Facility:	Meltshop, Tundish Preheaters TP1-TP5, Tunnel Furnace No. 1 and No.2, and Tunnel Furnace Snub
Parameter:	GHG (CO_2e) Emissions
Limit:	Shall not exceed 544,917 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***GHG Emissions***) (***tons***)	(***GHG Emissions***) (***tons***)	(***GHG Emissions***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone:____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name:	Nucor Steel
Source Address:	4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.:	T107-45287-00038
Facility:	DRI handling system
Parameter:	Direct reduced iron (DRI) throughput
Limit:	Less than 800,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***DRI throughput***) (***tons***)	(***DRI throughput***) (***tons***)	(***DRI throughput***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone:____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038
Facility: Chem Coater (CHEM)
Parameter: VOC
Limit: The VOC input, including coatings, dilution solvents and cleaning solvents, to the Chem Coater shall be less than 39.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER:____________________ YEAR:____________________

Month	Column 1	Column 2	Column 1 + Column 2
	(***VOC input***) (***tons***)	(***VOC input***) (***tons***)	(***VOC input***) (***tons***)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-37553-00038
Facility: Galvanizing Process FGT&S
Parameter: Hours of Operation
Limit: The Galvanizing Process FGT&S shall not exceed 3,500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	Hours Of Operation (Hours)	*Hours Of Operation* (Hours)	*Hours Of Operation* (Hours)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________.

Submitted by: ____
Title / Position: ____
Signature:____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-37553-00038
Facility: Shot Blasting Process SBT&S
Parameter: Hours of Operation
Limit: The shot blasting process SBT&S shall not exceed 3,000 hours per twelve (12) consecutive month period.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	Hours Of Operation (Hours)	*Hours Of Operation* (Hours)	*Hours Of Operation* (Hours)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________.

Submitted by: ________________________________
Title / Position: ________________________________
Signature: ________________________________
Date: ________________________________
Phone: ________________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-37553-00038
Facility: Pickling Operation CDPT&S
Parameter: Hours of Operation
Limit: The pickling process CDPT&S shall not exceed 5,200 hours of operation per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	Hours Of Operation (Hours)	*Hours Of Operation* (Hours)	*Hours Of Operation* (Hours)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ________________________.

Submitted by: ____
Title / Position: ____
Signature:____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-37553-00038
Facility: Coating Booth Operation CBT&S
Parameter: PM, PM10, and PM2.5 Emissions
Limit: The coatings applied by the coating booth operation CBT&S shall be limited such that total PM, PM10, and PM2.5 emissions shall not exceed 0.76 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

PM/PM10/PM2.5= $(\Sigma CU * D * W\%S) * (1 - TE/100) * (1 - CE/100) * 1/2000$
Where:
PM/PM10/PM2.5 = The total PM/PM10/PM2.5 emission (ton/month) for all coatings.
CU = The total coating use (gal coating/month) of each coating.
D = The density (lb coating/gal coating) of each coating.
W%S = The weight percent solids (lb solids/lb coating) of each coating.
TE = The transfer efficiency (%) of the spray applicators. This value shall equal 45% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
CE = The control efficiency (%) of the dry filters. This value shall equal 99% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	PM, PM10, PM2.5 Emissions (tons)	*PM, PM10, PM2.5 Emissions* (tons)	*PM, PM10, PM2.5 Emissions* (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ________________________.
Submitted by: ____
Title / Position: ____
Signature: ____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name:	Nucor Steel
Source Address:	4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.:	T107-37553-00038
Facility:	Galvanizing Furnace (NGGFT&S) and Dryer (NGDGT&S)
Parameter:	Total Amount of Natural Gas Combusted
Limit:	The total amount of natural gas combusted in the galvanizing furnace (NGGFT&S), dryer (NGDGT&S), shall each not exceed 101.96 million standard cubic feet of gas (MMSCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	Total NG Combusted (MMSCF)	*Total NG Combusted* (MMSCF)	*Total NG Combusted* (MMSCF)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________.

Submitted by: ____
Title / Position: ____
Signature:____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name:	Nucor Steel
Source Address:	4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.:	T107-37553-00038
Facility:	Heater (NGHT&S) and Space Heaters
Parameter:	Total Amount of Natural Gas Combusted
Limit:	The total amount of natural gas combusted in the heater (NGHT&S), and space heaters shall each not exceed 215.22 million standard cubic feet of gas (MMSCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	Total NG Combusted (MMSCF)	*Total NG Combusted* (MMSCF)	*Total NG Combusted* (MMSCF)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________.

Submitted by: ______________________________________
Title / Position: ______________________________________
Signature:____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
Part 70 Quarterly Report

Source Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-37553-00038
Facility: Coating Booth Operation CBT&S
Parameter: MDI emissions
Limit: The MDI emissions from the coating booth CBT&S shall not exceed 1 ton per twelve (12) consecutive month period with compliance determined at the end of each month.

MDI tons/month) = $\sum [(CU * D * W\%S) * (1 - TE/100) * (1 - CE/100) * MDI\%W * 1/2000]$

Where:

MDI = The total MDI emission (ton/month) for all coatings.
CU = The total coating use (gal coating/month) of each coating.
D = The density (lb coating/gal coating) of each coating.
W%S = The weight percent solids (lb solids/lb coating) of each coating.
TE = The transfer efficiency (%) of the spray applicators. This value shall equal 45% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
CE = The control efficiency (%) of the dry filters. This value shall equal 99% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
MDI%W = Weight percent of MDI in the coating.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	MDI Emissions (tons)	*MDI Emissions* (tons)	*MDI Emissions* (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ________________________.
Submitted by: ________________________
Title / Position: ________________________
Signature: ________________________
Date: ________________________
Phone: ________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
Part 70 Quarterly Report

Source Name:	Nucor Steel
Source Address:	4537 South Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.:	T107-37553-00038
Facility:	Coating Booth Operation CBT&S
Parameter:	Benzene emissions
Limit:	The Benzene emissions from the coating booth CBT&S shall not exceed 1 ton per twelve (12) consecutive month period with compliance determined at the end of each month.

Benzene (tons/month) = $\sum [(CU * D * W\%S) * (1 - TE/100) * (1 - CE/100) * B\%W * 1/2000]$

Where:

Benzene = The total Benzene emission (ton/month) for all coatings.
CU = The total coating use (gal coating/month) of each coating.
D = The density (lb coating/gal coating) of each coating.
W%S = The weight percent solids (lb solids/lb coating) of each coating.
TE = The transfer efficiency (%) of the spray applicators. This value shall equal 45% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
CE = The control efficiency (%) of the dry filters. This value shall equal 99% unless an IDEM approved test is conducted, in which case the value shall equal that determined from the most recent IDEM approved test.
B%W = Percent weight of Benzene in the coating.

QUARTER: ________YEAR: ________

Month	Column 1	Column 2	Column 1 + Column 2
	Benzene Emissions (tons)	*Benzene Emissions* (tons)	*Benzene Emissions* (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________.
Submitted by: ________________________________
Title / Position: ________________________________
Signature:________________________________
Date: ________________________________
Phone: ________________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Nucor Steel
Source Address: 4537 S. Nucor Road, Crawfordsville, Indiana 47933
Part 70 Permit No.: T107-45287-00038

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

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

Form Completed by:____

Title / Position: ____

Date:____

Phone: ____

Attachment E

Part 70 Operating Permit No: T 107-45287-00038

Electronic Code of Federal Regulations

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 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 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 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; 87 FR 48607, Aug. 10, 2022]

§ 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.

(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.

(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; 87 FR 48607, Aug. 10, 2022]

§ 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 1090.305 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 for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 1090.305 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) [Reserved]

(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, as amended at 85 FR 78463, Dec. 4, 2020; 87 FR 48607, Aug. 10, 2022]

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, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4), 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 the purpose specified in paragraph (f)(2)(i) 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)-(iii) [Reserved]

(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 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 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; 87 FR 48607, Aug. 10, 2022]

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, or no later than 120 days after the source becomes subject to this subpart, whichever is later.

(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, or no later than 120 days after the source becomes subject to this subpart, whichever is later.

(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; 85 FR 73912, Nov. 19, 2020]

§ 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 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)-(vi) {Reserved]

(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; 87 FR 48607, Aug. 10, 2022]

§ 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 purpose specified in § 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; 87 FR 48607, Aug. 10, 2022]

§ 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).

§ 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)(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; 87 FR 48608, Aug. 10, 2022]

Table 1a **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 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

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:

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 2a 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	

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
	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 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

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:

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.

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
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]

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

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:

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]

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
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	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;	

For each . . .	**You must meet the following requirement, except during periods of startup . . .**	**During periods of startup you must . . .**
	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]

Table 2d to Subpart ZZZZ of Part 63—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:

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.	

For each . . .	**You must meet the following requirement, except during periods of startup . . .**	**During periods of startup you must . . .**
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	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	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	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	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]

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

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

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, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

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. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and		(a) For CO, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter*and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A–1, the duct may be sampled at `3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A–4.
		ii. 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–2, or ASTM D6522–00 (Reapproved 2005)[13] (heated probe not necessary)	(b) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		iii. Measure the CO at the inlet and the outlet of the control device; and	(2) ASTM D6522–00 (Reapproved 2005)[123] (heated probe not necessary) or method 10 of 40 CFR part 60, appendix A–4	(c) The CO concentration must be at 15 percent O_2, dry basis.
		iv. Measure moisture content at the inlet and outlet of the control device as needed to determine CO and O_2 concentrations on a dry basis	(3) Method 4 of 40 CFR part 60, appendix A–3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03[13]	(d) Measurements to determine moisture content must be made at the same time and location as the measurements for CO concentration.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
2. 4SRB stationary RICE	a. Reduce formaldehyde or THC emissions	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and		(a) For formaldehyde, THC, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line (`3-point long line'). If the duct is >12 inches in diameter*and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at `3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A.
		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–2, or ASTM D6522–00 (Reapproved 2005)[13] (heated probe not necessary)	(b) 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 as needed to determine formaldehyde or THC and O_2 concentrations on a dry basis; and	(2) Method 4 of 40 CFR part 60, appendix A–3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03[13]	(c) 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	(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03,[13] 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	(d) 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.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(4) (1) Method 25A, reported as propane, of 40 CFR part 60, appendix A–7	(e) 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/location of traverse points at the exhaust of the stationary RICE; and		(a) For formaldehyde, CO, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line (`3-point long line'). If the duct is >12 inches in diameter*and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at `3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix 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 sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A–2, or ASTM D6522–00 (Reapproved 2005)[13] (heated probe not necessary)	(b) Measurements to determine O_2 concentration must be made at the same 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 as needed to determine formaldehyde or CO and O_2 concentrations on a dry basis; and	(2) Method 4 of 40 CFR part 60, appendix A–3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03[13]	(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03,[13] 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	(d) 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	(4) Method 10 of 40 CFR part 60, appendix A–4, ASTM D6522–00 (2005),[13] method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03[13]	(e) 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.

[1] You may also use methods 3A and 10 as options to ASTM–D6522–00 (2005).

[2] You may obtain a copy of ASTM–D6348–03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[3] Incorporated by reference, see § 63.14.

[88 FR 18413, Mar. 29, 2023]

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:

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 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 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 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.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
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 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 using a CEMS	i. You have installed a CEMS to continuously monitor CO and either 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.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
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 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.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
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.
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.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
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:

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

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		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 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.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
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 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 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 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.

For each . . .	**Complying with the requirement to . . .**	**You must demonstrate continuous compliance by . . .**
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 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	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.
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

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		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.
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 averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
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:

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.
		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).

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
4. Emergency stationary RICE 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).

[87 FR 48608, Aug. 10, 2022]

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]		
§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.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§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.
§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.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§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 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.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that §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.	
§63.9(k)	Electronic reporting procedures	Yes	Only as specified in §63.9(j).
§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.	
§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.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§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; 85 FR 73912, Nov. 19, 2020]

Appendix A to Subpart ZZZZ of Part 63—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											
″											
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Facility___________ Engine I.D.___________ Date______											
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Mean											
Refresh Phase											
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″											
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″											

[78 FR 6721, Jan. 30, 2013]

Attachment G

Part 70 Operating Permit No: T 107-45287-00038

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Source: 71 FR 39172, July 11, 2006, unless otherwise noted.

What This Subpart Covers

§ 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(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.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) 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 applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C, except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE 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.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011; 86 FR 34357, June 29, 2021]

Emission Standards for Manufacturers

§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 1039.102, 1039.104, 1039.105, 1039.107, and 1039.115 and 40 CFR part 1039, appendix I, as applicable, for all pollutants, for the same model year and maximum engine power.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.

(d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the appropriate Tier 2 emission standards for new marine CI engines as described in 40 CFR part 1042, appendix I, for all pollutants, for the same displacement and rated power:

(1) Their 2007 model year through 2012 non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(3) Their 2013 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(e) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards and other requirements for new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.110, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) of this section may be certified to the provisions of 40 CFR part 1042 for commercial engines that are applicable for the engine's model year, displacement, power density, and maximum engine power if the engines will be used solely in either or both of the following locations:

(1) Remote areas of Alaska; and

(2) Marine offshore installations.

(g) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power, and displacement of the reconstructed stationary CI ICE.

(h) Stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with auxiliary emission control devices (AECDs) as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I, while the AECD is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34357, June 29, 2021]

§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The Tier 2 emission standards for new nonroad CI engines for the appropriate rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 for model year 2007 engines; and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a rated power greater than or equal to 37 KW (50 HP), the Tier 2 or Tier 3 emission standards for new nonroad CI engines for the same rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 beginning in model year 2007.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(2) For 2011 model year and later, the Tier 2 emission standards as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105.

(c) [Reserved]

(d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.

(e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the appropriate Tier 2 emission standards for new marine CI engines as described in 40 CFR part 1042, appendix I, for all pollutants, for the same displacement and rated power:

(1) Their 2007 model year through 2012 emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder;

(3) Their 2013 model year emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder; and

(4) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(f) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE to the certification emission standards and other requirements applicable to Tier 3 new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power less than 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI ICE identified in paragraphs (a) and (c) of this section may be certified to the provisions of 40 CFR part 1042 for commercial engines that are applicable for the engine's model year, displacement, power density, and maximum engine power if the engines will be used solely in either or both of the locations identified in paragraphs (g)(1) and (2) of this section. Engines that would be subject to the Tier 4 standards in 40 CFR part 1042 that are used solely in either or both of the locations identified in paragraphs (g)(1) and (2) of this section may instead continue to be certified to the previous tier of standards in 40 CFR part 1042. The previous tier is Tier 3 in most cases; however, the previous tier is Tier 2 if there are no Tier 3 standards specified for engines of a certain size or power rating.

(1) Remote areas of Alaska; and

(2) Marine offshore installations.

(h) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (f) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed emergency stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34358, June 29, 2021; 88 FR 4471, Jan. 24, 2023]

§ 60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§ 60.4201 and 60.4202 during the certified emissions life of the engines.

[76 FR 37968, June 28, 2011]

Emission Standards for Owners and Operators

§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I.

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in § 60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

(c) Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm);

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012 and before January 1, 2016, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) For engines installed on or after January 1, 2016, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) 9.0 · $n^{-0.20}$ g/KW-hr (6.7 · $n^{-0.20}$ g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm; and

(iii) 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm.

(4) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

(d) Owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the not-to-exceed (NTE) standards as indicated in § 60.4212.

(e) Owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified in paragraphs (a) through (d) of this section.

(f) Owners and operators of stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with AECDs as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I, while the AECD is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34358, June 29, 2021]

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I.

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in § 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

(d) Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) 45 · $n^{-0.2}$ g/KW-hr (34 · $n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/kW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

(e) Owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in § 60.4212.

(f) Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 86 FR 34358, June 29, 2021]

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§ 60.4204 and 60.4205 over the entire life of the engine.

[76 FR 37969, June 28, 2011]

Fuel Requirements for Owners and Operators

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) [Reserved]

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

(c) [Reserved]

(d) Beginning June 1, 2012, owners and operators of stationary CI ICE subject to this subpart with a displacement of greater than or equal to 30 liters per cylinder must use diesel fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).

(e) Stationary CI ICE that have a national security exemption under § 60.4200(d) are also exempt from the fuel requirements in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 78 FR 6695, Jan. 30, 2013; 85 FR 78463, Dec. 4, 2020]

Other Requirements for Owners and Operators

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

(h) In addition to the requirements specified in §§ 60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.

(i) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in § 60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in § 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

Compliance Requirements

§ 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §§ 60.4201(a) through (c) and 60.4202(a), (b), and (d) using the certification procedures required in 40 CFR part 1039, subpart C, and must test their engines as specified in 40 CFR part 1039. For the purposes of this subpart, engines certified to the standards in Table 1 to this subpart shall be subject to the same certification procedures required for engines certified to the Tier 1 standards in 40 CFR part 1039, appendix I. For the purposes of this subpart, engines certified to the standards in Table 4 to this subpart shall be subject to the same certification procedures required for engines certified to the Tier 1 standards in 40 CFR part 1039, appendix I, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in §§ 60.4201(d) and (e) and 60.4202(e) and (f) using the certification procedures required in 40 CFR part 1042, subpart C, and must test their engines as specified in 40 CFR part 1042.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135 and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

(1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.

(2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:

(i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.

(ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.

(iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR part 1039 or 1042, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR part 1039 or 1042, as appropriate, but the words “stationary” must be included instead of “nonroad” or “marine” on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR part 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking, and trading provisions applicable for such engines under those parts.

(e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words “and stationary” after the word “nonroad” or “marine,” as appropriate, to the label.

(f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in § 60.4202 but does not meet all the emission standards for non-emergency engines in § 60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.

(g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as “Fire Pump Applications Only”.

(h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of § 60.4201 or § 60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.

(i) The replacement engine provisions of 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

(j) Stationary CI ICE manufacturers may equip their stationary CI internal combustion engines certified to the emission standards in 40 CFR part 1039 with AECDs for qualified emergency situations according to the requirements of 40 CFR 1039.665. Manufacturers of stationary CI ICE equipped with AECDs as allowed by 40 CFR 1039.665 must meet all the requirements in 40 CFR 1039.665 that apply to manufacturers. Manufacturers must document that the engine complies with the Tier 1 standard in 40 CFR part 1039, appendix I, when the AECD is activated. Manufacturers must provide any relevant testing, engineering analysis, or other information in sufficient detail to support such statement when applying for certification (including amending an existing certificate) of an engine equipped with an AECD as allowed by 40 CFR 1039.665.

(k) Manufacturers of any size may certify their emergency stationary CI internal combustion engines under this section using assigned deterioration factors established by EPA, consistent with 40 CFR 1039.240 and 1042.240.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34358, June 29, 2021]

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR part 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(a) or § 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified to emission standards for the same model year and maximum engine power as described in 40 CFR parts 1039 and 1042, as applicable. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in § 60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(b) or § 60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must comply by purchasing an engine certified to the emission standards in § 60.4204(b), or § 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(d) If you are an owner or operator and must comply with the emission standards specified in § 60.4204(c) or § 60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in § 60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and NO_X and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NO_X and PM emissions;

(iii) 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;

(iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in § 60.4213.

(e) If you are an owner or operator of a modified or reconstructed stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(e) or § 60.4205(f), you must demonstrate compliance according to one of the methods specified in paragraphs (e)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in § 60.4204(e) or § 60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in § 60.4212 or § 60.4213, as appropriate. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3), 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 ICE in emergency situations.

(2) You may operate your emergency stationary ICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE 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 ICE beyond 100 hours per calendar year.

(ii)-(iii) [Reserved]

(3) Emergency stationary ICE 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 provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar 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) 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.

(ii) [Reserved]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain

and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

(h) The requirements for operators and prohibited acts specified in 40 CFR 1039.665 apply to owners or operators of stationary CI ICE equipped with AECDs for qualified emergency situations as allowed by 40 CFR 1039.665.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013; 81 FR 44219, July 7, 2016; 86 FR 34359, June 29, 2021; 87 FR 48605, Aug. 10, 2022]

Testing Requirements for Owners and Operators

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder. Alternatively, stationary CI ICE that are complying with Tier 2 or Tier 3 emission standards as described in 40 CFR part 1039, appendix I, or with Tier 2 emission standards as described in 40 CFR part 1042, appendix I, may follow the testing procedures specified in § 60.4213, as appropriate.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE subject to Tier 2 or Tier 3 emission standards as described in 40 CFR part 1039, appendix I, or Tier 2 emission standards as described in 40 CFR part 1042, appendix I, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \quad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR part 1039 or 1042, as applicable.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in § 60.4204(a), § 60.4205(a), or § 60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in § 60.4204(a), § 60.4205(a), or § 60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in § 60.4204(a), § 60.4205(a), or § 60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in § 60.4204(a), § 60.4205(a), or § 60.4205(c) may follow the testing procedures specified in § 60.4213, as appropriate.

(e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011; 86 FR 34359, June 29, 2021]

§ 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted according to the requirements in § 60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in § 60.8(f). Each test run must last at least 1 hour.

(d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.

(1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \qquad \text{(Eq. 2)}$$

Where:

C_i = concentration of NO_X or PM at the control device inlet,

C_o = concentration of NO_X or PM at the control device outlet, and

R = percent reduction of NO_X or PM emissions.

(2) You must normalize the NO_X or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O_2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO_2) using the procedures described in paragraph (d)(3) of this section.

$$C_{adj} = C_d \frac{5.9}{20.9 - \%\ O_2} \qquad \text{(Eq. 3)}$$

Where:

C_{adj} = Calculated NO_X or PM concentration adjusted to 15 percent O_2.

C_d = Measured concentration of NO_X or PM, uncorrected.

5.9 = 20.9 percent O_2−15 percent O_2, the defined O_2 correction value, percent.

$\%O_2$ = Measured O_2 concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O_2 and CO_2 concentration is measured in lieu of O_2 concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (d)(3)(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:

$$F_o = \frac{0.209_{F_d}}{F_c} \qquad \text{(Eq. 4)}$$

Where:

F_o = Fuel factor based on the ratio of O_2 volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O_2, 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:

$$X_{CO_2} = \frac{5.9}{F_o} \qquad \text{(Eq. 5)}$$

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 NO_X and PM gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \qquad (Eq.\ 6)$$

Where:

C_{adj} = Calculated NO_X or PM concentration adjusted to 15 percent O_2.

C_d = Measured concentration of NO_X or PM, uncorrected.

$\%CO_2$ = Measured CO_2 concentration, dry basis, percent.

(e) To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{\text{KW-hour}} \qquad (Eq.\ 7)$$

Where:

ER = Emission rate in grams per KW-hour.

C_d = Measured NO_X concentration in ppm.

1.912×10^{-3} = Conversion constant for ppm NO_X to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

(f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{\text{KW-hour}} \qquad (Eq.\ 8)$$

Where:

ER = Emission rate in grams per KW-hour.

C_{adj} = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

Notification, Reports, and Records for Owners and Operators

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates for the purpose specified in § 60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(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)-(vi) [Reserved]

(vii) Hours spent for operation for the purposes specified in § 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(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 § 60.4.

(e) Owners or operators of stationary CI ICE equipped with AECDs pursuant to the requirements of 40 CFR 1039.665 must report the use of AECDs as required by 40 CFR 1039.665(e).

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013; 81 FR 44219, July 7, 2016; 87 FR 48606, Aug. 10, 2022]

Special Requirements

§ 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

(a) Stationary CI ICE with a displacement of less than 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §§ 60.4202 and 60.4205.

(b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in § 60.4207.

(c) Stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the following emission standards:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

§ 60.4216 What requirements must I meet for engines used in Alaska?

(a) Prior to December 1, 2010, owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder located in areas of Alaska not accessible by the FAHS should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.

(b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in remote areas of Alaska may meet the requirements of this subpart by manufacturing and installing engines meeting the Tier 2 or Tier 3 emission standards described in 40 CFR part 1042 for the same model year, displacement, and maximum engine power, as appropriate, rather than the otherwise applicable requirements of 40 CFR part 1039, as indicated in §§ 60.4201(f) and 60.4202(g).

(c) Manufacturers, owners, and operators of stationary CI ICE that are located in remote areas of Alaska may choose to meet the applicable emission standards for emergency engines in §§ 60.4202 and 60.4205, and not those for non-emergency engines in §§ 60.4201 and 60.4204, except that for 2014 model year and later nonemergency CI ICE, the owner or operator of any such engine must have that engine certified as meeting at least the Tier 3 PM standards identified in appendix I of 40 CFR part 1039 or in 40 CFR 1042.101.

(d) The provisions of § 60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to this subpart that are located in remote areas of Alaska.

(e) The provisions of § 60.4208(a) do not apply to owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS until after December 31, 2009.

(f) The provisions of this section and § 60.4207 do not prevent owners and operators of stationary CI ICE subject to this subpart that are located in remote areas of Alaska from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 parts per million. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.

[76 FR 37971, June 28, 2011, as amended at 81 FR 44219, July 7, 2016; 86 FR 34359, June 29, 2021]

§ 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in § 60.4204 or § 60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.

[76 FR 37972, June 28, 2011]

General Provisions

§ 60.4218 What General Provisions and confidential information provisions apply to me?

(a) Table 8 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

(b) The provisions of 40 CFR 1068.10 and 1068.11 apply for engine manufacturers. For others, the general confidential business information (CBI) provisions apply as described in 40 CFR part 2.

[88 FR 4471, Jan. 24, 2023]

Definitions

§ 60.4219 What definitions apply to this subpart?

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

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.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 1042.101(e).

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

(1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.

(2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.

(3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

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 number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE 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 ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4211(f)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of “manufacturer” in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means the calendar year in which an engine is manufactured (see “date of manufacture”), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see “date of manufacture”), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see “date of manufacture”).

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Remote areas of Alaska means areas of Alaska that meet either paragraph (1) or (2) of this definition.

(1) Areas of Alaska that are not accessible by the Federal Aid Highway System (FAHS).

(2) Areas of Alaska that meet all of the following criteria:

(i) The only connection to the FAHS is through the Alaska Marine Highway System, or the stationary CI ICE 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 CI ICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the source is less than 12 megawatts, or the stationary CI ICE is used exclusively for backup power for renewable energy.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas 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 internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011; 78 FR 6696, Jan. 30, 2013; 81 FR 44219, July 7, 2016; 86 FR 34360, June 29, 2021; 87 FR 48606, Aug. 10, 2022]

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder

[As stated in §§60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO_X	HC	NO_X	CO	PM
KW<8 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder

[As stated in §60.4202(a)(1), you must comply with the following emission standards]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO_X + NMHC	CO	PM
KW<8 (HP<11)	2008 +	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008 +	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008 +	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

Table 3 to Subpart IIII of Part 60—Certification Requirements for Stationary Fire Pump Engines

As stated in §60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to §60.4202(d)[1]
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

[1]Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011]

Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines

[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	$NMHC + NO_X$	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011 +	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011 +	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011 +	7.5 (5.6)		0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011 +[1]	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011 +[1]	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010 +[2]	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)

Maximum engine power	Model year(s)	NMHC + NO_X	CO	PM
	2009 +[3]	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +[3]	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008 +	6.4 (4.8)		0.20 (0.15)

[1]For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

[2]For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

[3]In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

Table 5 to Subpart IIII of Part 60—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines

[You must comply with the labeling requirements in §60.4210(f) and the recordkeeping requirements in §60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

Table 6 to Subpart IIII of Part 60—Optional 3-Mode Test Cycle for Stationary Fire Pump Engines

[As stated in §60.4210(g), manufacturers of fire pump engines may use the following test cycle for testing fire pump engines:]

Mode No.	Engine speed[1]	Torque (percent)[2]	Weighting factors
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

[1]Engine speed: ±2 percent of point.

[2]Torque: NFPA certified nameplate HP for 100 percent point. All points should be ±2 percent of engine percent load value.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder

As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥ 30 liters per cylinder	a. Reduce NO_X emissions by 90 percent or more;	i. Select the sampling port location and number/location of traverse points at the inlet and outlet of the control device;		(a) For NO_X, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure O_2 at the inlet and outlet of the control device;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO_X concentration.
		iv. Measure NO_X at the inlet and outlet of the control device.	(3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(d) NO_X 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.

Each	**Complying with the requirement to**	**You must**	**Using**	**According to the following requirements**
	b. Limit the concentration of NO_X in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and number/location of traverse points at the exhaust of the stationary internal combustion engine;		(a) For NO_X, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurement for NO_X concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO_X concentration.
		iv. Measure NO_X at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(d) NO_X 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.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(a) Sampling sites must be located at the inlet and outlet of the control device.

Each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the inlet and outlet of the control device.	(4) Method 5 of 40 CFR part 60, appendix A-3	(d) PM 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.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(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 internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, appendix A-3	(d) PM 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.

[79 FR 11251, Feb. 27, 2014]

Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII

[As stated in §60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes	Except that §60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Part 70 Significant Source Modification and Significant Permit Modification

Source Background and Description

Source Name:	**Nucor Steel**
Source Location:	**4537 S. Nucor Road, Crawfordsville, Indiana 47933**
County:	**Montgomery**
SIC Code:	**3312 (Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills)**
Operation Permit No.:	**T 107-45287-00038**
Operation Permit Issuance Date:	**January 24, 2024**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Permit Reviewer:	**Aasim Noveer**

On May 20, 2024, the Office of Air Quality (OAQ) had a notice posted on IDEM's website (https://www.in.gov/idem/public-notices/), stating that Nucor Steel had applied for a Significant Source Modification to Replacements and Warehouse Project. The notice also stated that the OAQ proposed to issue a Significant Permit Modification for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On June 6, 2024, Gurinder Saini from RTP Environmental Associates Inc. submitted comments to IDEM, OAQ on the draft Part 70 Significant Source Modification and Significant Permit Modification.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

The draft permit condition D.5.5(a) requires permittee to conduct visible emissions notations (VEN) of the four lime/dolo silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) once per day during normal daylight operations. Further, for discontinuous operations, readings are required to be taken during "… part of the operation that would normally be expected to cause the greatest emissions."

The proposed lime silos will be equipped with inherent bin vent filters. Trucks with lime will be pneumatically unloaded into the silos and the inherent bin vent filters allow for displacement air to be released while ensuring transport / recovery of dolo/lime in the silos. Thus, particulate matter emissions only occur during the truck unloading activity (discontinuous operation). Per IDEM guidance (January 2011 Compliance Monitoring Guidance), for operations that involve coal, limestone, gypsum handling units including 'unloading points,' once per week visible emissions notations should be considered for compliance monitoring. Lime is similar to the limestone material in terms of its characteristics. Further, it is likely that when in operation, each silo will be filled couple of times a week. Therefore, requirement for daily VEN of the four silos bin vent filters is redundant and unnecessary, especially when no emissions causing activity will be occurring. We request IDEM change the VEN frequency to weekly for the four silos under condition D.5.5(a).

Response to Comment 1:

As specified in IDEM's Compliance Monitoring Guidance drop and unloading points involving coal, limestone, and gypsum may be subject to once per week compliance monitoring requirements, but in this case the lime silos move material pneumatically. Therefore, since these lime silos do not meet the criteria specified in the compliance monitoring guidance document, the source must perform daily monitoring to assure compliance with emission limitations in Conditions D.5.1 and D.5.2.

Pursuant to Condition D.5.6(a) in the draft permit the Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a notation. For example, if the lime silo is not filled the Permittee can note that as the reason a visible emission notation was not taken on a particular day.

No changes were made as a result of this comment.

Comment 2:

The draft Permit documents carry over some of the conditions that Nucor had previously appealed before the Indiana Office of Environmental Adjudication in Cause No. 23-A-J-5246. In light of that appeal, we are providing the following general comment on incorporation of Coating Complex Permit provisions.

The draft Part 70 Operating Permit modification 107-47382-00038 and associated source modification (107-46841) incorporate conditions from SSM 107-45480-00038 and SPM 107-45562-00038. Nucor filed comments on the draft SSM and SPM requesting changes to certain aspects of the BACT requirements and associated monitoring, recordkeeping and reporting requirements for the project affected units. IDEM, OAQ issued the final permit without fully resolving Nucor's concerns and Nucor filed appeals of both SSM 107-45480-00038 and SPM 107-45562-00038. Nucor hereby incorporates both its prior filed comments (to the extent relevant) and the objections to the BACT and associated monitoring, recordkeeping and reporting requirements in its appeals in its comments on this Part 70 Operating Permit modification and associated source modification. Nucor requests that IDEM, OAQ specifically acknowledge that if Nucor is successful in its appeal of SSM 107-45480-00038 and any conditions of that permit are revised as a result of the appeal, that the Title V permit will be reopened and revised to reflect the resolution of that pending appeal. This may obviate the need for an appeal of this permit solely based on the proposed incorporation of conditions under appeal in another contested case.

Response to Comment 2:

IDEM acknowledges that Nucor has appealed conditions in previously issued permits. Any appeal resolutions would be subject to the administrative procedures based on the appropriate permitting level.

No changes were made as a result of this comment.

IDEM Contact

(a) If you have any questions regarding this permit, please contact Aasim Noveer, 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) 234-1243 or (800) 451-6027, and ask for Aasim Noveer or (317) 234-1243.

(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 Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/public-participation/; and the Citizens' Guide to IDEM on the Internet at: https://www.in.gov/idem/resources/citizens-guide-to-idem/.

Indiana Department of Environmental Management
Office of Air Quality

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

Source Description and Location

Source Name:	**Nucor Steel**
Source Location:	**4537 S. Nucor Road, Crawfordsville, Indiana 47933**
County:	**Montgomery**
SIC Code:	**3312 (Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills)**
Operation Permit No.:	**T 107-45287-00038**
Operation Permit Issuance Date:	**January 24, 2024**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Permit Reviewer:	**Aasim Noveer**

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; 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.

This determination was initially made under Part 70 Operating Permit No. 107-7172-00038, issued on December 29, 2006.

Existing Approvals

The source was issued Part 70 Operating Permit Renewal No. 107-45287-00038 on January 24, 2024. The source has since received the following approvals:

Permit Type	Permit Number	Issuance Date
Significant Source Modification	107-46841-00038	February 16, 2024
Significant Permit Modification	107-47380-00038	March 6, 2024

County Attainment Status

The source is located in Montgomery County.

Pursuant to amendments to Indiana Code IC 13-17-3-14, effective July 1, 2023, a federal regulation that classifies or amends a designation of attainment, nonattainment, or unclassifiable for any area in Indiana under the federal Clean Air Act is effective and enforceable in Indiana on the effective date of the federal regulation.

Pollutant	Designation
SO_2	Unclassifiable or attainment effective April 9, 2018, for the 2010 primary 1-hour SO_2 standard. Better than national secondary standards effective March 3, 1978.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective January 16, 2018, for the 2015 8-hour ozone standard.
$PM_{2.5}$	Unclassifiable or attainment effective April 15, 2015, for the 2012 annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 2006 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Unclassifiable or attainment effective January 29, 2012, for the 2010 NO_2 standard.
Pb	Unclassifiable or attainment effective December 31, 2011, for the 2008 lead standard.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Montgomery County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements of Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Montgomery County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements of Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Montgomery County has been classified as attainment or unclassifiable in Indiana for all 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 an iron and steel mill plant, it is considered one (1) of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B). Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The fugitive emissions of hazardous air pollutants (HAP) are counted toward the determination of Part 70 Permit applicability and source status under Section 112 of the Clean Air Act (CAA).

Greenhouse Gas (GHG) Emissions

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

Source Status - Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

	Source-Wide Emissions Prior to Modification (ton/year)								
	PM[1]	PM_{10}[1]	$PM_{2.5}$[1, 2]	SO_2	NO_X	VOC	CO	Single HAP[3]	Total HAPs
Total PTE of Entire Source Including Fugitives*	>100	>100	>100	>100	>100	>100	>100	>10	>25
Title V Major Source Thresholds	NA	100	100	100	100	100	100	10	25
PSD Major Source Thresholds	100	100	100	100	100	100	100	--	--

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."
[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.
[3]Single highest source-wide HAP
*Fugitive HAP emissions are always included in the source-wide emissions.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant(s), PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, and CO, is emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions are equal to or greater than ten (10) tons per year for a single HAP and equal to or greater than twenty-five (25) tons per year for a combination of HAPs.

(c) These emissions are based on the TSD of Significant Permit Modification No. 107-45562-00038, issued on May 3, 2023.

Emission Units and Pollution Control Equipment
Constructed Under the Provisions of 326 IAC 2-1.1-3 (Exemptions)

As part of this permitting action, the source requested to add the following existing emission unit constructed under the provisions of 326 IAC 2-1.1-3 (Exemptions):

(a) Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled. (permit section D.13).

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

The total potential to emit of the emission unit(s) is less than levels specified at 326 IAC 2-1.1-3(e)(1)(A) through (G) and the addition of the emission unit(s) did not require the source to transition to a higher operation permit level. Therefore, pursuant to 326 IAC 2-1.1-3(e), the modification approval requirements under 326 IAC 2-7-10.5, including the requirement to submit an application, do not apply to the emission unit(s). See Appendix A of this Technical Support Document for detailed emission calculations.

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed an application, submitted by Nucor Steel on March 7, 2024, related to the following changes.

Replacements and Warehouse Project:

1. Addition of two (2) cooling towers (permit section D.11).
2. Addition of a diesel-fired emergency generator (permit section D.13).
3. Addition of two (2) ladle dryers (permit section D.29).
4. Addition of four (4) lime/dolo silos (permit section D.5 – Insignificant Activities).
5. Addition of eight (8) NG-fired heaters (Insignificant Activities - Facility Wide).

The following is a list of the new emission units and pollution control device(s):

(1) One cooling tower (non-contact) identified as GANCT, approved in 2024 for construction for the Galvanizing/Annealing operations with an average capacity of 5,000 gallons/min.

(2) One cooling tower (non-contact), identified as ANCT, approved in 2024 for construction for the Annealing operations with an average capacity of 3,000 gallons/min.

(3) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

(4) Two (2) natural gas-fired Ladle Dryers, identified as LDSN#1 and LDSN#2, approved in 2024 for construction, with a heat input capacity of 10 MMBtu per hour, with uncontrolled emissions exhausting the Meltshop baghouses.

(5) Four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2, approved in 2024 for construction, each equipped with bin vent filters (passive system).

(6) Eight (8) natural gas-fired space heaters for warehouse with heat input equal to or less than ten million (10,000,000) Btu per hour each.

As part of this permitting action, the following emission unit is being removed from the permit:

(1) Galv Line Pot emergency generator, identified as GEN #4, constructed in 1992, with a capacity of 890 HP, with emissions uncontrolled. (permit section D.13).

"Integral Part of the Process" Determination

The source submitted the following information to justify why the bin vent filters should be considered an integral part of the four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2.

(a) The lime/dolo silos use a pneumatic system and are equipped with inherent bin vent filters to ensure proper functioning of the transfer process. In this case, Nucor Steel believes bin vent filters are inherent to the process based on an EPA letter to the National Ready Mixed Concrete Association, issued on July 10, 2002, about Criteria for Determining Whether Equipment is Air Pollution Control Equipment or Process Equipment (https://www.epa.gov/sites/default/files/2015-07/documents/readymix2.pdf).

IDEM, OAQ evaluated the information submitted and has determined that the passive bin vent filters should not be considered an integral part of the four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2. This determination is based on the fact that the EPA letter was only about cement silos located at ready mixed concrete facilities. This letter explicitly includes a caution that it was not intended to set a precedent for control equipment for other source types, which must be reviewed separately. Therefore, the potential to emit particulates from the four (4) Lime/Dolo Silos were calculated before the bin vent filters for purposes of determining permitting level and applicability of 326 IAC 2-2 and 326 IAC 6-3.

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.

Project Aggregation

The proposed Project involves a "physical change in, or change in the method of operation of, a major stationary source." Therefore, per the definition of 'major modification' under 326 IAC 2-2-1(dd), project emissions increase evaluations for regulated NSR pollutants are required for the proposed changes to determine if it is 'significant' as defined in 326 IAC 2-2-1(xx) and (ww). Various aspects of major modification applicability are described below.

(a) *Project aggregation* – In 2009 and 2018, the U.S. EPA issued interpretive rule addressing project aggregation interpretation to address multiple changes at major stationary sources for applicability of major modification. This interpretation provided that an applicant should combine nominally-separate changes for purposes of the emissions increase analysis only when those changes are "substantially related." It further described the case-specific nature of project aggregation determination when evaluating whether changes are substantially related, based on factors, such as technical or economic dependence.

Nucor applied for an air permit for installation of a continuous galvanizing line and a continuous coating line at the Crawfordsville facility on June 2, 2022 ("Coating Complex Project"). The Coating Complex Project involved installation of two steel coil finishing lines that will further process steel sheet from the hot strip mill to produce value-added products such as the galvanized sheet and painted sheet products. The Coating Complex Project was independently funded; it went through an internal capital appropriation approval based on its own rate of return on the capital investment.

Nucor also applied for another air permit for installation of a Towers and Structures operation at the Crawfordsville facility on July 19, 2023 ("T&S Project"). Equipment proposed under the T&S Project will produce poles or smaller diameter tubes that may be galvanized or coated for use as towers or in other similar applications. The T&S Project is independently funded; it went through an internal capital appropriation approval based on its own rate of return on the capital investment.

In developing both the Coating Complex Project and T&S Project, no consideration was given to the proposed changes under the Replacements and Warehouse Project. Operation of the proposed equipment under the Replacement and Warehouse Project is technically independent of the two other previously permitted installations; there is no overlap between the process units and emissions units under the two projects.

The Replacement and Warehouse Project (under this application) is separately funded, based on its own rate of return for Nucor or site maintenance needs. As noted above, there is no technical or economic dependency or other relationship between the proposed changes under this project and the two other previously permitted projects.

Since the projects are both technically and economically independent of each other, these are unrelated changes. Therefore, the proposed Replacement and Warehouse Project is NOT ‘substantially related’ to the other projects at the Nucor’s Crawfordsville facility and is properly considered a separate project for the PSD major modification applicability analysis.

(b) The proposed Replacements and Warehouse Project only involves installation of the new emissions units. No existing emissions units are affected by the project. Therefore, PTE of regulated NSR pollutants from the new emissions units is used for determining the major modification applicability.

Permit Level Determination – Part 70 Modification to an Existing Source

Pursuant to 326 IAC 2-1.1-1(12), 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. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

	PTE Before Controls of the New Emission Units (ton/year)							
Process / Emission Unit	**Unit ID**	**PM**	**PM_{10}**	**$PM_{2.5}$[1]**	**SO_2**	**NO_X**	**VOC**	**CO**
Galv/ Anneal cooling tower	GANCT	1.64	0.82	0.003	-	-	-	-
Anneal cooling tower	ANCT	0.99	0.49	0.002	-	-	-	-
Emergency Generator	GEN #3a	0.14	0.16	0.16	0.004	4.41	1.05	2.41
Ladle Dryers	LDSN#1 LDSN#2	0.16	0.65	0.65	0.05	8.59	0.47	7.21
Lime Silos	SEAFN1 SEAFN2 NEAFN1 NEAFN2	120.14	120.14	120.14	-	-	-	-
Warehouse Heating	WHSHS	0.02	0.07	0.07	0.01	0.91	0.05	0.76
Total PTE Before Controls of the New Emission Units:		**123.09**	**122.33**	**121.02**	**0.06**	**13.90**	**1.58**	**10.39**
[1]$PM_{2.5}$ listed is direct $PM_{2.5}$. HAPs are negligible.								

Appendix A of this TSD reflects the detailed potential emissions of the modification.

(a) Approval to Construct

Pursuant to 326 IAC 2-7-10.5(g)(4), a Significant Source Modification is required because this modification has the potential to emit PM, PM_{10} and $PM_{2.5}$ at equal to or greater than twenty-five (25) tons per year.

(b) Approval to Operate

Pursuant to 326 IAC 2-7-12(d)(1), this change to the permit is being made through a Significant Permit Modification because this modification does not qualify as a Minor Permit Modification or as an Administrative Amendment.

Permit Level Determination – PSD Emissions Increase (Project 2022)

(a) Actual to Potential (ATP) Applicability Test
Since this project only involves the construction of new emissions units and/or emissions units considered new for this evaluation, an Actual to Potential (ATP) applicability test, specified in 326 IAC 2-2-2(d)(4), is used to determine if the project results in a Significant Emissions Increase.

(b) New Emissions Units Only
Pursuant to 326 IAC 2-2-1(t)(1), a new emissions unit is any emissions unit that is, or will be, newly constructed and that has existed for less than two (2) years from the date the emissions unit first operated.

(c) Baseline Actual Emissions
For a new emissions unit, the baseline actual emissions for purposes of determining the Emissions Increase that will result from the initial construction and operation of the unit shall equal zero (0) and thereafter, for all other purposes, shall equal the unit's potential to emit.

(d) Actual to Potential (ATP) Summary
The Emissions Increase of the project is the sum of the difference between the potential to emit (PTE) from **each new emissions** unit following completion of the project and the baseline actual emissions of these units before the project.

$ATP_{(new\ unit)} = PTE_{(new\ unit)} - Baseline\ Emissions_{(new\ unit)}$

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

Project 2022 Emissions Increase (tons/year) Renewal No. 107-45287-00038								
Process/ Emissions Unit	**Unit ID**	**PM**	**PM_{10}**	**$PM_{2.5}$***	**SO_2**	**NO_x**	**VOC**	**CO**
Emergency Generator	GEN #4a	0.03	0.03	0.03	0.14	4.41	0.02	0.18
Project Emissions Increase		**0.03**	**0.03**	**0.03**	**0.14**	**4.41**	**0.02**	**0.18**
Significant Levels		25	15	10	40	40	40	100
*PM2.5 listed is direct PM2.5.								

(e) Upstream/Downstream Increased Utilization
No existing emissions units are affected as part of this project; there will not be any increased utilization in upstream or downstream units.

(f) Conclusion

This modification to an existing major PSD stationary source was not major because the Emissions Increase of each PSD regulated pollutant is less than the PSD significant level (i.e., the modification does not cause a Significant Emissions Increase). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Permit Level Determination – PSD Emissions Increase (Project 2024)

(a) Actual to Potential (ATP) Applicability Test
Since this project only involves the construction of new emissions units and/or emissions units considered new for this evaluation, an Actual to Potential (ATP) applicability test, specified in 326 IAC 2-2-2(d)(4), is used to determine if the project results in a Significant Emissions Increase.

(b) New Emissions Units Only
Pursuant to 326 IAC 2-2-1(t)(1), a new emissions unit is any emissions unit that is, or will be, newly constructed and that has existed for less than two (2) years from the date the emissions unit first operated.

(c) Baseline Actual Emissions
For a new emissions unit, the baseline actual emissions for purposes of determining the Emissions Increase that will result from the initial construction and operation of the unit shall equal zero (0) and thereafter, for all other purposes, shall equal the unit's potential to emit.

(d) Actual to Potential (ATP) Summary
The Emissions Increase of the project is the sum of the difference between the potential to emit (PTE) from **each new emissions** unit following completion of the project and the baseline actual emissions of these units before the project.

$ATP_{(new\ unit)} = PTE_{(new\ unit)} - \text{Baseline Emissions}_{(new\ unit)}$

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

Project 2024 Emissions Increase (tons/year) Crawfordsville warehouse Project								
Process/ Emissions Unit	**Unit ID**	**PM**	**PM_{10}**	**$PM_{2.5}$***	**SO_2**	**NO_X**	**VOC**	**CO**
Galv/ Anneal cooling tower	GANCT	1.64	0.82	0.003	-	-	-	-
Anneal cooling tower	ANCT	0.99	0.49	0.002	-	-	-	-
Emergency Generator	GEN #3a	0.14	0.16	0.16	0.004	4.41	1.05	2.41
Ladle Dryers	LDSN#1 LDSN#2	0.16	0.65	0.65	0.05	8.59	0.47	7.21
Lime Silos	SEAFN1 SEAFN2 NEAFN1 NEAFN2	6.01	6.01	6.01	-	-	-	-
Warehouse Heating	WHSHS	0.02	0.07	0.07	0.01	0.91	0.05	0.76
Project Emissions Increase		**8.96**	**8.20**	**6.89**	**0.06**	**13.90**	**1.58**	**10.39**
Significant Levels		25	15	10	40	40	40	100
*PM2.5 listed is direct PM2.5.								

The source opted to take limits in order to render the requirements of 326 IAC 2-2 not applicable to this modification (Project 2024).

See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC

2-2 (PSD) applicability determination for more information regarding the limits.

(e) Upstream/Downstream Increased Utilization
No existing emissions units are affected as part of this project; there will not be any increased utilization in upstream or downstream units.

(f) Conclusion
These modifications to an existing major PSD stationary source are not major because the Emissions Increase of each PSD regulated pollutant is less than the PSD significant level (i.e., the modification does not cause a Significant Emissions Increase). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply to these emission units.

PTE of the Entire Source After Issuance of the Part 70 Modification

The table below summarizes the after issuance source-wide potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of the Part 70 source and permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

	Source-Wide Emissions After Issuance (ton/year)								
	PM[1]	PM_{10}[1]	$PM_{2.5}$[1, 2]	SO_2	NO_X	VOC	CO	Single HAP[3]	Total HAPs
Total PTE of Entire Source Including Fugitives*	>100	>100	>100	>100	>100	>100	>100	>10	>25
Title V Major Source Thresholds	NA	100	100	100	100	100	100	10	25
PSD Major Source Thresholds	100	100	100	100	100	100	100	--	--

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."
[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.
[3]Single highest source-wide HAP
*Fugitive HAP emissions are always included in the source-wide emissions.

(a) This existing major PSD stationary source will continue to be major under 326 IAC 2-2 because at least one pollutant, PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, and CO, has emissions equal to or greater than the PSD major source threshold.

(b) This existing major source of HAP will continue to be a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions will continue to be equal to or greater than ten (10) tons per year for any single HAP and/or equal to or greater than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Federal Rule Applicability Determination

Due to the modification at this source, federal rule applicability has been reviewed as follows:

New Source Performance Standards (NSPS):

(a) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc and 326 IAC 12, are not included in the permit for two (2) natural gas-fired Ladle Dryers (LDSN#1 and LDSN#2) and eight (8) natural gas-fired heaters, because they do not meet the definition of steam generating units as defined in 40 CFR Part 60.41c.

40 CFR 60, Subpart IIII

(b) The diesel-fired emergency generator, identified as GEN#3a and GEN#4a, are subject to the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII and 326 IAC 12, because they were constructed after July 11, 2005, the applicability date. The generators subject to this rule includes the following:

- Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.
- Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

The emergency generators (GEN#3a and GEN#4a) are subject to the following portions of Subpart IIII.

(1) 40 CFR 60.4200 (a)(2)(i), (a)(4)
(2) 40 CFR 60.4205 (b)
(3) 40 CFR 60.4206
(4) 40 CFR 60.4207 (b)
(5) 40 CFR 60.4208 (a), (b), (h)
(6) 40 CFR 60.4209
(7) 40 CFR 60.4211 (a), (c), (f), (g)
(8) 40 CFR 60.4212
(9) 40 CFR 60.4214 (b), (c)
(10) 40 CFR 60.4218
(11) 40 CFR 60.4219
(12) Table 8 to Subpart IIII of Part 60

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the emergency generators (GEN#3a and GEN#4a) except as otherwise specified in 40 CFR 60, Subpart IIII.

(c) There are no other New Source Performance Standards (40 CFR Part 60) and 326 IAC 12 included in the permit for this proposed modification.

National Emission Standards for Hazardous Air Pollutants (NESHAP):

40 CFR 63, Subpart ZZZZ

(d) The diesel-fired emergency generator, identified as GEN#3a and GEN#4a are subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ, which is incorporated by reference as 326 IAC 20-82, because these generators are new stationary RICE which commenced construction after December 19, 2002, located at a major source of HAPs. The units subject to this rule include the following:

- Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.
- Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

The emergency generators (GEN#3a and GEN#4a) are subject to the following portions of Subpart ZZZZ.

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585 (a), (b)
(3) 40 CFR 63.6590 (a)(2)(i), (b)(3)(iii)
(4) 40 CFR 63.6595 (a), (c)
(5) 40 CFR 63.6602
(6) 40 CFR 63.6605
(7) 40 CFR 63.6640 (b), (e), (f)(1), (f)(2)(i), (f)(3)
(8) 40 CFR 63.6645 (f)
(9) 40 CFR 63.6660
(10) 40 CFR 63.6665
(11) 40 CFR 63.6670
(12) 40 CFR 63.6675
(13) Table 2c, item (1)
(14) Table 8 to Subpart ZZZZ of Part 63

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the emergency generator (GEN#3a and GEN#4a) except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

40 CFR 63, Subpart DDDDD

(e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD and 326 IAC 20-95 are not included in the permit for the eight (8) direct-fired space heaters and two dryers (LDSN#1 and LDSN#2), since they do not qualify for the definition of process heaters as defined in 40 CFR 63.7575, therefore are exempt from this requirement.

(f) There are no other National Emission Standards for Hazardous Air Pollutants under 40 CFR 63, 326 IAC 14 and 326 IAC 20 included for this proposed modification.

Compliance Assurance Monitoring (CAM):

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the regulated pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant (or a surrogate thereof); and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

(b) Pursuant to 40 CFR 64.2(b)(1)(i), emission limitations or standards proposed after November 15, 1990, pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act are exempt from the requirements of CAM. Therefore, an evaluation was not conducted for any emission limitations or standards proposed after November 15, 1990, pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act.

The following table is used to identify the applicability of CAM to new and modified emission unit and each emission limitation or standard for a specified pollutant based on the criteria specified under 40 CFR 64.2:

Emission Unit/Pollutant	Control Device	Applicable Emission Limitation	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
Lime/Dolo Silos SEAFN1, SEAFN2, NEAFN1, NEAFN2						
PM	Bin vent filter	326 IAC 2-2	<100 (each)	<100 (each)	N [1]	N
PM_{10}		326 IAC 2-2	<100 (each)	<100 (each)	N	N
$PM_{2.5}$		326 IAC 2-2	<100 (each)	<100 (each)	N	N

Under the Part 70 Permit program (40 CFR 70), PM is not a regulated air pollutant.
Uncontrolled PTE (tpy) and controlled PTE (tpy) are evaluated against the Major Source Threshold for each pollutant. Major Source Threshold for regulated air pollutants (PM10, PM2.5, SO2, NOx, VOC and CO) is 100 tpy, for a single HAP ten (10) tpy, and for total HAPs twenty-five (25) tpy.

PM* For limitations under 326 IAC 6-3-2, 326 IAC 6.5, and 326 IAC 6.8, IDEM OAQ uses PM as a surrogate for the regulated air pollutant PM10. Therefore, uncontrolled PTE and controlled PTE reflect the emissions of the regulated air pollutant PM10.

N [1] Under 326 IAC 2-2, PM is not a surrogate for a regulated air pollutant. Therefore, CAM does not apply to these emission units for the 326 IAC 2-2 PM limitation.

N CAM does not apply for PM_{10} and $PM_{2.5}$ because the uncontrolled PTE of pollutant is less than the major source threshold.

Emission units without air pollution controls are not subject to CAM. Therefore, they are not listed.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM, are not applicable to Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) as part of this modification.

State Rule Applicability - Entire Source

Due to this modification, state rule applicability has been reviewed as follows:

326 IAC 2-2 (PSD)
PSD and Emission Offset applicability is discussed under the Permit Level Determination - PSD Emissions Increase of this document.

PSD Minor Source Limits

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2024 Modification permitted under SSM No. 107-47617-00038, the Permittee shall comply with the following:

(a) The PM emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

(b) The PM_{10} emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

(c) The $PM_{2.5}$ emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

Compliance with these limits, shall limit the potential to emit of PM, PM_{10} and $PM_{2.5}$ to less than 25, 15 and 10 tons per twelve (12) consecutive month period, respectively, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2024 Modification permitted under SSM No. 107-47617-00038.

There are no other changes in State Rule Applicability - Entire Source included for this proposed 2024 modification under SSM No. 107-47617-00038.

State Rule Applicability – Individual Facilities

Due to this modification, state rule applicability has been reviewed as follows:

Space Heater and Dryers:
(D.29 – Insignificant Activities and permit section D.29) (Eight (8) Heaters, LDSN#1 and LDSN#2)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight rate, eight (8) direct-fired space heaters and two dryers (LDSN#1 and LDSN#2) do not meet the definition of a "manufacturing process", as defined in 326 IAC 6-3-1.5(2). Therefore, each of these units is exempt from 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

326 IAC 6-2-1 (Particulate Emission Limitations for Sources of Indirect Heating)
Pursuant to 326 IAC 6-2-1(a), eight (8) natural gas-fired space heaters and two dryers (LDSN#1 and LDSN#2) are not subject to the provisions of 326 IAC 6-2, since they are not source of indirect heating.

326 IAC 7-1.1 Sulfur Dioxide Emission Limitations
The eight (8) natural gas-fired space heaters and two dryers (LDSN#1 and LDSN#2) are not subject to 326 IAC 326 IAC 7-1.1 because each has a potential to emit (or limited potential to emit) sulfur dioxide (SO2) of less than 25 tons per year or 10 pounds per hour.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, these eight (8) natural gas-fired space heaters and two dryers (LDSN#1 and LDSN#2) were constructed after January 1, 1980, they are not subject to the requirements of 326 IAC 8-1-6 because their unlimited VOC potential emissions are less than twenty-five (25) tons per year, each.

Emergency Generators:
(permit section D.13) (GEN #3a and GEN #4a)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 1-2-59**,** The emergency generators (GEN #3a and GEN #4a), burn only liquid or gaseous fuel and they are not used as a part of the manufacturing operations. Therefore, these emergency generators are not subject to the requirements of 326 IAC 6-3.

326 IAC 7-1.1 Sulfur Dioxide Emission Limitations
The emergency generators (GEN #3a and GEN #4a) are not subject to 326 IAC 326 IAC 7-1.1 because each has a potential to emit sulfur dioxide (SO2) of less than 25 tons per year or 10 pounds per hour.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, these emergency generators (GEN #3a and GEN #4a) were constructed after January 1, 1980, they are not subject to the requirements of 326 IAC 8-1-6 because their unlimited VOC potential emissions are less than twenty-five (25) tons per year, each.

Cooling Towers:
(permit section D.11) (GANCT and ANCT)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(11), the two (2) noncontact cooling towers (GANCT and ANCT) are not subject to the requirements of 326 IAC 6-3-2, because noncontact cooling towers are exempt from this rule. Also the potential to emit particulate matter (PM) from each cooling towers is less than five hundred fifty-one thousandths (0.551) pound per hour.

Lime/Dolo Silos:
(permit section D.5 – Insignificant Activities) (SEAFN1, SEAFN2, NEAFN1and NEAFN2)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
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

Compliance Determination and Monitoring Requirements

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

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source’s failure to take the appropriate corrective actions within a specific time period.

There are no new or modified compliance requirements included with this modification.

(b) The Compliance Monitoring Requirements applicable to this proposed modification are as follows:

Control Device / Emission Unit	Type of Monitoring	Frequency	Range or Specification
Bin vent filters / Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1 and NEAFN2)	Visible emission notations	Daily	Verify whether emissions are normal or abnormal

These monitoring conditions are necessary because the Bin vent filters for the Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1 and NEAFN2) must operate properly to assure compliance with 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 6-3 (Particulate Emissions Limitations for Manufacturing Processes).

Proposed Changes

As part of this permit approval, the permit may contain new or different permit conditions and some conditions from previously issued permits/approvals may have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes.

The following changes listed below are due to the proposed modification. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text (these changes may include Title I changes):

Change 1: IDEM, OAQ has added the new emission units in Section A and in the relevant Section D and E. OAQ also removed the emergency generator GEN #4 from the permit.

Change 2: IDEM, OAQ has added PSD Minor limits for four (4) Lime/Dolo Silos in Section D.5 "INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS".

Change 3: The Part 70 Permit Annual Certification Form has been revised to include space for an email address.

Therefore the permit was updated as follows:

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

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

*****

D.11 – COOLING TOWERS

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

*****

(4) One cooling tower (non-contact) identified as GANCT, approved in 2024 for construction for the Galvanizing/Annealing operations with an average capacity of 5,000 gallons/min.

(5) One cooling tower (non-contact), identified as ANCT, approved in 2024 for construction for the Annealing operations with an average capacity of 3,000 gallons/min.

*****

D.13 – EMERGENCY GENERATORS

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

*****

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

Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

~~Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.~~

*****

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

*****

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

*****

(f) 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:

*****

(12) Two (2) natural gas-fired Ladle Dryers, identified as LDSN#1 and LDSN#2, approved in 2024 for construction, with a heat input capacity of 10 MMBtu per hour, with uncontrolled emissions exhausting the Meltshop baghouses.

*****

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:

*****

(14) Four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2, approved in 2024 for construction, each equipped with bin vent filters (passive system).

*****

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description: INSIGNIFICANT ACTIVITIES – MISCELLANEOUS SILOS (a) Raw materials handling/storage, including silos which contain the following materials: ***** **(14) Four (4) Lime/Dolo Silos, identified as SEAFN1, SEAFN2, NEAFN1 and NEAFN2, approved in 2024 for construction, each equipped with bin vent filters (passive system).** (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.5.1 Prevention of Significant Deterioration (PSD) Minor Limits for PM, PM_{10} and $PM_{2.5}$ Emissions [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 requirements:

(a) The PM emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

(b) The PM_{10} emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

(c) The $PM_{2.5}$ emissions from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) shall not exceed 0.34 pound per hour each.

Compliance with these limits, shall limit the potential to emit of PM, PM_{10} and $PM_{2.5}$ to less than 25, 15 and 10 tons per twelve (12) consecutive month period, respectively, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2024 Modification permitted under SSM No. 107-47617-00038.

D.5.~~1~~**2** Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

*****

D.5.~~2~~**3** Preventive Maintenance Plan [326 IAC 2-7-5(12)]

*****

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

D.5.4 Particulate Control

In order to assure compliance with Conditions D.5.1 and D.5.2, bin vent filters for particulate control shall be in operation and control emissions from the four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) at all times the four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) are in operation.

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

D.5.5 Visible Emissions Notations

(a) Visible emission notations from the four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) exhausts 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 a 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.

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

D.5.6 Record Keeping Requirement

(a) **To document the compliance status with Condition D.5.5, the Permittee shall maintain a daily record of visible emission notations of the bin vent filters from four (4) Lime/Dolo Silos (SEAFN1, SEAFN2, NEAFN1, NEAFN2) exhausts. 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).**

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

SECTION D.13 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

EMERGENCY GENERATORS

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

*****

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

~~Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.~~
Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

*****

(11) **Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).**

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

(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.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, the Permittee shall comply with the following BACT requirements for GEN #1 through GEN #3 ~~GEN #4~~:

*****

*****

SECTION E.4 NESHAP

Emission Unit Description:

D.13 – EMERGENCY GENERATORS

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

*****

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

~~Under 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected source.~~
Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

*****

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

*****

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements
[326 IAC 2-7-5(1)]

*****

E.4.2 Stationary Reciprocating Internal Combustion Engine NESHAP [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ, (included as Attachment E to the operating permit), which are incorporated by reference as 326 IAC 20-82, for the **emergency generators as follows** ~~emission unit(s) listed above~~:

GEN #1 through #3, GEN #5 through #8, CC-GEN1 and CC-GEN2

*****

GEN #4a and GEN #3a

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585 (a), (b)
(3) 40 CFR 63.6590 (a)(2)(i), (b)(3)(iii)
(4) 40 CFR 63.6595 (a), (c)
(5) 40 CFR 63.6602
(6) 40 CFR 63.6605

(7) 40 CFR 63.6640 (b), (e), (f)(1), (f)(2)(i), (f)(3)
(8) 40 CFR 63.6645 (f)
(9) 40 CFR 63.6660
(10) 40 CFR 63.6665
(11) 40 CFR 63.6670
(12) 40 CFR 63.6675
(13) Table 2c, item (1)
(14) Table 8 to Subpart ZZZZ of Part 63

*****

SECTION E.6 NSPS

Emissions Unit Description:

D.13 – EMERGENCY GENERATORS

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

(3) **Galv Line Pot emergency generator, identified as GEN #4a, installed in 2022, with a capacity of 1,341 HP, with emissions uncontrolled.**

Under 40 CFR Part 60 Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, this unit is considered an existing affected facility/source.

*****

(11) Cold Mill Cooling tower emergency generator, identified as GEN #3a, approved in 2024 for construction, with a capacity of 1,250 kW. (1,676 HP).

Under 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, this unit is considered an affected facility/source.

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

*****

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

*****

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:	
Email Address:	Phone:

Date:

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on March 7, 2024. Additional information was received on April 3, 2024.

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No.107-47617-00038. The operation of this proposed modification shall be subject to the conditions of the attached proposed Significant Permit Modification No. 107-47704-00038.

The staff recommends to the Commissioner that the Part 70 Significant Source Modification and Significant Permit Modification be approved.

IDEM Contact

(a) If you have any questions regarding this permit, please contact Aasim Noveer, 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) 234-1243 or (800) 451-6027, and ask for Aasim Noveer or (317) 234-1243.

(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 Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/public-participation/; and the Citizens' Guide to IDEM on the Internet at: https://www.in.gov/idem/resources/citizens-guide-to-idem/.

Appendix A: Emission Calculations
PTE Summary

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Uncontrolled Potential to Emit (tons/yr)													
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**Lead**	**Mercury**	**Beryllium**	**Fluorides**	**H2SO4**	**Other Total HAPs**
D.2 - Castrip -Low NOx Boiler	0.58	2.32	2.32	0.18	30.51	1.68	25.62	1.53E-04	-	-	-	-	0.58
D.5 - Injection Carbon Silo #1	0.45	0.45	0.45	-	-	-	-	-	-	-	-	-	-
D.5 - Lime Silo (5) and carbon silos (3)	480.55	480.55	480.55	-	-	-	-	-	-	-	-	-	-
D.5 - Lime Silo (4)	120.14	120.14	120.14	-	-	-	-	-	-	-	-	-	-
D.7 - Coil Cutting	20.27	20.27	20.27	0.03	4.82	0.26	4.05	2.41E-05	-	-	-	-	0.09
D.7 - EU-10	275.16	104.03	21.33	-	-	-	-	-	-	-	-	-	-
D.7 - EU-10 other	132.35	46.15	3.17	-	-	-	-	-	-	-	-	-	-
D.7 - Blend Plant	198.07	79.13	12.05	-	-	-	-	-	-	-	-	-	-
D.7 - Permanent Screening Plant	11.97	4.41	0.74	-	-	-	-	-	-	-	-	-	-
D.8 - Linde Gases Boilers	0.26	1.04	1.04	0.08	13.73	0.76	11.54	6.87E-05	-	-	-	-	0.26
D.11 - Cooling Towers	39.51	38.69	37.87	-	-	-	-	-	-	-	-	-	-
D.11 - Cooling Towers	2.63	1.32	0.01	-	-	-	-	-	-	-	-	-	-
D.13 - Emergency Generators	1.14	0.79	0.79	0.73	33.25	1.21	8.14	-	-	-	-	-	0.02
D.13 - Emergency Generators	0.17	0.19	0.19	0.14	8.82	1.08	2.59	-	-	-	-	-	0.008
D.15 - Pickle Line 1 & 2	157.68	157.68	157.68	-	-	-	-	-	-	-	-	-	0.005
D.16 - Cold Reversing Mill	630.72	630.72	630.72	-	-	65.70	-	-	-	-	-	-	NA
D.16 - Cold Mill Boiler	0.28	1.11	1.11	0.09	14.60	0.80	12.26	7.30E-05	-	-	-	-	0.28
D.17 - Cold Mill - Reversing /Temper Mill	630.72	630.72	630.72	-	-	65.70	-	-	-	-	-	-	NA
D.19 - Annealing Furnace	0.74	2.98	2.98	0.23	39.16	2.15	32.90	1.96E-04	-	-	-	-	0.74
D.21 Acid Regen System	8.76	8.76	8.76	0.01	2.40	0.13	2.02	1.20E-05	-	-	-	-	0.05
D.22 (36) Preheat Burners and (3) Auxiliary Burners	0.44	1.77	1.77	0.14	11.89	1.28	19.59	1.17E-04	-	-	-	-	0.44
D.22 (44) Radiant Burners	0.12	0.46	0.46	0.04	6.22	0.34	5.13	3.05E-05	-	-	-	-	0.12
D.22 - Other Burners	0.05	0.21	0.21	0.02	2.76	0.15	2.32	1.38E-05	-	-	-	-	0.05
D.22 Chem Coater	-	-	-	-	-	57.12	-	-	-	-	-	-	29.57
D.25 - Hot Strip Mill	-	-	-	-	-	131.93	-	-	-	-	-	-	NA
D.25 - Tunnel and Shuttle Furnaces	1.63	6.53	6.53	0.52	85.88	4.72	72.14	4.29E-04	-	-	-	-	1.62
D.28 - MT #1	16.75	16.75	16.75	-	-	-	-	-	-	-	-	-	-
D.29 - Meltshop Operations	98,569.85	284,758.58	284,758.58	725.94	827.88	201.10	4,446.50	750.86	250.29	6.26	21.99	-	1.10
D.29 - Ladle Dryers	0.16	0.65	0.65	0.05	8.59	0.47	7.21	4.29E-05	-	-	-	-	0.16
D.30 Tundish Processing Operation	0.09	0.04	8.27E-03	-	-	-	-	-	-	-	-	-	-
D.31 - Steel Technologies Operations - Process Emissions	0.04	0.04	0.04	-	-	-	-	-	-	-	-	-	-
D.31 - Steel Technologies Operations - Combustion Emissions	0.20	0.80	0.80	0.06	10.55	0.58	8.87	5.28E-05	-	-	-	-	0.20
D.32 - DRI Handling System	34.86	15.81	5.25	-	-	-	-	-	-	-	-	-	-
D.38 Galvanizing Process FGT&S	875.50	875.50	875.50	-	-	-	-	-	-	-	-	-	875.50
D.38 Shot blasting SBT&S	422.36	422.36	422.36	-	-	-	-	-	-	-	-	-	-
D.38 Pickling CDPT&S	-	-	-	-	-	-	-	-	-	-	-	175.10	-
D.38 Coating Booth Operation CBT&S	76.48	76.48	76.48	-	-	7.74	-	-	-	-	-	-	41.73
D.38 Furnace NGGFT&S and Dryer NGDGT&S Combustion	0.16	0.65	0.65	0.05	8.59	0.47	7.21	-	-	-	-	-	0.16
D.38 Boiler NGBT&S	0.12	0.49	0.49	0.04	6.44	0.35	5.41	-	-	-	-	-	0.12
D.38 Heater NGHT&S and Space Heaters	0.45	1.79	1.79	0.14	23.57	1.30	19.80	-	-	-	-	-	0.44
D.38 Cooling Tower CTT&S	0.25	0.25	0.25	-	-	0.00	-	-	-	-	-	-	-
D.38 Welding WT&S	1.27	1.27	1.27	-	-	-	-	-	-	-	-	-	1.97
D.38 Plasma Cutting PCT&S	0.39	0.39	0.39	-	-	-	-	-	-	-	-	-	-
Emergency Generator EGET&S	9.70E-05	0.01	0.01	0.00	0.74	0.15	1.48	-	-	-	-	-	0.09
Paved Roads Coils to Towers	33.47	6.69	1.64	-	-	-	-	-	-	-	-	-	-
Paved Roads Towers	48.25	9.65	2.37	-	-	-	-	-	-	-	-	-	-
Unpaved Roads	596.61	158.99	15.90	-	-	-	-	-	-	-	-	-	-
Paved Roads	1.46	0.29	0.07	-	-	-	-	-	-	-	-	-	-
Insignificant Activities													
D.8-Drying bed regeneration	0.02	0.08	0.08	0.01	1.12	0.06	0.94	5.58E-06	-	-	-	-	0.02
Warehouse Heating Insignificant Activities - Facility Wide	0.02	0.07	0.07	0.01	0.91	0.05	0.76	4.53E-06	-	-	-	-	0.02
Total	**103,393.15**	**288,688.01**	**288,323.22**	**728.50**	**1,141.53**	**547.24**	**4,695.71**	**750.86**	**250.29**	**6.26**	**21.99**		**955.34**

** PM2.5 listed is direct PM2.5*
***PTE is based on T107-30293-00038 calculation summary page.*
NA - Not Available
The above table does not reflect the total source wide emissions.

Appendix A: Emission Calculations
PTE Summary

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

	Potential to Emit after Issuance (tons/yr)												
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**Lead**	**Mercury**	**Beryllium**	**Fluorides**	**H2SO4**	**Other Total HAPs**
D.2 - Castrip -Low NOx Boiler	2.36	2.36	2.32	0.19	10.89	0.81	18.98	1.53E-04	-	-	-	-	0.58
D.5 - Injection Carbon Silo #1	0.45	0.45	0.45	-	-	-	-	-	-	-	-	-	-
D.5 - Lime Silo (5) and carbon silos (3)	480.55	480.55	480.55	-	-	-	-	-	-	-	-	-	-
D.5 - Lime Silo (4)	6.01	6.01	6.01	-	-	-	-	-	-	-	-	-	-
D.7 - Coil Cutting	2.01	2.01	2.01	0.03	4.82	0.26	4.05	2.41E-05	-	-	-	-	0.09
D.7 - EU-10	4.55	1.76	0.41	-	-	-	-	-	-	-	-	-	-
D.7 - EU-10 other	3.97	1.38	0.10	-	-	-	-	-	-	-	-	-	-
D.7 - Blend Plant	10.87	3.59	0.46	-	-	-	-	-	-	-	-	-	-
D.7 - Blend Plant - 15 Storage Piles	0.68	0.34	0.05	-	-	-	-	-	-	-	-	-	-
D.7 - Permanent Screening Plant	0.36	0.13	0.02	-	-	-	-	-	-	-	-	-	-
D.8 - Linde Gases Boilers	0.26	1.04	1.04	0.08	13.73	0.76	11.54	6.87E-05	-	-	-	-	0.26
D.11 - Cooling Towers	39.51	38.69	37.87	-	-	-	-	-	-	-	-	-	-
D.11 - Cooling Towers	2.63	1.32	0.01	-	-	-	-	-	-	-	-	-	-
D.13 - Emergency Generators	1.14	0.79	0.79	0.73	33.25	1.21	8.14	-	-	-	-	-	0.02
D.13 - Emergency Generators	0.17	0.19	0.19	0.14	8.82	1.08	2.59	-	-	-	-	-	0.008
D.15 - Pickle Line 1 & 2	7.88	7.88	7.88	-	-	-	-	-	-	-	-	-	NA
D.16 - Cold Reversing Mill	31.54	31.54	31.54	-	-	65.70	-	-	-	-	-	-	-
D.16 - Cold Mill Boiler	0.44	0.44	1.11	0.09	29.20	0.41	5.11	7.30E-05	-	-	-	-	0.28
D.17 - Cold Mill - Reversing /Temper Mill	31.54	31.54	31.54	-	-	65.70	-	-	-	-	-	-	-
D.19 - Annealing Furnace	0.74	2.98	2.98	0.23	42.22	2.15	33.52	1.96E-04	-	-	-	-	0.74
D.21 Acid Regen System	8.76	8.76	8.76	0.01	2.45	1.35	2.06	1.20E-05	-	-	-	-	0.05
D.22 (36) Preheat Burners and (3) Auxiliary Burners	1.77	1.77	1.77	0.14	12.70	1.28	19.59	1.17E-04	-	-	-	-	0.44
D.22 (44) Radiant Burners	0.46	0.46	0.46	0.04	12.26	0.34	5.13	3.05E-05	-	-	-	-	0.12
D.22 - Other Burners	0.05	0.21	0.21	0.02	2.76	0.15	2.32	1.38E-05	-	-	-	-	0.05
D.22 Chem Coater	-	-	-	-	-	39.90	-	-	-	-	-	-	29.57
D.25 - Hot Strip Mill	-	-	-	-	-	131.93	-	-	-	-	-	-	NA
D.25 - Tunnel and Shuttle Furnaces	1.63	6.53	6.53	0.52	85.88	4.72	72.14	4.29E-04	-	-	-	-	1.62
D.28 - MT #1	16.75	16.75	16.75	-	-	-	-	-	-	-	-	-	-
D.29 - Meltshop Operations	139.20	403.48	403.48	725.97	833.03	201.38	4,450.83	1.05	0.35	0.01	21.99	0.00	1.20
D.29 - Ladle Dryers	0.16	0.65	0.65	0.05	8.59	0.47	7.21	4.29E-05	-	-	-	-	0.16
D.30 Tundish Processing Operation	0.09	0.04	0.01	-	-	-	-	-	-	-	-	-	-
D.31 - Steel Technologies Operations - Process Emissions	0.04	0.04	0.04	-	-	-	-	-	-	-	-		-
D.31 - Steel Technologies Operations - Combustion Emissions	0.20	0.80	0.80	0.06	10.55	0.58	8.87	5.28E-05	-	-	-		0.20
D.32 - DRI Handling System	13.54	6.04	5.25	-	-	-	-	-	-	-	-		-
D.38 Galvanizing Process FGT&S	3.50	3.50	3.50	-	-	-	-	-	-	-	-	-	3.50
D.38 Shot blasting SBT&S	1.45	1.45	1.45	-	-	-	-	-	-	-	-	-	-
D.38 Pickling CDPT&S	-	-	-	-	-	-	-	-	-	-	-	5.20	-
D.38 Coating Booth Operation CBT&S	0.76	0.76	0.76	-	-	7.74	-	-	-	-	-	-	2.00
D.38 Furnace NGGFT&S and Dryer NGDGT&S Combustion	0.16	0.65	0.39	0.05	8.59	0.47	7.21	-	-	-	-	-	0.16
D.38 Boiler NGBT&S	0.12	0.49	0.49	0.04	6.44	0.35	5.41	-	-	-	-	-	0.12
D.38 Heater NGHT&S and Space Heaters	0.45	1.79	0.82	0.14	10.76	1.30	19.80	-	-	-	-	-	
D.38 Cooling Tower CTT&S	0.25	0.25	0.25	-	-	0.00	-	-	-	-	-	-	-
D.38 Welding WT&S	1.27	1.27	1.27	-	-	-	-	-	-	-	-	-	1.97
D.38 Plasma Cutting PCT&S	0.39	0.39	0.39	-	-	-	-	-	-	-	-	-	-
Emergency Generator EGET&S	0.00	0.01	0.01	0.00	0.74	0.15	1.48	-	-	-	-	-	0.09
Paved Roads Coils to Towers	1.67	0.33	0.08	-	-	-	-	-	-	-	-	-	-
Paved Roads Towers	2.41	0.48	0.12	-	-	-	-	-	-	-	-	-	-
Unpaved Roads	25.22	6.72	0.67	-	-	-	-	-	-	-	-		-
Paved Roads	0.13	0.03	0.01	-	-	-	-	-	-	-	-		-
Insignificant Activities													
D.8-Drying bed regeneration	0.02	0.08	0.08	0.01	1.12	0.06	0.94	5.58E-06	-	-	-		0.02
Warehouse Heating Insignificant Activities - Facility Wide	0.02	0.07	0.07	0.01	0.91	0.05	0.76	4.53E-06	-	-	-	-	0.02
Total	**848.15**	**1,078.75**	**1,062.34**	**728.54**	**1,138.81**	**530.26**	**4,686.91**	**1.05**	**0.35**	**0.01**	**21.99**		**>25**

** PM2.5 listed is direct PM2.5*
Note: The shaded cells indicate where limits are included.
All limits are based on the Permit limits. Please see the permit for more detail.
NA - Not Available
The above table does not reflect the total source wide emissions.

Appendix A: Emission Calculations
Nucor Crawfordsville warehouse Project
PTE Modification Summary

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Uncontrolled Potential to Emit

Facility/ Emission Unit	Unit ID	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Single HAP	Total HAP	Pb	GHG (as CO2e)	
Galv/ Anneal cooling tower (D.11)	GANCT	1.64	0.82	0.003	-	-	-	-	-	-	-	-	
Anneal cooling tower (D.11)	ANCT	0.99	0.49	0.002	-	-	-	-	-	-	-	-	
Emergency Generator (D.13)	GEN #3a	0.14	0.16	0.16	0.004	4.41	1.05	2.41	2.28E-03	4.62E-03	-	406	Benzene
Ladle Dryers (D.29)	LDSN#1 LDSN#2	0.16	0.65	0.65	0.05	8.59	0.47	7.21	1.55E-01	0.16	4.29E-05	10,258	Hexane
Lime Silos (D.5 – Insignificant Activities)	SEAFN1 SEAFN2 NEAFN1 NEAFN2	120.14	120.14	120.14	-	-	-	-	-	-	-	-	
Warehouse Heating Insignificant Activities - Facility Wide)	WHSHS	0.02	0.07	0.07	0.01	0.91	0.05	0.76	0.02	0.02	4.53E-06	1,083	Hexane
Total		**123.09**	**122.33**	**121.02**	**0.06**	**13.90**	**1.58**	**10.39**	**0.17**	**0.18**	**4.75E-05**	**11747**	
Emergency Generator (D.13)	GEN #4a	0.03	0.03	0.03	0.14	4.41	0.02	0.18	1.82E-03	3.69E-03	0.00E+00	390	Benzene
Total for 47617		**123.12**	**122.36**	**121.05**	**0.20**	**18.32**	**1.60**	**10.56**	**0.18**	**0.19**	**4.75E-05**	**12138**	

Hexane is the higest single HAP 0.2 tons/year

Limited Potential to Emit

Facility/ Emission Unit	Unit ID	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Single HAP	Total HAP	Pb	GHG (as CO2e)
Galv/ Anneal cooling tower (D.11)	GANCT	1.64	0.82	0.003	-	-	-	-	-	-	-	-
Anneal cooling tower (D.11)	ANCT	0.99	0.49	0.002	-	-	-	-	-	-	-	-
Emergency Generator (D.13)	GEN #3a	0.14	0.16	0.16	0.00	4.41	1.05	2.41	2.28E-03	4.62E-03	-	406
Ladle Dryers (D.29)	LDSN#1 LDSN#2	0.16	0.65	0.65	0.05	8.59	0.47	7.21	1.55E-01	0.16	4.29E-05	10258
Lime Silos (D.5 – Insignificant Activities)	SEAFN1 SEAFN2 NEAFN1 NEAFN2	6.01	6.01	6.01	-	-	-	-	-	-	-	-
Warehouse Heating Insignificant Activities - Facility Wide)	WHSHS	0.02	0.07	0.07	0.01	0.91	0.05	0.76	0.02	0.02	4.5346E-06	1083
Total		**8.96**	**8.20**	**6.89**	**0.06**	**13.90**	**1.58**	**10.39**	**0.17**	**0.18**	**4.75E-05**	**11747**
Emergency Generator (D.13)	GEN #4a	0.03	0.03	0.03	0.14	4.41	0.02	0.18	1.82E-03	3.69E-03	0.00E+00	390
Total for 47617		**8.99**	**8.23**	**6.92**	**0.20**	**18.32**	**1.60**	**10.56**	**0.18**	**0.19**	**4.75E-05**	**12138**

Appendix A: Emission Calculations
Nucor Crawfordsville warehouse Project
Galvanizing/Annealing Non Contact Cooling Tower - GANCT

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emission Unit: Galvanizing/Annealing Non Contact Cooling Tower (replacement)
2-cells (GANCT)
CT rated at 4600 gpm

Parameters:

Circulation water flow rate	5,000	gal/min	Design information
TDS circulating water	3,000	ppmw	Design information
Total drift loss	0.005%		
Operating time	8,760	hour/year	
Particle size multiplier*			
PM	1		
PM10	50%		
PM2.5	0.20%		

*PM10 and PM2.5 ratio from Joel Reisman and Gordon Frisbie 2002 Publication

Potential to Emit:

Pollutant	Short Term (lb/hour)	Annual (tons/ year)
PM	0.38	1.64
PM10	0.19	0.82
PM2.5	0.001	0.003

Appendix A: Emission Calculations
Nucor Crawfordsville warehouse Project
Annealing Non Contact Cooling Tower-ANCT

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Emission Unit:	Annealing Non Contact Cooling Tower		
	2-cells (ANCT)		
	CT rated at	2400	gpm

Parameters:

Circulation water flow rate	3,000	gal/min	Design information
TDS circulating water	3,000	ppmw	Design information
Total drift loss	0.005%		
Operating time	8,760	hour/year	
Particle size multiplier*			
PM	1		
PM10	50%		
PM2.5	0.20%		

*PM10 and PM2.5 ratio from Joel Reisman and Gordon Frisbie 2002 Publication

Potential to Emit:

Pollutant	Short Term (lb/hour)	Annual (tons/ year)
PM	0.23	0.99
PM10	0.11	0.49
PM2.5	0.0005	0.002

Appendix A: Emission Calculations
Nucor Crawfordsville warehouse Project

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Cold Mill Cooling Systems Emergency Generator

Emission Unit: Cold Mill Cooling System Emergency Generator Engine Diesel 1,000 ekW or 1,250 kVA unit and bin vent filters (GEN#3a)

Parameters:

Expected operation	500	hours/year	
Power Output	1,676	bhp	Standby rating
	1,250	kW	Spec sheet
Potential Throughput	838,125	hp-hr/yr	
Fuel Use Rate	72	gal/hour	Spec sheet
Diesel heating value	138000	Btu/gallon	40 CFR Part 98 Table C-1
Heat Input Rate	9.94	MMBtu/hour	

Engine uncontrolled emission factors

PM	0.20	g/kW-hr	Filterable only from NSPS IIII and 40 CFR 1039 App I Tier 2
PM10	0.23	g/kW-hr	Filterable from PM and Condensable from AP-42
PM2.5	0.23	g/kW-hr	Same as PM10
NOx	6.4	g/kW-hr	NSPS Subpart IIII and 40 CFR 40 CFR 1039 App I Tier 2
SO2	0.006	g/kW-hr	Assuming 15 ppm sulfur fuel (7.1 lb/gal)
CO	3.5	g/kW-hr	NSPS Subpart IIII and 40 CFR 40 CFR 1039 App I Tier 2
VOC	0.0025	lb/hp-hr	AP-42 Table 3.3-1
GHG (as CO2e)	163.61	lb/MMBtu	40 CFR Part 98 Table A-1 and C-1 and C-2
PM condensable	0.0077	lb/MMBtu	AP-42 Table 3.4-2

Potential to Emit:

Pollutant	Short Term (lb/hour)	Annual (tons/year)
PM	0.55	0.14
PM10	0.63	0.16
PM2.5	0.63	0.16
NOx	17.64	4.41
SO2	0.02	0.004
CO	9.65	2.41
VOC	4.21	1.05
GHG (as CO2e)	1,626	406

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs*
Emission Factor in lb/hp-hr**	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	2.28E-03	8.24E-04	5.66E-04	2.31E-04	7.39E-05	2.31E-05	6.22E-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 Tables 3.3-1 and 3.4-1).

Potential Emission of Total HAPs (tons/yr)	**4.62E-03**

Appendix A: Emission Calculations
Nucor Crawfordsville warehouse Project

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emission Unit: Ladle dryers (2 units) (LDSN#1 and LDSN#2)

Heat input for each dryer	10	MMBtu/hour
Number of dryer(s)	2	
Hours of operation	8,760	hour/year
NG heating value	1020	MMBtu/MMscf
Annual fuel use	172	MMscf/year

Emission Factors	Value	Units	Basis
PM	1.9	lb/MMscf	of NG (AP-42, Table 1.4-2)
PM10	7.6	lb/MMscf	of NG (AP-42, Table 1.4-2)
PM2.5	7.6	lb/MMscf	of NG (AP-42, Table 1.4-2)
NOx	100.0	lb/MMscf	of NG (AP-42, Table 1.4-1)
SO2	0.6	lb/MMscf	of NG (AP-42, Table 1.4-2)
CO	84	lb/MMscf	of NG (AP-42, Table 1.4-1)
VOC	5.5	lb/MMscf	of NG (AP-42, Table 1.4-2)
Pb	0.0005	lb/MMscf	of NG (AP-42, Table 1.4-2)
GHG (as CO2e)	119,439	lb/MMscf	of NG (40 CFR 98 Subparts A and C)

	Emissions	
Potential to Emit	(lb/hr)	(TPY)
PM	0.04	0.16
PM10	0.1	0.65
PM2.5	0.1	0.65
NOx	2.0	8.59
SO2	0.0	0.05
CO	1.6	7.21
VOC	0.1	0.47
Pb	9.80E-06	4.29E-05
GHG (as CO2e)	2,342	10,258

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.8E-04	1.0E-04	6.4E-03	1.5E-01	2.9E-04	**0.16**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
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	4.3E-05	9.4E-05	1.2E-04	3.3E-05	1.8E-04	**4.7E-04**
					Total HAPs	**0.16**
					Worst HAP	**0.15**

Methodology is the same as above.
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: Emission Calculations
Nucor Crawfordsville warehouse Project

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emission Unit: Lime/Dolo Silos (4 units) with pneumatic loading systems and bin vent filters (SEAFN1, SEAFN2, NEAFN1, NEAFN2)

Number of silos/bin vents	4		
Hours of operation	8,760	hour/year	
Outlet PM grain loading rate	0.005	gr/dscf	Conservative worst case outlet loading
Exhaust flow per silo/bin vent	1,600	scfm	Conservative worst case truck onloading flow

Total for all (4) lime silos	Controlled Emissions		Control Efficiency	Uncontrolled Emissions		Limiteded Emissions		
Potential to Emit	(lb/hr)	(TPY)		(lb/hr)	(TPY)	Control Efficiency	(lb/hr)	(TPY)
PM	0.27	1.20	99%	27.43	120.14	95%	1.37	6.01
PM10	0.27	1.20	99%	27.43	120.14	95%	1.37	6.01
PM2.5	0.27	1.20	99%	27.43	120.14	95%	1.37	6.01

Limited Emissions for each silo

	(lb/hr)	(TPY)
PM	**0.34**	1.50
PM10	**0.34**	1.50
PM2.5	**0.34**	1.50

Assumed PM10 and PM2.5 equal to PM

Appendix A: Emission Calculations
Nucor Crawfordsville warehouse Project
Warehouse Natural Gas Fired Heaters (8 units) (WHSHS)

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Heat input for each heater	0.26	MMBtu/hour
Number of heaters	8	
Hours of operation	8,760	hour/year
NG heating value	1020	MMBtu/MMscf
Annual fuel use	18	MMscf/year

Emission Factors	Value	Units	Basis
PM	1.9	lb/MMscf	of NG (AP-42, Table 1.4-2)
PM10	7.6	lb/MMscf	of NG (AP-42, Table 1.4-2)
PM2.5	7.6	lb/MMscf	of NG (AP-42, Table 1.4-2)
NOx	100.0	lb/MMscf	of NG (AP-42, Table 1.4-1)
SO2	0.6	lb/MMscf	of NG (AP-42, Table 1.4-2)
CO	84	lb/MMscf	of NG (AP-42, Table 1.4-1)
VOC	5.5	lb/MMscf	of NG (AP-42, Table 1.4-2)
Pb	0.0005	lb/MMscf	of NG (AP-42, Table 1.4-2)
GHG (as CO2e)	119,439	lb/MMscf	of NG (40 CFR 98 Subparts A and C)

Total for warehouse heaters	Emissions	
Potential to Emit	(lb/hr)	(TPY)
PM	3.93E-03	0.02
PM10	1.57E-02	0.07
PM2.5	1.57E-02	0.07
NOx	0.2	0.91
SO2	1.24E-03	0.01
CO	0.2	0.76
VOC	1.14E-02	0.05
Pb	1.04E-06	4.53E-06
GHG (as CO2e)	247	1,083

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.9E-05	1.1E-05	6.8E-04	1.6E-02	3.1E-05	**0.02**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
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	4.5E-06	1.0E-05	1.3E-05	3.4E-06	1.9E-05	**5.0E-05**
					Total HAPs	**0.02**
					Worst HAP	**0.02**

Methodology is the same as above.
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: Emission Calculations
Nucor Crawfordsville warehouse Project
D.13 - Large Emergency Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Output Horsepower Rating (hp)	1341
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	670,500
Sulfur Content (S) of Fuel (% by weight)	0.050

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	-	-	-	4.05E-04	-	-	-
				(.00809S)	**see below		
Emission Factor (g/hp-hr)[(1)]	0.04	0.04	0.04	-	5.97	0.03	0.24
Potential Emission in tons/yr	0.03	0.03	0.03	0.14	4.41	0.02	0.18

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).
**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr
[(1)]Emission Factors are from manufacturer specifications
Potential Emissions (tons/yr) = [Output (hp) * [Max hours(hr/yr)] * [Emission Factor (g/hp-hr)] * [lb/453.592 g] * [ton/2000 lb]

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	1.82E-03	6.59E-04	4.53E-04	1.85E-04	5.91E-05	1.85E-05	4.98E-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 Tables 3.3-1 and 3.4-1).

Potential Emission of Total HAPs (tons/yr)	**3.69E-03**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
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]

Greenhouse Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16E+00	6.35E-05	9.30E-06
Potential Emission in tons/yr	3.89E+02	2.13E-02	3.12E-03

Summed Potential Emissions in tons/yr	**388.91**
CO2e Total in tons/yr	**390.35**

Methodology
CO2 Emission Factor is from AP 42 (Supplement B 10/96) Table 3.4-1.
CH4 and N2O Emission Factors are from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) +

Appendix A: Emissions Calculations
Modification Summary

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

	Uncontrolled Potential to Emit (PTE)									
	Criteria Pollutants								Hazardous Air Pollutants	
Process Description	PM	PM10	PM2.5	SO2	NOx	VOC	CO	H_2SO_4	Highest Single HAP	Total HAPs
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
Galavinizing Process FGT&S	875.50	875.50	875.50	-	-	-	-	-	>10	>25
Shot blasting SBT&S	422.36	422.36	422.36	-	-	-	-	-	-	-
Pickling CDPT&S	-	-	-	-	-	-	-	175.10	-	-
Coating Booth Opreation CBT&S	76.48	76.48	76.48	-	-	7.74	-	-	28.24	41.73
Furnace NGGFT&S and Dryer NGDGT&S Combustion	0.16	0.65	0.65	0.05	8.59	0.47	7.21	-	0.15	0.16
Boiler NGBT&S	0.12	0.49	0.49	0.04	6.44	0.35	5.41	-	0.12	0.12
Heater NGHT&S and Space Heaters	0.45	1.79	1.79	0.14	23.57	1.30	19.80	-	0.42	0.44
Cooling Tower CTT&S	0.25	0.25	0.25	-	-	0.00	-	-	-	-
Welding WT&S	1.27	1.27	1.27	-	-	-	-	-	1.45	1.97
Plasma Cutting PCT&S	0.39	0.39	0.39	-	-	-	-	-	-	-
Emergency Generator EGET&S	0.00	0.01	0.01	0.00	0.74	0.15	1.48	-	6.64E-02	9.02E-02
Paved Roads Coils to Towers	33.47	6.69	1.64	-	-	-	-	-	-	-
Paved Roads Towers	48.25	9.65	2.37	-	-	-	-	-	-	-
Total:	**1458.70**	**1395.54**	**1383.21**	**0.23**	**39.34**	**10.01**	**33.90**	**175.10**	**>10**	**>25**
Title V Significant Levels	25	25	25	25	25	25	100	25	NA	NA

	Controlled Potential to Emit (PTE)									
	Criteria Pollutants								Hazardous Air Pollutants	
Process Description	PM	PM10	PM2.5	SO2	NOx	VOC	CO	H_2SO_4	Highest Single HAP	Total HAPs
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
Galavinizing Process FGT&S	8.75	8.75	8.75	-	-	-	-	-	8.75	8.75
Shot blasting SBT&S	4.22	4.22	4.22	-	-	-	-	-	-	-
Pickling CDPT&S	-	-	-	-	-	-	-	8.75	-	-
Coating Booth Opreation CBT&S	0.76	0.76	0.76	-	-	7.74	-	-	1.39	1.80
Furnace NGGFT&S and Dryer NGDGT&S Combustion	0.16	0.65	0.65	0.05	8.59	0.47	7.21	-	1.55E-01	1.62E-01
Boiler NGBT&S	0.12	0.49	0.49	0.04	6.44	0.35	5.41	-	1.16E-01	1.22E-01
Heater NGHT&S and Space Heaters	0.45	1.79	1.79	0.14	23.57	1.30	19.80	-	4.24E-01	4.45E-01
Cooling Tower CTT&S	0.25	0.25	0.25	-	-	0.00	-	-	-	-
Welding WT&S	1.27	1.27	1.27	-	-	-	-	-	1.45	1.97
Plasma Cutting PCT&S	0.39	0.39	0.39	-	-	-	-	-	-	-
Emergency Generator EGET&S	0.00	0.01	0.01	0.00	0.74	0.15	1.48	-	6.64E-02	9.02E-02
Paved Roads Coils to Towers	1.67	0.33	0.08	-	-	-	-	-	-	-
Paved Roads Towers	2.41	0.48	0.12	-	-	-	-	-	-	-
Total:	**20.48**	**19.42**	**18.81**	**0.23**	**39.34**	**10.01**	**33.90**	**8.75**	**8.75**	**13.34**
Title V Significant Levels	25	25	25	25	25	25	100	25	NA	NA

	After Issuance Potential to Emit (PTE)									
	Criteria Pollutants								Hazardous Air Pollutants	
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**H_2SO_4**	**Highest Single HAP**	**Total HAPs**
	(tons/yr)	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**	**(tons/yr)**
Galavinizing Process FGT&S	3.50	3.50	3.50	-	-	-	-	-	3.50	3.50
Shot blasting SBT&S	1.45	1.45	1.45	-	-	-	-	-	-	-
Pickling CDPT&S	-	-	-	-	-	-	-	5.20	-	-
Coating Booth Opreation CBT&S	0.76	0.76	0.76	-	-	7.74	-	-	1.00	2.00
Furnace NGGFT&S and Dryer NGDGT&S Combustion	0.16	0.65	0.39	0.05	8.59	0.47	7.21	-	1.55E-01	1.62E-01
Boiler NGBT&S	0.12	0.49	0.49	0.04	6.44	0.35	5.41	-	1.16E-01	1.22E-01
Heater NGHT&S and Space Heaters	0.45	1.79	0.82	0.14	10.76	1.30	19.80	-	4.24E-01	4.45E-01
Cooling Tower CTT&S	0.25	0.25	0.25	-	-	0.00	-	-	-	-
Welding WT&S	1.27	1.27	1.27	-	-	-	-	-	1.45	1.97
Plasma Cutting PCT&S	0.39	0.39	0.39	-	-	-	-	-	-	-
Emergency Generator EGET&S	9.70E-05	0.01	0.01	7.40E-04	0.74	0.15	1.48	-	6.64E-02	9.02E-02
Paved Roads Coils to Towers	1.67	0.33	0.08	-	-	-	-	-	-	-
Paved Roads Towers	2.41	0.48	0.12	-	-	-	-	-	-	-
Total:	**12.45**	**11.39**	**9.54**	**0.23**	**26.53**	**10.01**	**33.90**	**5.20**	**3.50**	**8.29**
PSD Significant Levels	25	15	10	40	40	40	100	10	NA	NA

Appendix A: Emissions Calculations
Galvenizing Process Emissions FGT&S

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Flux is used in the process.

Nominal Peak Production Rate	No. of Baghouses	Air Flow Rate	PM grain loading (1)	HCl grain loading (1)	Control Efficiency	Controlled Potential to Emit				Uncontrolled Potential to Emit			
						PM/PM10/PM2.5		HCl		PM/PM10/PM2.5		HCl	
tons/hr		acfm	gr/acf	gr/acf	(%)	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
40	2	53000	0.0022	0.0022	99%	2.00	8.75	2.00	8.75	199.89	875.50	199.89	875.50

Limited Potential to Emit PM/PM10/PM2.5	Limited Potential to Emit HCl	Annual Limited hours of Operation	Limited Potential to Emit PM/PM10/PM2.5	Limited Potential to Emit HCl
lb/hr	lb/hr	hr/yr	ton/yr	ton/yr
2.00	2.00	3,500	3.50	3.50

326 IAC 6-3-2		
Process Weight Rate (P) (ton/hr)	Rate of Emission (E) (lb/hr)	Control Needed?
40.00	42.53	Yes

Notes:
(1) Based off Vendor Specifications

Methodology:
Controlled Potential to Emit PM/PM10/PM2.5 (lb/hr) = Air Flow Rate (acfm) * PM Grain loading (mg/ft3) * 60 min/1hr * 7000gr/1 lb
Controlled Potential to Emit PM/PM10/PM2.5 (ton/yr) = Controlled Potential to Emit PM/PM10/PM2.5 (lb/hr) * 8760 hr/1yr * 1ton/2000lb
Controlled Potential to Emit HCl (lb/hr) = Air Flow Rate (acfm) * HCl Grain loading (gr/acf) * 60 min/1hr * 7000gr/1 lb
Controlled Potential to Emit HCl (ton/yr) = Controlled Potential to Emit HCl (lb/hr) * 8760 hr/1yr * 1ton/2000lb

Rate of Emission (E) (lb/hr) = 55 * P^0.11 - 40

Appendix A: Emissions Calculations
Shot Blasting Particulate Emissions
SBT&S

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

			PM/PM10/PM2.5			
Air Flow Rate	**Outlet grain loading** [1]	**Control Efficiency**	**Controlled Potential to Emit**		**Uncontrolled Potential to Emit**	
acfm	**gr/acf**	**(%)**	**lb/hr**	**ton/yr**	**lb/hr**	**ton/yr**
22500	0.005	99%	0.96	4.22	96.43	422.36

Limited Potential to Emit PM/PM10/PM2.5	Annual Limited hours of Operation	Limited Potential to Emit PM/PM10/PM2.5
lb/hr	hr/yr	ton/yr
0.96	3,000	1.45

Notes:
[1] Based off Vendor Specifications

Methodology:
Controlled Potential to Emit PM/PM10/PM2.5 (lb/hr) = Air Flow Rate (acfm) * PM Grain loading (mg/ft3) * 60 min/1hr * 7000gr/1 lb
Controlled Potential to Emit PM/PM10/PM2.5 (ton/yr) = Controlled Potential to Emit PM/PM10/PM2.5 (lb/hr) * 8760 hr/1yr * 1ton/2000lb

Appendix A: Emission Calculations
Pickling CDPT&S
Particulate Emissions

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emission Unit: Picking Operation with fume scrubbers for sulfuric acid

Parameters:			
Expected operation	8,760	hours/year	
Limited Operation	5,200	hours/year	
Nominal peak production rate	40	tons/hour	
Exhaust flow rate for scrubber	53,000	acfm	
Number of scrubbing towers	2		
Control Efficiency %	95%		
H2SO4 outlet	5.0	mg/m3	vendor specification
	0.0022	gr/acf	

Potential to Emit:	Controlled		Uncontrolled		Limited	
Pollutant	Short Term (lb/hour)	Annual (tons/ year)	Short term (lb/hr)	Annual (tons/year)	Short Term (lb/hr)	Annual (tons/yr)
H2SO4	2.00	8.75	39.98	175.10	2.00	5.20

Note:

The pickling step will dip the steel components in a tank in a batch process using sulfuric acid solution which creates very little fumes due to very high affinity to water. The dip process does not involve mechanical agitation and results in only small disturbances of the liquid surface during the first moments of the process. Parts are allowed to "drip dry" before rinsing. There will be large head space above the treament tank to allow the parts to be moved for dipping athat will further ensure minimal or no PM reporting to the scrubber.

Appendix A: Emissions Calculations
VOC and Particulate
From Coating Booth Operations CBT&S

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

PM/PM10/PM2.5 and VOC

Material (1)	Maximum Throughput	Usage			Density	%Wt Solid	% wt Water	% wt VOC	Overspray	Control Efficiency	Transfer Efficiency	Uncontrolled Potential to Emit			Controlled PTE	Pounds VOC per gallon of
												VOC		PM/PM10/PM2.5	PM/PM10/PM2.5	
	poles/hr	gal/yr	gal/hr	gal/pole	lbs/gal				lbs/yr	%	%	lb/yr	ton/yr	ton/yr	ton/yr	0.00
Chemline Part A	4	15000	1.71	0.43	9.78	100%	0%	0%	80685	99%	45%	0	0	40.34	0.40	0.18
Chemline Part B(2)	4	15000	1.71	0.43	8.76	98%	0%	2%	72270	99%	45%	2628.00	1.31	36.14	0.36	2.78
Davis Frost N-614	4	4000	0.46	0.11	11	89%	0%	25%	0	0%	100%	11136.40	5.57	0.00	0.00	0.94
Davis Frost 57-X657	4	1000	0.11	0.03	9.4	90%	0%	10%	0	0%	100%	940.00	0.47	0.00	0.00	6.51
Jasco Minieral Spirits(2),(3)	4	120	0.01	3.42E-03	6.51	0%	0%	100%	0	0%	100%	781.20	0.39	0.00	0.00	0.00
												Total	**7.74**	**76.48**	**0.76**	

Notes:
(1) During the application of polyurethane, component A (isocyanate) and component B (polyols) are mixed together and the components react quickly to form polyurethane foam, with negligible emissions of methylene diphenyl diisocyanate (MDI) (a volatile organic compound (VOC) and hazardous air pollutant (HAP)).
(2) Contain no HAPs per the SDS provided by the source.
(3) Manual cleaning application.

HAPs

Material	% MDI	%Benzene	%PCBTF	Uncontrolled Potential to Emit			Controlled Potential to Emit			Limited Potential to Emit	
				MDI	Benzene	PCBTF	MDI	Benzene	PCBTF	MDI	Benzene
				ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
Chemline Part A	70%	30%		28.24	12.10	-	0.28	0.12	-	1.00	1.00
Davis Frost N-614			25%	-	-	1.39	-	-	1.39205	-	-
			Total Single	**28.24**	**12.10**	**1.39**	**0.28**	**0.12**	**1.39**	**1.00**	**1.00**
			Combined Total	**41.73**			**1.80**			**2.00**	

MDI = Methylene-diphenyl diisocyanate
PCBTF = Parachlorobenzotrifluoride

Methodology:
Overspray (lbs/yr) = Usage (gal/yr) * Density (lbs/gal) * (1-Transfer Efficiency (%))
Uncontrolled Potential to Emit VOC (lb/yr) = Usage (gal/yr) * Density (lbs/gal) * %wt VOC
Uncontrolled Potential to Emit VOC (ton/yr) = Usage (gal/yr) * Density (lbs/gal) * %wt VOC * 1ton/2000 lbs
Uncontrolled Potential to Emit PM/PM10/PM2.5 (ton/yr) = Overspray (lbs/yr) * 1ton/2000 lbs
Controlled Potential to Emit PM/PM10/PM2.5 (ton/yr) = Overspray (lbs/yr) * 1ton/2000 lbs * (1-Control Efficiency (%))
Uncontrolled Potential to Emit MDI/Benzene (ton/yr) = Uncontrolled PM/PM10/PM2.5 for Chemline Part A (ton/yr) * %MDI or %Benzene
Uncontrolled Potential to Emit PCBTF (ton/yr) = Uncontrolled VOC for Davis Frost N-614 (ton/yr) * %PCBTF
Controlled Potential to Emit MDI/Benzene (ton/yr) = Controlled PM/PM10/PM2.5 for Chemline Part A (ton/yr) * %MDI or %Benzene

Appendix A: Emissions Calculations
Natural Gas Combustion (≤ 100 MMBtu/hr)
Galvanizing Furnace and Dryer
Project #46841

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Emission Unit	I.D.	No. Units	Heat Input Capacit MMBtu/hr, each	Heat Input Capacity MMBtu/hr, total
Galvanizing Furnace	NGGFT&S	1	17	17
Dryer	NGDGT&S	1	3	3
Total				**20**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr	Annual Limited Hours of Operations hr/yr	Limited Potential Throughput MMCF/yr
20.00	1020	171.8	**5,200**	**102.0**

	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
Uncontrolled/Unlimited Potential Emission in tons/yr	0.16	0.65	0.65	0.05	8.59	0.47	7.21
Limited Potential Emissions in tons/yr	-	-	**0.39**	-	**-**	-	-

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

Hazardous Air Pollutants (HAPs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.8E-04	1.0E-04	6.4E-03	1.5E-01	2.9E-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	4.3E-05	9.4E-05	1.2E-04	3.3E-05	1.8E-04

Potential Emission of Combined HAPs (tons/yr)	**1.6E-01**	
Potential Emission of Highest Single HAP (tons/yr)	**1.5E-01**	**Hexane**

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

Greenhouse Gases (GHGs)

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	10,306	0.20	0.19
Summed Potential Emissions in tons/yr		10,306	
CO2e Total in tons/yr		10,367	

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.
Potential Emission (tons/yr) = Potential 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 (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Natural Gas Combustion (≤ 100 MMBtu/hr)
Boiler
Project #46841

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emission Unit	I.D.	No. Units	Heat Input Capacit MMBtu/hr, each	Heat Input Capacity MMBtu/hr, total
Boiler	NGBT&S	1	15	15
Total				**15**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
15.00	1020	128.8

	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
Uncontrolled/Unlimited Potential Emission in tons/yr	0.12	0.49	0.49	0.04	6.44	0.35	5.41

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

Hazardous Air Pollutants (HAPs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.4E-04	7.7E-05	4.8E-03	1.2E-01	2.2E-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	3.2E-05	7.1E-05	9.0E-05	2.4E-05	1.4E-04

Potential Emission of Combined HAPs (tons/yr)	**1.2E-01**	
Potential Emission of Highest Single HAP (tons/yr)	**1.2E-01**	**Hexane**

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

Greenhouse Gases (GHGs)

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	7,729	0.15	0.14
Summed Potential Emissions in tons/yr	7,730		
CO2e Total in tons/yr	7,775		

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.
Potential Emission (tons/yr) = Potential 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 (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Natural Gas Combustion (≤ 100 MMBtu/hr)
Project #46841

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Emission Unit	I.D.	No. Units	Heat Input Capacit MMBtu/hr, each	Heat Input Capacity MMBtu/hr, total
Heater	NGHT&S	1	1.48	1.48
Space Heaters		20	2.67	53.4
Total				**54.88**

Heat Input Capacity	HHV mmBtu / mmscf	Potential Throughput	Annual Limited Hours of Operations	Limited Potential Throughput
MMBtu/hr		MMCF/yr	hr/yr	MMCF/yr
54.88	1020	471.3	**4,000**	**215.22**

	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
Uncontrolled/Unlimited Potential Emission in tons/yr	0.45	1.79	1.79	0.14	23.57	1.30	19.80
Limited Potential Emissions in tons/yr	-	-	**0.82**	-	**10.76**	-	-

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

Hazardous Air Pollutants (HAPs)

	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	4.9E-04	2.8E-04	1.8E-02	4.2E-01	8.0E-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	1.2E-04	2.6E-04	3.3E-04	9.0E-05	4.9E-04

Potential Emission of Combined HAPs (tons/yr)	**4.4E-01**	
Potential Emission of Highest Single HAP (tons/yr)	**4.2E-01**	**Hexane**

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

Greenhouse Gases (GHGs)

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	28,279	0.54	0.52
Summed Potential Emissions in tons/yr		28,280	
CO2e Total in tons/yr		28,447	

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.
Potential Emission (tons/yr) = Potential 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 (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Cooling Tower (CTT&S)

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

LINDE GASES COOLING TOWER SPECIFICATIONS

Emission Source	Circulation Rate (gal/min)	Circulation Rate (gal/hr)	TDS Content (average mg/l)	Drift Loss (gal/gal of circulation)	Operating Hours (hr/yr)
New Cooling Tower	1,000	60,000	2,300	0.0050%	8760

CALCULATION OF POTENTIAL PM/PM10/PM2.5 EMISSIONS ASSOCIATED WITH THE PROPOSED COOLING TOWER

Circulating Water TDS = (CC) (TDS)

Circulating Water TDS = $\frac{[(1)\ (2300\ mg/l)]\ \ (1.0g/1000\ mg)\ (3.785\ L/gal)}{(453.6\ g/lb)}$

Circulating Water TDS = 1.919E-02 lb/gal

Drift = (DR) (CW) = (0.00005) (60000 gal/hr) (8760 hr/yr)
Drift = 26,280 gal/year

Drift Particulate = (Drift) (Circulating Water TDS)
Drift Particulate = (26280 gal/yr) (0.01919 lb/gal) = 504.38 lb/yr

Drift PM/PM10/PM2.5 Emission Rate =	**504.38**	**=**	**0.0576**	**lb/hour**	**=**	**0.252**	**tons/year**

CALCULATION OF POTENTIAL VOC EMISSIONS ASSOCIATED WITH THE PROPOSED COOLING TOWER

Emission Source		Circulation Rate (gal/hour)	VOM Emission Factor (lb/10^6 gal per hour)*	VOC (tpy)
Contact Cooling Towers		60,000	0	0.00

*Cooling Towers will not use VOC/HAP-containing chemicals

Appendix A: Emissions Calculations
Welding
WT&S

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Process	Number of Poles per day	Number of feet per pole	Number of poles per year	Number of feet per year	Number of Stations	Maximum electrode consumption per station (lbs/hr)	Maximum electrode consumption per station (lbs/day)	Emission Factors* (lb pollutant/lb electrode)				Potential to Emit (lbs/hr)				HAPs (lbs/hr)
Welding								PM/PM10/PM2.5	Mn	Ni	Cr	PM/PM10/PM2.5	Mn	Ni	Cr	
Submerged Arc	165		60225		1	29.68	712.33	0.00005	0.011			0.001	0.326	0	0	0.326
MCAW	165		60225		1	74.20	1780.82	0.0039	0.00007	0.00125	0.000353	0.289	5.2E-03	0	0.02619292	1.2E-01
Totals																
Potential to Emit (lbs/hr)												0.29	3.3E-01	9.3E-02	2.6E-02	4.5E-01
Potential to Emit (lbs/day)												6.98	7.960	2.2E+00	0.629	10.815
Potential to Emit (tons/year)												1.27	1.5E+00	4.1E-01	1.1E-01	2.0E+00
Limited Totals																
Potential to Emit (lbs/hr)												0.29	0.33	0.09	0.03	0.45
Potential to Emit (lbs/day)												6.98	7.96	2.23	0.63	10.81
Potential to Emit (tons/year)												1.27	1.45	0.41	0.11	1.97

Methodology:
*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted).
Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.
Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
Plasma cutting: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum Metal Cutting Rate, inches/minute) x (60 minutes/hr) x (Emission Factor, lb pollutant/1,000 inches cut, 8 mm thick)
Cutting: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum Metal Thickness, inches) x (Maximum Metal Cutting Rate, inches/minute) x (60 minutes/hour) x (Emission Factor, lb pollutant/1,000 inches cut, 1" thick)
Welding: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum electode consumption per station, lbs/hr) x (Emission Factor, lb pollutant/lb of electrode used)
Potential to Emit (lbs/day) = Potential to Emit (lbs/hr) x (24 hours/day)
Potential to Emit (tons/year) = Potential to Emit (lbs/hr) x (8,760 hours/year) x (1 ton/2,000 lbs)

Appendix A: Emissions Calculations
Plasma Cutting
PCT&S

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Flame Cutting	Number of Poles per day	Number of feet per pole	Number of poles per year	Number of feet per year	Number of Stations	Maximum Metal Thickness Cut (inches)	Maximum Metal Cutting Rate (inches/hour)	Emission Factors (lb pollutant/1,000 inches cut, 1 inch thick)** PM/PM10/PM2.5	Potential to Emit (lbs/hr) PM/PM10/PM2.5
Plasma**	165	139	60225	8371275	2	1	11467.5	0.0039	0.089
Limited Plasma	165	139	41250	5733750	2	1	7854.452	0.0039	0.061
Uncontrolled Totals									
Potential to Emit (lbs/hr)									0.09
Potential to Emit (lbs/day)									2.15
Potential to Emit (tons/year)									0.39

Controlled Totals								Conttrol Efficiency	0.01
Potential to Emit (lbs/hr)								%	0.21
Potential to Emit (lbs/day)								90%	0.04
Potential to Emit (tons/year)									

Methodology:
*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted).
Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.
Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
Plasma cutting: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum Metal Cutting Rate, inches/minute) x (60 minutes/hr) x (Emission Factor, lb pollutant/1,000 inches cut, 8 mm thick)
Cutting: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum Metal Thickness, inches) x (Maximum Metal Cutting Rate, inches/minute) x (60 minutes/hour) x (Emission Factor, lb pollutant/1,000 inches cut, 1" thick)
Potential to Emit (lbs/day) = Potential to Emit (lbs/hr) x (24 hours/day)
Potential to Emit (tons/year) = Potential to Emit (lbs/hr) x (8,760 hours/year) x (1 ton/2,000 lbs)

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Lean-Burn (4SLB) Engines

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Maximum Output Horsepower Rating (hp)	671
Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr)	7500
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	2516
Potential Fuel Usage (hp-hr/yr)	335500
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	2.47

	Pollutant						
Criteria Pollutants	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	7.71E-05	9.99E-03	9.99E-03	5.88E-04	4.08	0.12	0.32
Emission Factor NSPS JJJJ (g/hp-hr)	--	--	--	--	2.00	--	4.00
Potential Emissions (tons/yr)	0.0001	0.01	0.01	0.001	0.74	0.15	1.48

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	8.36E-03	0.011
Acrolein	5.14E-03	0.006
Benzene	4.40E-04	0.001
Biphenyl	2.12E-04	0.000
1,3-Butadiene	2.67E-04	0.000
Formaldehyde	5.28E-02	0.066
Methanol	2.50E-03	0.003
Hexane	1.10E-03	0.001
Toluene	4.08E-04	0.001
2,2,4-Trimethylpentane	2.50E-04	0.000
Xylene	1.84E-04	0.000
	Total	**0.09**

HAP pollutants consist of the eleven highest HAPs included in AP-42 Table 3.2-2.

Methodology
Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]
Potential Fuel Usage (hp-hr/yr) = [Maximum Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year (hr/yr)]
Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]
Potential Emissions (tons/yr) = [Potential Fuel Usage (hp-hr/yr)] * [Emission Factor g/hp-hr] / [907184.7g/ton]

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
CO2 = Cabon Dioxide
CH4 = Methane
N2O = Nitrous Oxide
CO2e = CO2 equivalent emissions

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations (Chem Coater)

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Material	Density (lbs/gal)	Weight % Volatile (water, VOC, and exempt compounds*)	Weight % water and exempt compounds*	Weight % VOC	Volume % water and exempt compounds*	Volume % Solids	Maximum Material Usage (gal/unit)	Maximum Capacity (units/hour)	Maximum Material Usage (gal/day)	Pounds VOC per gallon of coating less water and exempt compounds	Pounds VOC per gallon of coating	PTE of VOC (lbs/hour)	PTE of VOC (lbs/day)	PTE of VOC (tons/year)	Uncontrolled PTE of PM/PM10/PM2.5 (tons/year)	Pounds VOC per gallon of coating solids	Transfer Efficiency
Quaker Primecoat HC 360	11.85	0.00%	0.00%	0.00%	0.00%	0.00%	1.000	27.000	648.000	0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!	100%
Quaker Primecoat Z 838-4	9.66	5.00%	0.00%	5.00%	0.00%	0.00%	1.000	27.000	648.000	0.48	0.48	13.04	312.98	57.12	0.00	0.44	100%
								Totals	**648.00**			**13.04**	**312.98**	**57.12**	**0.00**		

Control Efficiency =	
Total Controlled Potential to Emit (PTE) (tons/year) =	**0.00**

Material	Density (lbs/gal)	Maximum Material Usage (gal/unit)	Maximum Capacity (units/hour)	Pounds HAP per gallon of coating	Weight % Methanol	PTE of Methanol (tons/year)	PTE of Total HAPs (tons/year)
Quaker Primecoat HC 360	11.85	1.000	27.000	0.000	0.00%	0.00	0.00
Quaker Primecoat Z 838-4	9.66	1.000	27.000	0.250	5.00%	29.57	29.57

Note:
1. The coating process is a roll coating application; therefore, transfer efficiency is assumed to be 100% and there are no potential particulate emissions.
2. Only one primecoat can be applied at a time. Therefore, the worst-case coating emissions are shown.
3. The pounds VOC per gallon of coating and pounds of HAP per gallon of coating for Z 838-4 were provided by the supplier. This product has a VOC content of 0.053 kg VOC/L solids and HAP content of 0.0305 kg HAP/ 1 L solids.
4. Quaker Primecoat HC 360 contains all inorganic compounds

Methodology
*Exempt compounds include all compounds specifically exempted from the definition of volatile organic compounds (VOC) under 40 CFR 51.100(s).
Weight % VOC = [Weight % Volatile (water, VOC, and exempt Compounds*)] - [Weight % water and exempt Compounds]
Maximum Material Usage (gal/day) = [Maximum Material Usage (gal/unit)] * [Maximum Capacity (units/hour)] * [24 hours/day]
Pounds of VOC per gallon coating less water and exempt Compounds = [Density (lbs/gal)] * [Weight % VOC] / [1 - (Volume % water and exempt Compounds)]
Pounds of VOC per gallon coating = [Density (lbs/gal)] * [Weight % VOC]
PTE of VOC (lbs/hour) = [Maximum Material Usage (gal/unit)] * [Maximum Capacity (units/hour)] * [Pounds of VOC per gallon coating]
PTE of VOC (lbs/day) = [PTE of VOC (lbs/hour)] * [24 hours/day]
PTE of VOC (tons/year) = [PTE of VOC (lbs/hour)] * [8760 hours/year]* [1 ton/2000 lbs]
Uncontrolled PTE of PM/PM10/PM2.5 (tons/year) = [Density (lbs/gal)] * [Maximum Material Usage (gal/unit)] * [Maximum Capacity (units/hour)] * [1 - Weight % Volatile)] * [1 - Transfer Efficiency)] * [8760 hour/year] * [1 ton/2000 lbs]
Pounds VOC per gallon of coating solids = [Density (lbs/gal)] * [Weight % VOCs] / [Volume % Solids]
Controlled PTE of PM/PM10/PM2.5 (tons/year) = [Uncontrolled PTE of PM/PM10/PM2.5 (tons/year)] * [1 - Control Efficiency]

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
D.22 Preheat Section Burners (PHB#1 - PHB#36)

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
54.3	1020	466.3

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx**	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	-	5.5	84
Emission Factor in lb/MMBtu	-	-	-	-	0.05	-	-
Potential Emission in tons/yr	0.44	1.77	1.77	0.14	11.89	1.28	19.59

*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.
**NOx emission factor is based on low NOx burner and manufacturer's guarantee.

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx**	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	-	-	-	5.5	84
Limited Emission Rate lb/hr	-	-	-	-	2.9	-	-
Limited Emission in tons/yr	1.77	1.77	1.77	0.14	12.70	1.28	19.59

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
NOx Emissions (tons/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x Emission Factor (lb/MMBtu)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
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	4.9E-04	2.8E-04	1.7E-02	0.42	7.9E-04	**0.44**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
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	1.2E-04	2.6E-04	3.3E-04	8.9E-05	4.9E-04	**1.3E-03**
					Total HAPs	**0.44**
					Worst HAP	**0.42**

Methodology is the same as above.
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
D.22 Radiant Tube Section Heaters (RB#1 - RB#44)

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
14.2	1020	122.1

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx**	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	-	5.5	84
Emission Factor in lb/MMBtu	-	-	-	-	0.1	-	-
Potential Emission in tons/yr	0.12	0.46	0.46	0.04	6.22	0.34	5.13

*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.
**NOx emission factor is based on low NOx burner and manufacturer's guarantee.

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx**	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	-	-	-	5.5	84
Limited Emission Rate lb/hr	-	-	-	-	2.8	-	-
Limited Emission in tons/yr	0.46	0.46	0.46	0.04	12.26	0.34	5.13

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
NOx Emissions (tons/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x Emission Factor (lb/MMBtu)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.3E-04	7.3E-05	4.6E-03	0.11	2.1E-04	**0.11**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
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	3.1E-05	6.7E-05	8.5E-05	2.3E-05	1.3E-04	**3.3E-04**
					Total HAPs	**0.12**
					Worst HAP	**0.11**

Methodology is the same as above.
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: Emission Calculations
Process Emissions

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Process/Facility	Maximum Throughput Rate		Air Flow Rate (dscfm)	PM Emissions Limit or Loading Rate (gr/dscf)	PM10 Emissions Limit or Loading Rate (gr/dscf)	PM2.5 Emissions Limit (gr/dscf)	SO2 Emissions Limit (lb/ton)	CO Emissions Limit (lb/ton)	VOC Emissions Limit (lb/ton)	NOx Emissions Limit (lb/ton)	Lead Emissions Limit (lb/hr)	Mercury Emissions Limit (lb/hr)	Beryllium Emissions Limit (lb/hr)	Fluorides Emissions Limit (lb/hr)
D.5 Lime (5) and Carbon Silos (3)			1,200	0.01	each silo	-	-	-	-	-	-	-	-	-
D.15 - Pickle Line 1			12,000	0.01	-	-	-	-	-	-	-	-	-	-
D.15 - Pickle Line 2			9,000	0.01	-	-	-	-	-	-	-	-	-	-
D.16 - Cold Reversing Mill	250	tons/hr	84,000	0.01	-	-	-	-	0.06	-	-	-	-	-
D.17 - Cold Mill - Reversing /Temper Mill	250	tons/hr	84,000	0.01	-	-	-	-	0.06	-	-	-	-	-
D.18 - Alkaline Cleaning Station	140	tons/hr	6,800	0.003	0.003	0.003	-	-	-	-	-	-	-	-
D.25 - Hot Strip Mill	502	tons/hr	-	-	-	-	-	-	0.06	-	-	-	-	-
D.29 - Meltshop Operations	4,397,520	tons/year	2,042,055	0.0018	0.0052	0.0052	0.33	2.0	0.09	0.35	0.2400	0.0800	0.0020	5.0200

Process/Facility	Controlled Potential to Emit										
	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	SO2 Emissions (tons/yr)	CO Emissions (tons/yr)	VOC Emissions (tons/yr)	NOx Emissions (ton/yr)	Lead Emissions (tons/yr)	Mercury Emissions (tons/yr)	Beryllium Emissions (tons/yr)	Fluorides Emissions (tons/yr)
D.5 Lime (5) and Carbon Silos (3)	3.60	3.60	3.60	-	-	-	-	-	-	-	-
D.15 - Pickle Line 1	4.51	4.51	4.51	-	-	-	-	-	-	-	-
D.15 - Pickle Line 2	3.38	3.38	3.38	-	-	-	-	-	-	-	-
D.16 - Cold Reversing Mill	31.54	31.54	31.5	-	-	65.7	-	-	-	-	-
D.17 - Cold Mill - Reversing /Temper Mill	31.54	31.54	31.5	-	-	65.7	-	-	-	-	-
D.18 - Alkaline Cleaning Station	0.77	0.77	0.77	-	-	-	-	-	-	-	-
D.25 - Hot Strip Mill	-	-	-	-	-	131.9	-	-	-	-	-
D.29 - Meltshop Operations	138.0	398.7	398.7	725.6	4,397.5	197.9	769.6	1.1	0.4	0.0	22.0
	213.32	**473.98**	**473.98**	**725.59**	**4,397.52**	**461.21**	**769.57**	**1.05**	**0.35**	**0.01**	**21.99**

Process/Facility	Limited / Controlled Potential to Emit										
	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	SO2 Emissions (tons/yr)	NOx Emissions (ton/yr)	VOC Emissions (tons/yr)	CO Emissions (tons/yr)	Lead Emissions (tons/yr)	Mercury Emissions (tons/yr)	Beryllium Emissions (tons/yr)	Fluorides Emissions (tons/yr)
D.5 Lime (5) and Carbon Silos (3)	3.60	3.60	3.60	-	-	-	-	-	-	-	-
D.15 - Pickle Line 1	4.51	4.51	4.51	-	-	-	-	-	-	-	-
D.15 - Pickle Line 2	3.38	3.38	3.38	-	-	-	-	-	-	-	-
D.16 - Cold Reversing Mill	31.54	31.54	31.54	-	-	65.7	-	-	-	-	-
D.17 - Cold Mill - Reversing /Temper Mill	31.54	31.54	31.5	-	-	65.7	-	-	-	-	-
D.18 - Alkaline Cleaning Station	15.32	15.32	15.32	-	-	-	-	-	-	-	-
D.25 - Hot Strip Mill	-	-	-	-	-	131.9	-	-	-	-	-
D.29 - Meltshop Operations	138.0	398.7	398.7	725.6	769.6	197.9	4397.5	1.05	0.35	0.01	21.99
TOTAL PTE	**227.87**	**488.53**	**488.53**	**725.59**	**769.57**	**461.21**	**4,397.52**	**1.05**	**0.35**	**0.01**	**21.99**

Process/Facility	Uncontrolled Potential to Emit										
	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	SO2 Emissions (tons/yr)	NOx Emissions (ton/yr)	VOC Emissions (tons/yr)	CO Emissions (tons/yr)	Lead Emissions (tons/yr)	Mercury Emissions (tons/yr)	Beryllium Emissions (tons/yr)	Fluorides Emissions (tons/yr)
D.5 Lime (5) and Carbon Silos (3)	480.5	480.5	480.5	-	-	-	-	-	-	-	-
D.15 - Pickle Line 1	90.1	90.1	90.1	-	-	-	-	-	-	-	-
D.15 - Pickle Line 2	67.6	67.6	67.6	-	-	-	-	-	-	-	-
D.16 - Cold Reversing Mill	630.7	630.7	630.7	-	-	65.7	-	-	-	-	-
D.17 - Cold Mill - Reversing /Temper Mill	630.7	630.7	630.7	-	-	65.7	-	-	-	-	-
D.18 - Alkaline Cleaning Station	15.3	15.3	15.3	-	-	-	-	-	-	-	-
D.25 - Hot Strip Mill	-	-	-	-	-	131.9	-	-	-	-	-
D.29 - Meltshop Operations	98,568.74	284,754.15	284,754.15	725.6	769.6	197.9	4,397.5	750.9	250.3	6.3	22.0
TOTAL PTE	**100,483.73**	**286,669.14**	**286,669.14**	**725.59**	**769.57**	**461.21**	**4,397.52**	**750.86**	**250.29**	**6.26**	**21.99**

Notes:
For CAM applicability the worst case is the entire Meltshop Operations which include 2 EAFS, 3 LMFs, AOD vessel, decarburization station, 2 continuous casters all controlled by Meltshop Baghouses 1 and 2.
The Meltshop has been determined to be a large unit in PSD 107-26591 and a CAM has already been established in that PSD permit.

Meltshop baghouse Efficiency = 99.86%

Castrip baghouseEfficiency = 99.85%
Vacuum Degasser Flare is used to control CO only= 95%
Cold Reversing Mill Mist Eliminator = 95%
Alkaline Cleaning Station Mist Eliminator = 95%
Pickle Line 1 Scrubber =95%
Pickle Line 2 Scrubber =95%
Lime and carbon Silos bin Vents = 99.25%
Galvanizing Line SCR/SNCR (NOx) 95%
Emission Factors (Efs) are based upon the source's federally enforceable (PSD BACT) limits.

Methodology:
PTE, tons/yr = Throughput, tons/yr * Emission Factor, lb/ton * ton/2000 lbs
PTE, tons/yr = air flow rate, dscfm * Emission Factor, gr/dscf * 60 min/hr * 8760 hr/yr * lb/7000 gr* ton/2000 lbs

Appendix A: Emission Calculations
Combustion Emissions

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Natural Gas Combustion

Unlimited Natural Gas Combustion (hrs/yr)	HHV MMBtu / MMscf			Pollutant								
				PM	PM10	direct PM2.5	SO_2	NO_X	VOC	CO	Lead	HAPs
8760	1020		Emission Factors or PSD BACT Limits[1] (lbs/MMCF)	1.9	7.6	7.6	0.6	100	5.5	84.0	5.0E-04	1.89
			D.2 - Castrip Boiler PSD Limits (lb/MMBtu)	0.0076	0.0076	*	0.0006	0.035	0.0026	0.061	*	*
			D.16 - CMB#1 PSD BACT Limit (lb/MMCF)	3	3	*	*	200	2.8	35.0	*	*
			D.19 - Annealing Furnaces (18) (lb/MMBtu)	*	*	*	*	0.10	*	0.084	*	*
			D.19 - Annealing Furnaces (AN-19) (lb/MMBtu)	*	*	*	*	0.208	*	*	*	*

Emission Unit ID	Unit ID	Heat Input Capacity (MMBtu/hour)	Potential Throughput (MMCF/year)	Potential To Emit (tons/year)								
				PM	PM10	direct PM2.5	SO_2	NO_X	VOC	CO	Lead	HAPs
D.2 - Castrip Boiler	Low-Nox Boiler	71.04	610.1	0.58	2.32	2.32	0.18	30.51	1.68	25.62	1.53E-04	0.58
D.8 - Linde Gases Boilers (N.G. and Propane fired)	No.1	7.0	60.1	0.06	0.23	0.23	0.02	3.01	0.17	2.52	1.50E-05	0.06
	No.2	15.0	128.8	0.12	0.49	0.49	0.04	6.44	0.35	5.41	3.22E-05	0.12
	Hydrogen Plant Boiler	9.98	85.7	0.08	0.33	0.33	0.03	4.29	0.24	3.60	2.14E-05	0.08
D.16 - Cold Mill Boiler	CMB#1	34.0	292.0	0.28	1.11	1.11	0.09	14.60	0.80	12.26	7.30E-05	0.28
D.19 - 19 annealing furnaces each 4.8 MMBtu/hr	EU-03 and AN-19	91.2	783.2	0.74	2.98	2.98	0.23	39.16	2.15	32.90	1.96E-04	0.74
D.21 - Acid Regen 2 Burners each 5.6 MMBtu/hr	EU-04	5.6	48.1		See Note 2		0.01	2.40	0.13	2.02	1.20E-05	0.05
D.22 - Cold Mill - Alkaline Cleaning Burner at 3.2 MMBtu/hr, 2 Strip Dryer Burners each 1.5 MMBtu/hr, 4 Pot Roll Burners each 0.052 MMBtu/hr, 2 Zinc Pot Emergency Burners each 0.58 MMBtu/hr and 2 Preheat Open End Burners each 0.013 MMBtu/hr	none	6.4	55.3	0.05	0.21	0.21	0.02	2.76	0.15	2.32	1.38E-05	0.05
D.25 - Tunnel Furnaces 1 and 2 each 84 MMBtu/hr	EU-02	168.0	1442.8	1.37	5.48	5.48	0.43	72.14	3.97	60.60	3.61E-04	1.36
D.25 - Shuttle Furnaces 1 and 2 each 13 MMBtu/hr, Snub Furnace at 6 MMBtu/hr	EU-02	32.0	274.8	0.26	1.04	1.04	0.08	13.74	0.76	11.54	6.87E-05	0.26
D.29 - Meltshop - 7 Ladle Preheaters LP #1a - LP #6a, LD-1. LP #1a - LP #5a and LD-1 each at 10 MMBtu/hr, LP #6 at 12 MMBtu/hr	LP #1a - LP #6a, LD-1. LP #1a - LP #5a, LD-1, LP #6	72.0	618.4	0.59	2.35	2.35	0.19	30.92	1.70	25.97	1.55E-04	0.58
D.29 - Meltshop - 2 Ladle Dryers each 5 MMBtu/hr, 5 Tundish Preheaters each 6 MMBtu/hr, 2 Tundish Dryout Stations each 3 MMBtu/hr, 8 Tundish Nozzle Preheaters each 0.8 MMBtu/hr, 1 Tundish Dryout Station, 2 Mandrel Dryers each 1.5 MMBtu/hr 2 Ladle Warmers each 3 MMBtu/hr	LDS #1, LDS #1a, TP1-TP5, TD #1, TD #2, TNP #1-#8, TD #3, MD#1, MD#2, LWB #1, LWB #2	63.8	547.9	0.52	2.08	2.08	0.16	27.40	1.51	23.01	1.37E-04	0.52
D.31 - Steel Technologies Operations - 6 air heaters, 4 cleaner burners, 2 comfort heaters (0.8 MMBtu/hr), 1 comfort heater (0.1 MMBtu/hr), 1 comfort heater (0.08 MMBtu/hr), 2 comfort heaters (1.0 MMBtu/hr)	none	24.6	211.1	0.20	0.80	0.80	0.06	10.55	0.58	8.87	5.28E-05	0.20
A.5 - Quality Control Furnace	Cold Mill Quality Control Furnace	0.7	5.8	0.01	0.02	0.02	0.00	0.29	0.02	0.24	1.44E-06	0.01
TOTAL		**600.6**	**5158.4**	**4.86**	**19.44**	**19.44**	**1.55**	**258.21**	**14.20**	**216.89**	**1.29E-03**	**4.87**

Appendix A: Emission Calculations
Combustion Emissions

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

				Limited Potential To Emit (tons/year)								
Emission Unit ID	Unit ID	Heat Input Capacity (MMBtu/hour)	Potential Throughput (MMCF/year)	PM	PM10	direct PM2.5*	SO_2	NO_X	VOC	CO	Lead	HAPs
D.2 - Castrip Boiler	Low-Nox Boiler	71.0	610.1	2.36	2.36	2.32	0.19	10.89	0.81	18.98	1.53E-04	0.58
D.8 - Linde Gases Boilers (N.G. and Propane fired)	No.1	7.0	60.1	0.06	0.23	0.23	0.02	3.01	0.17	2.52	1.50E-05	0.06
	No.2	15.0	128.8	0.12	0.49	0.49	0.04	6.44	0.35	5.41	3.22E-05	0.12
	Hydrogen Plant Boiler	10.0	85.7	0.08	0.33	0.33	0.03	4.29	0.24	3.60	2.14E-05	0.08
D.16 - Cold Mill Boiler	CMB#1	34.0	292.0	0.44	0.44	1.11	0.09	29.20	0.41	5.11	7.30E-05	0.28
D.19 - 19 annealing furnaces each 4.8 MMBtu/hr	EU-03 and AN-19	91.2	783.2	0.74	2.98	2.98	0.23	42.22	2.15	33.52	1.96E-04	0.74
D.21 - Acid Regen 2 Burners each 5.6 MMBtu/hr	EU-04	5.6	48.1		See Note		0.01	2.45	1.35	2.06	1.20E-05	0.05
D.22 - Cold Mill - 1 Auxiliary Alkaline Cleaning Burner at 3.2 MMBtu/hr, 2 Strip Dryer Burners each 1.5 MMBtu/hr, 4 Pot Roll Burners each 0.052 MMBtu/hr, 2 Zinc Pot Emergency Burners each 0.58 MMBtu/hr and 2 Preheat Open End Burners each 0.013 MMBtu/hr	none	6.4	55.3	0.05	0.21	0.21	0.02	2.76	0.15	2.32	1.38E-05	0.05
D.25 - Tunnel Furnaces 1 and 2 each 84 MMBtu/hr	EU-02	168.0	1442.8	1.37	5.48	5.48	0.43	72.14	3.97	60.60	3.61E-04	1.36
D.25 - Shuttle Furnaces 1 and 2 each 13 MMBtu/hr, Snub Furnace at 6 MMBtu/hr	EU-02	32.0	274.8	0.26	1.04	1.04	0.08	13.74	0.76	11.54	6.87E-05	0.26
D.29 - Meltshop - 7 Ladle Preheaters LP #1a - LP #6a, LD-1. LP #1a - LP #5a and LD-1 each at 10 MMBtu/hr, LP #6 at 12 MMBtu/hr	LP #1a - LP #6a, LD-1	72.0	618.4	0.59	2.35	2.35	0.19	30.92	1.70	25.97	1.55E-04	0.58
D.29 - Meltshop - 2 Ladle Dryers each 5 MMBtu/hr, 5 Tundish Preheaters each 6 MMBtu/hr, 2 Tundish Dryout Stations each 3 MMBtu/hr, 8 Tundish Nozzle Preheaters each 0.8 MMBtu/hr, 1 Tundish Dryout Station, 2 Mandrel Dryers each 1.5 MMBtu/hr 2 Ladle Warmers each 3 MMBtu/hr (see note 4)	LDS #1, LDS #1a, TP1-TP5, TD #1, TD #2, TNP #1-#4, TD #3, MD#1, MD#2, LWB #1, LWB #2	75.8	651.0	0.62	2.47	2.47	0.20	32.55	1.79	27.34	1.63E-04	0.61
D.31 - Steel Technologies Operations - 6 air heaters, 4 cleaner burners, 2 comfort heaters (0.8 MMBtu/hr), 1 comfort heater (0.1 MMBtu/hr), 1 comfort heater (0.08 MMBtu/hr), 2 comfort heaters (1.0 MMBtu/hr)	none	24.6	211.1	0.20	0.80	0.80	0.06	10.55	0.58	8.87	5.28E-05	0.20
A.5 - Quality Control Furnace	Cold Mill Quality Control Furnace	0.7	5.8	0.01	0.02	0.02	1.73E-03	0.29	0.02	0.24	1.44E-06	0.01
TOTAL		**612.6**	**5261.4**	**6.90**	**19.21**	**19.83**	**1.58**	**261.44**	**14.44**	**208.09**	**1.32E-03**	**4.97**

Notes:
1. All PTE calculations are based on the Emission Factors or PSD BACT Limits row above, unless the operation has different PSD Limits shown row by row.
2. All PM/PM10/PM2.5 emissions for acid regeneration are included in the process emissions.
3. Annual throughput based on permit limit.
4. Derated burner capacity of 3 MMBtu/hr, each, for Tundish Dryout Stations TD #1 and TD #2 permitted in AA 107-39585-00038. Limited PTE remains based on original burners ratings of 9 MMBtu/hr, each, from the PSD BACT analysis in SSM 107-24348-00038

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	309,503	5.9	5.7
Summed Potential Emissions in tons/yr	309,515		
CO2e Total in tons/yr	311,387		

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.
Greenhouse 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: Emission Calculations
D.5 - Injection Carbon Silo & D.11 Cooling Towers

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

D.11 - Cooling Towers

Facility	Capacity gal/min	Drift Rate Loss %	Total Dissolved Solids (TDS) Fraction	Uncontrolled / Controlled (lb/hr)		Uncontrolled / Controlled (TPY)	
				PM	PM10/PM2.5*	PM	PM10/PM2.5*
Castrip Contact	12000	0.005	0.003543	1.06	0.17	4.66	0.75
Castrip Non Contact	14,400	0.005	0.0022	0.79	0.13	3.47	0.56
Vacuum Degasser Contact	8000	0.005					
Vacuum Degasser Non Contact	8000	0.005					
Melt Shop Non Contact	60000	0.005	0.0016	2.40	0.38	10.52	1.68
Meltshop Caster Contact	5000	0.005	0.0076	0.95	0.15	4.16	0.67
Meltshop Caster Contact (expansion)	5000	0.005	0.0076	0.95	0.15	4.16	0.67
Hot Mill Non Conact	25319	0.005	0.0015	0.95	0.15	4.16	0.67
Laminar Contact	11600	0.005	0.001	0.29	0.05	1.27	0.20
Cold Mill Non Contact	10000	0.005	0.0017	0.43	0.07	1.86	0.30
Cold Mill Non Contact (expansion)	5000	0.005	0.0017	0.21	0.03	0.93	0.15
Galvanizing/Annealing Non Contact	6500	0.005	0.0015	0.24	0.04	1.07	0.17
Annealing Non Contact	5000	0.005	0.0017	0.21	0.03	0.93	0.15
LINDE Non Contact (CT-91B)	3200						
CT-91A	900	0.005	0.002	0.05	0.01	0.20	0.03
					Total	37.40	5.98

Facility	Capacity (cu ft)	Air Flow Rate (dscf/min)	Grain Loading (grain/dscf)	Integral Device PM/PM10/PM2	Uncontrolled PM/PM10/PM2.5
D. 5 - Injection Carbon Silo #1	3,625	1200	0.01	0.45	90.1

Not all information was available for each cooling tower. Therefore, calculations were not done for all cooling towers.
For Part 70 permitting level under 326 IAC 2-7-10.5 - The replaced silo is loaded by a pneumatic truck through an enclosed hose into the silo.
The silo has a bin vent that IDEM has determined to be integral to the process.
Assuming control efficiency of the bin vent filter = 99.5%
Methodology:
Cooling Tower, PTE = capacity, gal/min * water density, 8.34 lb/gal, TDS, fraction * drift rate, %/100 * ton/2000 lbs * 60 min/hr * 8760 hrs/yr
Silo, Controlled PTE = air flow rate, dscf/min * gr/dscf * 60 min/hr * 8760 hrs/yr * lb/7000 gr * ton/2000 lbs
Silo, Uncontrolled PTE = Controlled PTE/(1-control efficiency)

Assuming a linear factor of 0.16 to calculate PM10 and PM2.5 emissions from PM emissions based on the technical paper "Calculating Realistic PM10 Emissions from Cooling Towers, Joel Reisman and Gordon Frisbie, Environmental Progress (Vol 21, No 2), July 2002"

Appendix A: Emission Calculations
D.11 Hot Mill Contact Cooling Tower

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emission Source	Circulation Rate (gal/min)	Circulation Rate (gal/hr)	TDS Content (average mg/l)	Drift Loss (gal/gal of circulation)	Operating Hours (hr/yr)
Cooling Tower	25,000	1,500,000	3,000	0.001%	8760

Circulating Water TDS (lb/gal) = TDS Content (mg/l) x 2.205E-06 (lb/mg) x 3.785 (l/gal)
= 2.504E-02 (lb/gal)

Drift (gal/yr) = Circulation Rate (gal/hr) x Drift Loss (% by volume)/100 x 8,760 (hr/yr)
= 131,400 (gal/year)

PM PTE (tons/yr) = Drift (gal/yr) x Circulating Water TDS (lb/gal) / 2,000 (lb/ton)
PM10 PTE (tons/yr) = PM PTE (tons/yr) x EPRI % Mass Smaller (PM10)
PM2.5 PTE (tons/yr) = PM PTE (tons/yr) x EPRI % Mass Smaller (PM2.5)
PTE (lb/hr) = PTE (tons/yr) x 2,000 (lb/ton) / 8,760 (hr/yr)

Potential to Emit	**PM**	**PM10***	**PM2.5***	
	1.64	0.82	3.35E-03	ton/yr
	0.38	0.19	0.001	lb/hr

*See Cooling Tower Particle Size Distribution below

Note: Cooling Towers will not use VOC/HAP-containing chemicals

Cooling Tower Particle Size Distribution

EPRI Droplet Diameter (μm)	Droplet Volume (μm^3)	Droplet Mass (μg)	Particle Mass (solids) (μg)	Solid Particle Volumne (μm^3)	Solid Particle Diameter (μm)	EPRI % Mass Smaller	
10	524	5.24E-04	1.57E-06	0.71	1.11	0.00	
20	4189	4.19E-03	1.26E-05	5.71	2.22	0.20	
				Interpolation --->	**2.50**	**0.204**	% of PM is PM2.5
30	14137	1.41E-02	4.24E-05	19.28	3.33	0.23	
40	33510	3.35E-02	1.01E-04	45.70	4.44	0.51	
50	65450	6.54E-02	1.96E-04	89.25	5.54	1.82	
60	113097	1.13E-01	3.39E-04	154.22	6.65	5.70	
70	179594	1.80E-01	5.39E-04	244.90	7.76	21.35	
90	381704	3.82E-01	1.15E-03	520.50	9.98	49.81	
				Interpolation --->	**10.00**	**49.996**	% of PM is PM10
110	696910	6.97E-01	2.09E-03	950.33	12.20	70.51	
130	1150347	1.15E+00	3.45E-03	1568.65	14.42	82.02	
150	1767146	1.77E+00	5.30E-03	2409.74	16.63	88.01	
180	3053628	3.05E+00	9.16E-03	4164.04	19.96	91.03	
210	4849048	4.85E+00	1.45E-02	6612.34	23.29	92.47	
240	7238229	7.24E+00	2.17E-02	9870.31	26.61	94.09	
270	10305995	1.03E+01	3.09E-02	14053.63	29.94	94.69	
300	14137167	1.41E+01	4.24E-02	19277.95	33.27	96.29	
350	22449298	2.24E+01	6.73E-02	30612.68	38.81	97.01	
400	33510322	3.35E+01	1.01E-01	45695.89	44.36	98.34	
450	47712938	4.77E+01	1.43E-01	65063.10	49.90	99.07	
500	65449847	6.54E+01	1.96E-01	89249.79	55.45	99.07	
600	113097336	1.13E+02	3.39E-01	154223.64	66.54	100.00	

Particle Size Distribution based on approach presented in: *Calculating Realistic PM10 Emissions from Cooling Towers* Joel Reisman and Gordon Frisbie, Environmental Progress (Vol 21, No 2), July 2002

Appendix A: Emissions Calculations
LINDE Cooling Tower (2012)

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

LINDE GASES COOLING TOWER SPECIFICATIONS

Emission Source	Circulation Rate (gal/min)	Circulation Rate (gal/hr)	TDS Content (average mg/l)	Drift Loss (gal/gal of circulation)	Operating Hours (hr/yr)
New Cooling Tower	1,840	110,400	2,300	0.0050%	8760

CALCULATION OF POTENTIAL PM/PM10/PM2.5 EMISSIONS ASSOCIATED WITH THE PROPOSED COOLING TOWER

Circulating Water TDS = (CC) (TDS)

Circulating Water TDS = [(1) (2300 mg/l)] (1.0g/1000 mg) (3.785 L/gal) / (453.6 g/lb)

Circulating Water TDS = 1.919E-02 lb/gal

Drift = (DR) (CW) = (0.00005) (110400 gal/hr) (8760 hr/yr)
Drift = 48,355 gal/year

Drift Particulate = (Drift) (Circulating Water TDS)
Drift Particulate = (48355.2 gal/yr) (0.01919 lb/gal) = 928.05 lb/yr

Drift PM/PM10/PM2.5 Emission Rate = 928.05 = 0.1059 lb/hour = 0.464 tons/year

CALCULATION OF POTENTIAL VOC EMISSIONS ASSOCIATED WITH THE PROPOSED COOLING TOWER

Emission Source		Circulation Rate (gal/hour)	VOM Emission Factor (lb/10^6 gal per hour)*	VOC (tpy)
Contact Cooling Towers		110,400	0	0.00

*Cooling Towers will not use VOC/HAP-containing chemicals

Appendix A: Emission Calculations
D.7 - Slag Project ATPA

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

1. New Emissions Units

New Emissions Units (ton/yr)							
Process/Emission Unit	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_X**	**VOC**	**CO**
Coil Cutting	2.01	2.01	2.01	0.03	4.82	0.26	4.05
Blend Plant							
Blend Plant	0.70	0.29	0.09				
Blend Plant - Storage Piles	0.03	0.01	0.00				
Blend Plant Wind Erosion	2.14	1.07	0.16				
Fugitive Emissions - New Blend Plant Vehicular Traffic	8.00	2.21	0.21				
Permanent Screening Plant							
Permanent Screening Plant	0.36	0.13	0.02				

2. Existing Emissions Units

Existing Emissions Units ATPA (ton/yr)							
Process/Emission Unit	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_X**	**VOC**	**CO**
EU-10							
Projected Actual Emissions	4.55	1.76	0.41				
Baseline Actual Emissions	0.42	0.15	0.15				
ATPA	**4.13**	**1.61**	**0.25**	**0**	**0**	**0**	**0**

3. Project Emissions

Project Emissions (tpy)							
Process/Emission Unit	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_X**	**VOC**	**CO**
Sum of ATP Increases	13.24	5.73	2.50	0.03	4.82	0.26	4.05
Sum of ATPA Increases	4.13	1.61	0.25	0	0	0	0
Project Emissions	**17.37**	**7.34**	**2.75**	**0.03**	**4.82**	**0.26**	**4.05**
Significant Levels	**25**	**15**	**10**	**40**	**40**	**40**	**100**

Per the source request, the limits for SSM No. 107-29766-00038 were revised as part of T107-37553-00038.
The above tables include the revised ATPA for SSM No. 107-29766-00038 including all modifications since the issuance of SSM No. 107-29766-00038.
Note the 15 storage piles permitted under SSM No. 107-36491-00038 are not considered part of this project.

Appendix A: Emission Calculations
D.7 - Coil Cutting

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

As permitted in SSM 107-29766-00038, issued on April 4, 2011

Heat Input Capacity MMBtu/hr		Potential Throughput MMCF/yr
11.0	Section D.7 - Coil Cutter	96.4

	Pollutant			
	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.03	4.82	0.26	4.05

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Facility/Operation	Baghouse Air Flow Rate (dscf/min)	Outlet Grain Loading (grain/dscf)	Baghouse Control Efficiency (%)	Controlled PM/PM10/PM2.5 PTE (tons/yr)	Uncontrolled PM/PM10/PM2.5 PTE (tons/yr)	Limited PM/PM10/PM2.5 PTE (tons/yr)
Coil Cutting	30,000	0.0018	90%	2.03	20.27	2.01

Methodology:

PM/PM10/PM2.5 = Air flow rate, dscf/min * outlet grain loading, gr/dscf *lb/7000 gr * 60 min/hr * 8760 hrs/yr * ton/2000 lbs

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyd	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.012E-04	5.782E-05	3.614E-03	8.672E-02	1.638E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.409E-05	5.300E-05	6.745E-05	1.831E-05	1.012E-04
			Worst Single HAP (Hexane)		8.672E-02
			Combined HAPs		9.092E-02

Methodology is the same as page 1.

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

Appendix A: Emission Calculations
D.7 - EU-10 Baseline Data

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Actual Operating Hours and Production Rates from EU-10 slag Operation

	Run Time for the Month	Tons/Month	Actual throughput Tons/hour	
Mar-08	148.65	30,910.00	207.94	
Apr-08	105.00	20,985.00	199.86	
May-08	193.75	19,088.14	98.52	
Jun-08	90.50	21,701.61	239.80	
Jul-08	183.00	33,508.30	183.11	
Aug-08	142.39	28,154.65	197.73	
Sep-08	135.50	32,677.67	241.16	
Oct-08	78.70	29,607.53	376.21	
Nov-08	103.50	26,800.00	258.94	
Dec-08	73.50	27,300.00	371.43	
Jan-09	92.50	23,873.80	258.10	
Feb-09	88.25	23,316.00	264.20	
Total 2008-2009	**1435.24**	**317,922.70**	**221.51**	← average tons/hour
Mar-09	105.00	25,950.34	247.15	
Apr-09	60.50	12,021.97	198.71	
May-09	91.25	18,192.39	199.37	
Jun-09	84.00	20,310.92	241.80	
Jul-09	98.00	13,802.01	140.84	
Aug-09	129.75	17,051.06	131.41	
Sep-09	136.25	13,924.92	102.20	
Oct-09	167.25	18,215.86	108.91	
Nov-09	149.75	31,350.90	209.35	
Dec-09	149.50	24,975.64	167.06	
Jan-10	143.50	17,195.18	119.83	
Feb-10	146.25	18,768.88	128.33	
Total 2009-2010	**1461.00**	**231,760.07**	**158.63**	← average tons/hour
Average for 2 years	**1448 hours/yr**		**190 tons/hour**	

Appendix A: Emission Calculations
D.7 - EU-10 ATP

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

As permitted in SSM 107-29766-00038, issued on April 4, 2011

Section D.7 Slag Operation

ACTUAL TO POTENTIAL (ATP) TEST

Process/Facility	Maximum Throughput Rate (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor	PM2.5 Emission Factor	Uncontrolled Potential: PM Emissions (tons/yr)	Uncontrolled Potential: PM10 Emissions (tons/yr)	Uncontrolled Potential: PM2.5 Emissions (tons/yr)	Controlled Potential: PM Emissions (tons/yr)	Controlled Potential: PM10 Emissions (tons/yr)	Controlled Potential: PM2.5 Emissions (tons/yr)	AP-42
Existing Screening Process, TSP-8	447	0.0250	0.0087	0.0087	48.95	17.03	17.03	1.47	0.51	0.51	Table 11.19.2-2
EU-10 Slag Conveying drop points (#1- #24)	447	0.0030	0.0011	0.0011	140.97	51.69	51.69	4.23	1.55	1.55	Table 11.19.2-2
Cone Crusher *	447	0.0050	0.0024	0.0024	9.79	4.70	4.70	0.29	0.14	0.14	Table 11.19.2-2
TOTAL POTENTIAL EMISSION					***199.70***	***73.42***	***73.42***	***5.99***	***2.20***	***2.20***	

BASELINE ACTUAL EMISSIONS

	Throughput Rate (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor	PM2.5 Emission Factor	Baseline Actual Uncontrolled Emissions: PM Emissions (tons/yr)	Baseline Actual Uncontrolled Emissions: PM10 Emissions (tons/yr)	Baseline Actual Uncontrolled Emissions: PM2.5 Emissions (tons/yr)	Baseline Actual Controlled Emissions: PM Emissions (tons/yr)	Baseline Actual Controlled Emissions: PM10 Emissions (tons/yr)	Baseline Actual Controlled Emissions: PM2.5 Emissions (tons/yr)	**Actual Hours of Operations**
Existing Screening Process, TSP-8	190	0.0250	0.0087	0.0087	3.44	1.20	1.20	0.10	0.04	0.04	1,448
EU-10 Slag Conveying drop points (#1- #24)	190	0.0030	0.0011	0.0011	9.90	3.63	3.63	0.30	0.11	0.11	1,448
Cone Crusher *	190	0.0050	0.0024	0.0024	0.69	0.33	0.33	0.02	0.01	0.01	1,448
TOTAL BASELINE ACTUAL EMISSIONS					***14.03***	***5.16***	***5.16***	***0.42***	***0.15***	***0.15***	
PTE NET INCREASE					***185.67***	***68.26***	***68.26***	***5.57***	***2.05***	***2.05***	

Note: see detailed actual production rates and actual hours of operation on page 15 of 16 of this APP A to the TSD.
Existing 305 ton/hr screening process, TSP-8 capacity will be increased to 447 tons/hr. Downstream 25 conveying drop points will be debottlenecked from 305 tons/hr to 447 tons/hr.
All conveying drop points will assume the worst case throughput of 447 tons/hr, although there are instances when the 447 tons/hr slag material is split among 3 or 4 conveying drop points.

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

25 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

BASELINE ACTUAL EMISSIONS

	Throughput Rate (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor	PM2.5 Emission Factor	Baseline Actual Uncontrolled Emissions: PM Emissions (tons/yr)	Baseline Actual Uncontrolled Emissions: PM10 Emissions (tons/yr)	Baseline Actual Uncontrolled Emissions: PM2.5 Emissions (tons/yr)	Baseline Actual Controlled Emissions: PM Emissions (tons/yr)	Baseline Actual Controlled Emissions: PM10 Emissions (tons/yr)	Baseline Actual Controlled Emissions: PM2.5 Emissions (tons/yr)	Actual Hours of Operations	AP-42
Existing Screening Process, TSP-8	190	0.0250	0.0087	0.0087	3.44	1.20	1.20	0.10	0.04	0.04	1,448	Table 11.19.2-2
EU-10 Slag Conveying drop points (#1- #24)	190	0.0030	0.0011	0.0011	9.91	3.63	3.63	0.30	0.11	0.11	1,448	Table 11.19.2-2
Cone Crusher *	190	0.0050	0.0024	0.0024	0.69	0.33	0.33	0.02	0.01	0.01	1,448	Table 11.19.2-2
TOTAL BASELINE ACTUAL EMISSIONS					**14.04**	**5.16**	**5.16**	**0.42**	**0.15**	**0.15**		

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

Appendix A: Emission Calculations
D.7 Slag Processing EU-10

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

		Uncontrolled Emission Factor			Uncontrolled PTE			Controlled PTE			
Process/Facility	Maximum Throughput (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Front End Loader (FEL)	700	0.0088	0.0043	0.0016	26.98	13.18	4.91	0.81	0.40	0.15	Table 12.5-4
Grizzly hopper w/ vibratory feeder (Grizzly)	700	0.003	0.0011	0.00031087	9.20	3.37	0.95	0.28	0.10	0.03	Table 11.19.2-2
Feeder (Syn Feeder)	1000	0.003	0.0011	0.00031087	13.14	4.82	1.36	0.39	0.14	0.04	Table 11.19.2-2
Belt conveyor (Belt Conveyor #10)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Magnetic separator (MAG #1)	100	0.003	0.0011	0.00031087	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Magnetic separator (MAG #4)	100	0.003	0.0011	0.00031087	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Magnetic separator (MAG #2)	100	0.003	0.0011	0.00031087	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Screen (TSP-2)	400	0.025	0.0087	0.000587838	43.80	15.24	1.03	1.31	0.46	0.03	Table 11.19.2-2
Belt conveyor (Belt Conveyor #9)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Magnetic separator (MAG #3)	100	0.003	0.0011	0.00031087	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Crusher (TSP-6)	430	0.0054	0.0024	0.000444444	10.17	4.52	0.84	0.31	0.14	0.03	Table 11.19.2-2
Belt conveyor (Belt Conveyor #11)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Belt conveyor (Belt Conveyor #8)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conv #7)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Screen (TSP-8)	600	0.025	0.0087	0.000587838	65.70	22.86	1.54	1.97	0.69	0.05	Table 11.19.2-2
4 Shutes (F, G, H, I)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (LG Conv #4)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Magnetic separator (MAG #6)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Radial stacker (Radial Stacker #S4)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Cone Crusher (Cone Crusher)	600	0.005	0.0024	0.00044	14.19	6.31	1.17	0.43	0.19	0.04	Table 11.19.2-2
Conveyor (Conv #2B)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conv #2A)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (LG Conv #5)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Magnetic separator (MAG #7)	100	0.003	0.0011	0.00031087	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Radial stacker (Radial Stacker #S5)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conv #2)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Magnetic separator (MAG #5)	100	0.003	0.0011	0.00031087	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Radial stacker (Radial Stacker #S1)	600	0.003	0.0011	0.00031087	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
TOTAL					**275.16**	**104.03**	**21.33**	**8.25**	**3.12**	**0.64**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Control Efficiency)

Appendix A: Emission Calculations
D.7 Slag Processing EU-10 Limited Emissions

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

				Uncontrolled Emission Factor			Controlled Emission Factor			Uncontrolled PTE			Controlled PTE			
	Process/Facility	Maximum Throughput (tons/hr)	Limited Throughput (tons/yr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
	Front End Loader (FEL)	700		0.0088	0.0043	0.0016	2.64E-04	1.29E-04	4.80E-05	26.98	13.18	4.91	0.81	0.40	0.15	Table 12.5-4
	Grizzly hopper w/ vibratory feeder (Grizzly)	700		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	9.20	3.37	0.95	0.28	0.10	0.03	Table 11.19.2-2
	Feeder (Syn Feeder)	1000		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	13.14	4.82	1.36	0.39	0.14	0.04	Table 11.19.2-2
	Belt conveyor (Belt Conveyor #10)	600		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
	Magnetic separator (MAG #1)	100		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	1.31	0.48	0.14	0.04	0.01	4.08E-03	Table 11.19.2-2
Loop 1 - Bottlenecked by limited throughput to TSP-2.	Magnetic separator (MAG #4)	100		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	1.31	0.48	0.14	0.04	0.01	4.08E-03	Table 11.19.2-2
	Magnetic separator (MAG #2)	100		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	1.31	0.48	0.14	0.04	0.01	4.08E-03	Table 11.19.2-2
	Screen (TSP-2)		2,000,000	0.025	0.0087	0.000587838	7.50E-04	2.61E-04	1.76E-05	25.00	8.70	0.59	0.75	0.26	0.02	Table 11.19.2-2
	Belt conveyor (Belt Conveyor #9)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
	Magnetic separator (MAG #3)	100		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	1.31	0.48	0.14	0.04	0.01	4.08E-03	Table 11.19.2-2
	Crusher (TSP-6)		2,000,000	0.0054	0.0024	0.000444444	1.62E-04	7.20E-05	1.33E-05	5.40	2.40	0.44	0.16	0.07	0.01	Table 11.19.2-2
	Belt conveyor (Belt Conveyor #11)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
	Belt conveyor (Belt Conveyor #8)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
All material passes through these and goes to either Loop 2 or Route 1, or 2.	Conveyor (Conv #7)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
	Screen (TSP-8)		2,000,000	0.025	0.0087	0.000587838	7.50E-04	2.61E-04	1.76E-05	25.00	8.70	0.59	0.75	0.26	0.02	Table 11.19.2-2
	4 Shutes (F, G, H, I)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
Loop 2 - Bottlenecked by the limited throughput of TSP-8. The worst case is to assume 100% of material from TSP-8 goes through this loop.	Conveyor (LG Conv #4)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
	Magnetic separator (MAG #6)	100		0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	1.31	0.48	0.14	0.04	0.01	4.08E-03	Table 11.19.2-2
	Radial stacker (Radial Stacker #S4)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
	Cone Crusher (Cone Crusher)		2,000,000	0.005	0.0024	0.00044	1.62E-04	7.20E-05	1.33E-05	5.40	2.40	0.44	0.16	0.07	0.01	Table 11.19.2-2
	Conveyor (Conv #2B)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
	Conveyor (Conv #2A)		2,000,000	0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	3.00	1.10	0.31	0.09	0.03	0.01	Table 11.19.2-2
Route 1 - Bottlenecked by the limited throughput of TSP-8.	Conveyor (LG Conv #5)			0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	0.00	0.00	0.00	0.00	0.00	0.00	Table 11.19.2-2
	Magnetic separator (MAG #7)			0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	0.00	0.00	0.00	0.00	0.00	0.00	Table 11.19.2-2
	Radial stacker (Radial Stacker #S5)			0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	0.00	0.00	0.00	0.00	0.00	0.00	Table 11.19.2-2
Route 2 - Bottlenecked by the limited throughput of TSP-8.	Conveyor (Conv #2)			0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	0.00	0.00	0.00	0.00	0.00	0.00	Table 11.19.2-2
	Magnetic separator (MAG #5)			0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	0.00	0.00	0.00	0.00	0.00	0.00	Table 11.19.2-2
	Radial stacker (Radial Stacker #S1)			0.003	0.0011	0.00031087	9.00E-05	3.30E-05	9.33E-06	0.00	0.00	0.00	0.00	0.00	0.00	Table 11.19.2-2
	TOTAL									**151.57**	**58.77**	**13.58**	**4.55**	**1.76**	**0.41**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Controlled EF (lb/ton) = Uncontrolled EF (lb/ton) x (1 - Control Efficiency (%))
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Uncontrolled PTE (tons/yr) = Limited throughput (tons/yr) x Uncontrolled Emission Factor (lb/ton) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Maximum throughput (tons/hr) x Controlled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Limited throughput (tons/yr) x Controlled Emission Factor (lb/ton) / 2000 (lb/ton)

Appendix A: Emission Calculations
D.7 Slag Processing EU-10 (2)

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

		Uncontrolled Emission Factor			Uncontrolled PTE			Controlled PTE			
Process/Facility	Maximum Throughput (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Screen (15" slanted Grizzly)	400	0.025	0.0087	0.000588	43.80	15.24	1.03	1.31	0.46	0.03	Table 11.19.2-2
Screen (12" slanted Grizzly)	400	0.025	0.0087	0.000588	43.80	15.24	1.03	1.31	0.46	0.03	Table 11.19.2-2
Screen (3" slanted Grizzly)	400	0.025	0.0087	0.000588	43.80	15.24	1.03	1.31	0.46	0.03	Table 11.19.2-2
Drop Ball (DB#1)	20	0.005	0.0024	0.00044	0.47	0.21	0.04	0.01	0.01	1.17E-03	Table 11.19.2-2
Drop Ball (DB#2)	20	0.005	0.0024	0.00044	0.47	0.21	0.04	0.01	0.01	1.17E-03	Table 11.19.2-2
TOTAL					**132.35**	**46.15**	**3.17**	**3.97**	**1.38**	**0.10**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Control Efficiency)

Appendix A: Emission Calculations
D.7 Blend Plant

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

		Uncontrolled Emission Factor			UNCONTROLLED PTE (TONS/YEAR) Uncontrolled PTE			CONTROLLED PTE (TONS/YEAR) Controlled PTE			
Process/Facility	Maximum Throughput (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Front End Loader (BP-FEL-1)	600	0.0088	0.0043	0.0016	23.13	11.30	4.20	0.69	0.34	0.13	Table 12.5-4
Hoppers (#1 - #4)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conv #12)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Stacker conveyor (Stacker #S6)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conv #13)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conv #13A)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Magnetic separator (MAG #9)	100	0.003	0.0011	0.000311	1.31	0.48	0.14	0.04	0.01	0.00	Table 11.19.2-2
Crusher (BP Crusher)	600	0.005	0.0024	0.00044	14.19	6.31	1.17	0.43	0.19	0.04	Table 11.19.2-2
TOTAL					**78.05**	**32.54**	**9.59**	**2.34**	**0.98**	**0.29**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Control Efficiency)

			Uncontrolled Emission Factor			Controlled Emission Factor			UNCONTROLLED PTE (TONS/YEAR) Uncontrolled PTE			CONTROLLED PTE (TONS/YEAR) Controlled PTE			
Process/Facility	Maximum Throughput (tons/hr)	Limited Throughput (tons/yr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Front End Loader (BP-FEL-1)		1,500,000	0.0088	0.0043	0.0016	2.64E-04	1.29E-04	4.80E-05	6.60	3.23	1.20	0.20	0.10	0.04	Table 12.5-4
Hoppers (#1 - #4)		1,500,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	2.25	0.83	0.23	0.07	0.02	0.01	Table 11.19.2-2
Conveyor (Conv #12)		1,500,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	2.25	0.83	0.23	0.07	0.02	0.01	Table 11.19.2-2
Stacker conveyor (Stacker #S6)		1,500,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	2.25	0.83	0.23	0.07	0.02	0.01	Table 11.19.2-2
Conveyor (Conv #13)		1,500,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	2.25	0.83	0.23	0.07	0.02	0.01	Table 11.19.2-2
Conveyor (Conv #13A)		1,500,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	2.25	0.83	0.23	0.07	0.02	0.01	Table 11.19.2-2
Magnetic separator (MAG #9)	100		0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	1.31	0.48	0.14	0.04	0.01	4.08E-03	Table 11.19.2-2
Crusher (BP Crusher)		1,500,000	0.005	0.0024	0.00044	1.62E-04	7.20E-05	1.33E-05	4.05	1.80	0.33	0.12	0.05	0.01	Table 11.19.2-2
TOTAL									**23.21**	**9.63**	**2.84**	**0.70**	**0.29**	**0.09**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Controlled EF (lb/ton) = Uncontrolled EF (lb/ton) x (1 - Control Efficiency (%))
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Maximum throughput (tons/hr) x Controlled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Limited throughput (tons/yr) x Controlled Emission Factor (lb/ton) / 2000 (lb/ton)

Appendix A: Emission Calculations
D.7 Blend Plant - 50 Storage Piles Loading / Unloading

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

As permitted in SSM 107-29766-00038, issued on April 4, 2011

		SECTION D.7 - BLEND PLANT FUGITIVE EMISSIONS FROM SLAG HANDLING - Load-in and Load-out Slag to 50 Slag Storage Open Piles, SS-1												
		EMISSION FACTORS							POTENTIAL TO EMIT					
		UNCONTROLLED			CONTROLLED				UNCONTROLLED			CONTROLLED		
Description	**m**	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 -EF (lbs/ton)	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 -EF (lbs/ton)	PROD.* (ton/year)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)
New Blend Plant Slag Open Piles	1.50	0.003542	0.001675	0.000254	0.000106	0.000050	0.000008	500,000	0.89	0.42	0.06	0.03	0.01	0.002

PROD* - is based upon 250,000 tons/yr of slag loaded into 50 slag storage piles + 250,000 tons/yr loaded out from the storage piles.

1) Reference AP-42, 13.2.4.3, Eq 1, 1/95.

EF=k*(0.0032)*((u/5)^1.3)/((m/2)^1.4)
(batch and continuous loading)

Varb.	**Value**	**Units**	**Comments**
k	0.74		Particle Size multiplier < 30 um (AP-42, Table 13.2.4.3, 11/96)
k'	0.35		Particle Size multiplier < 10 um (AP-42, Table 13.2.4.3, 11/96)
k^2	0.053		Particle Size multiplier < 2.5 um (AP-42, Table 13.2.4.3, 11/96)
u	5	MPH	mean wind speed, meters per second (m/s) (miles per hour [mph])
m	1.50	%	Unprocessed Material Moisture Content of Slag Stockpiles (Submitted by Nucor)

2) Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

PTE tons/year = {EF (lbs/ton) X Prod. (tons/yr)} / (2000 lbs/ 1 ton)

Appendix A: Emission Calculations
D.7 Blend Plant - 50 Storage Piles Wind Erosion

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

WIND EROSION FROM 50 SLAG STORAGE OPEN PILES

Nucor will have 50 slag piles. Each pile will be square-shaped with a side of approximately 66 feet (20.12 m) and a height of 8 feet (2.44 m).
Wind erosion was calculated according to the procedure in AP-42, Section 13.2.5, Industrial Wind Erosion.

Step 1:
The threshold friction velocity is taken from AP-42, Table 13.2.5-2, page 13.2.5-5.
The threshold velocity for overburden (crushed stone) is 1.02 m/s.

Step 2:
The slag piles are assumed to closely resemble Pile "A" in AP-42, Figure 13.2.5-2, page 13.2.5-7. Pile "A" is divided into 3 areas in Figure 13.2.5-3, page 13.2.5-10 as follows:

Area A: = $\frac{(u_s)}{u_r}$ = 0.9, 12% of pile surface area

Area B: = $\frac{(u_s)}{u_r}$ = 0.6, 48% of pile surface area

Area C: = $\frac{(u_s)}{u_r}$ 0.2, 40% of pile surface area

where: u_s = surface wind speed and u_r = approach wind speed

Area A is assumed to be the only disturbed area of the pile. This area will be disturbed every other day; therefore N = 183 where N = number of disturbances per year.

Step 3:
The maximum 2-minute wind speed at the Indianapolis, IN National Weather Service station in 2009 was 60 mph. The anemometer height is 20 ft. This must be corrected to 10 m (32.8 ft). Equation 5 from AP-42, page 13.2.5-6:

$$u_{10}^{+} = u^{+} \frac{\ln(10/0.005)}{\ln(z/0.005)}$$

Where: U^{+}_{10} = fastest mile value correct for 10-m anemometer height
u^{+} = fastest mile value at actual anemometer height (60 mph)
z = anemometer height (20 ft = 6.096 m)

Therefore, $U^{+}_{10} = \frac{60 \ln(10/0.005)}{\ln(6.096/0.005)}$ = 64.18 mph

Step 4:
The surface wind speed distribution is calculated using Equation 6 from AP-42, page 13.2.5-6:

$$u_s^{+} = \frac{(u_s)}{u_r} u_{10}^{+}$$

Where: U^{+}_{s} = surface wind speed distribution in m/s
$\frac{(u_s)}{u_r}$ = ratio of surface wind speed to approach wind speed (see Step 2)
U^{+}_{10} = fastest mile value corrected for 10-m anemometer height (see Step 3)

Therefore, = (0.9)(64.18)(0.44704) = 25.82 m/s.

The surface friction velocity is then calculated using Equation 7 from AP-42, page 13.2.5-8:

$$u^{*} = \frac{0.4u_s^{+}}{\frac{25}{\ln 0.5}} = 0.10u_s^{+}$$

Where: u* = surface friction velocity in m/s
U^{+}_{s} = surface wind speed distribution in m/s

Therefore, U^{*}_{s} = 0.10(25.82) = 2.582 m/s. Since Area A is the only disturbed area on the pile, this is the only surface friction velocity necessary.

Step 5:
The size of Area A is calculated as follows:

A = ∏rl × 12%

Therefore, the surface area of Area A is A = ∏(10.06)(10.35)(12%) = 39.23 m2.

Step 6:
The erosion potential is calculated using Equation 3, AP-42, page 13.2.5-3:

$$P = 58(u^{*} - u_t^{*})^2 + 25(u^{*} - u_t^{*})$$

P = 0 for $u^* \le u^*_t$
u* = surface friction velocity in m/s
= threshold friction velocity in m/s

Therefore, for Area A, the erosion potential is P = 58(2.582 - 1.02)2 + 25(2.582 - 1.02)
= 180.59 g/m2.

Step 7:
Particulate matter (PM) emissions are calculated by multiplying the erosion potential P by the surface area of Area A.

Uncontrolled PM = (39.23 m2)(180.59 g/m2) = 7,084.5 g/day
Controlled PM = (39.23 m2)(180.59 g/m2)(1 - 90%) = 708.5 g/day
Multiply PM emissions by N to determine annual emissions:
Uncontrolled **PM** = 7,084.5 g/day * N = (7,084.5)183 = 1,296,463.5 g/year
*lb/453.5 grams * ton/2000 lbs * 50 piles = 71.47 tons/yr
Controlled **PM** = 71. 5 tons/yr *(1-97%) = 2.14 tons/yr

From AP-42, page 13.2.5-3, calculate PM10 emissions using particle size multiplier k = 0.5:

Uncontrolled **PM10** = k(PM) = 0.5 * (71.5 tons/year) = 35.73 tons/yr
Controlled **PM10**= 0.5 * (2.15 tons/yr) = 1.07 tons/yr

From AP-42, page 13.2.5-3, calculate PM2.5 emissions using particle size multiplier k = 0.075:

Uncontrolled **PM2.5** = k(PM) = 0.075 * (71.5 tons/year) = 5.36 tons/yr
Controlled **PM2.5** = 0.075 * (2.15 tons/year) = 0.16 ton/yr

Appendix A: Emission Calculations
D.7 Blend Plant - Roads

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

FUGITIVE PARTICULATE EMISSIONS FROM THE NEW BLENDING PLANT VEHICULAR TRAFFIC

1. Emission Factors: AP-42

Using AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM,PM10 and PM2.5 emission factors for unpaved road: can be estimated from the following equation:

$$E = k \times (s/12)^{a} \times (w/3)^{b}$$

where:

E =	emission factor (lb/vehicle mile traveled)		
s =	surface material silt content (%) =	6.0	(%) (AP-42, Table 13.2.2-1)
w =	mean vehicle weight (tons) =	39.0	tons Front -end loaders
		29.0	tons customer haul trucks
		58.0	tons slag haul trucks
a =	empirical constant =	0.7	PM
		0.9	PM and PM10
b =	empirical constant =	0.45	PM, PM10 and PM2.5
k (lb/VMT) =	empirical constant =	4.9	PM
		1.5	PM10 a
		0.15	PM2.5
VMT	vehicle mile travelled	7,531	front end loaders
		4,889	customer haul trucks
		4,123	slag haul trucks

Front End Loaders:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (39/3)^ 0.45 =	**9.60**	lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (39/3)^ 0.45 = 2.55 lbs/mile	**2.55**	lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (39/3)^ 0.45 =	**0.25**	lb/mile

Customer Haul Trucks:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (29/3)^ 0.45 =	**8.30**	lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (29/3)^ 0.45 = 2.23 lbs/mile	**2.55**	lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (29/3)^ 0.45 =	**0.22**	lb/mile

Slag Haul Trucks:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (58/3)^ 0.45 =	**11.43**	lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (58/3)^ 0.45 = 2.23 lbs/mile	**3.05**	lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (58/3)^ 0.45 =	**0.30**	lb/mile

2. Potential to Emit (PTE) of PM, PM10 and PM2.5 Before Control from Paved Roads:

		UNCONTROLLED PTE			**CONTROLLED PTE**		
Vehicle Type	**Vehicle Mile Traveled (VMT) (miles/yr)**	**PM tons/yr**	**PM10 tons/yr**	**PM2.5 tons/yr**	**PM tons/yr**	**PM10 tons/yr**	**PM2.5 tons/yr**
Front End Loader	7,531	36.15	9.60	0.94	3.6	1.0	0.09
Customer Haul Trucks	4,889	20.29	6.23	0.55	2.0	0.6	0.05
Slag Haul Trucks	4,123	23.56	6.29	0.62	2.4	0.6	0.06
Total		**80.00**	**22.12**	**2.10**	**8.0**	**2.21**	**0.21**

Fugitive Dust Control Plan requires fugitive dust control	97%	from storage piles and slag processing operations.
	90%	from unpaved roadways and travelled open areas.

Methodology:
PTE, tons/yr = Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs

Appendix A: Emission Calculations
D.7 Blend Plant - 15 Storage Piles Wind Erosion

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

WIND EROSION FROM 15 SLAG STORAGE OPEN PILES

Nucor will have 65 slag piles total. This sheet is for the 15 new piles (107-36491-00038). Each pile will be square-shaped with a side of approximately 66 feet (20.12 m) and a height of 8 feet (2.44 m).
Wind erosion was calculated according to the procedure in AP-42, Section 13.2.5, Industrial Wind Erosion.

Step 1:
The threshold friction velocity is taken from AP-42, Table 13.2.5-2, page 13.2.5-5.
The threshold velocity for overburden (crushed stone) is 1.02 m/s.

Step 2:
The slag piles are assumed to closely resemble Pile "A" in AP-42, Figure 13.2.5-2, page 13.2.5-7. Pile "A" is divided into 3 areas in Figure 13.2.5-3, page 13.2.5-10 as follows:

Area A: $= \frac{(u_s)}{u_r} = 0.9$, 12% of pile surface area

Area B: $= \frac{(u_s)}{u_r} = 0.6$, 48% of pile surface area

Area C: $= \frac{(u_s)}{u_r}$ 0.2, 40% of pile surface area

where: u_s = surface wind speed and u_r = approach wind speed

Area A is assumed to be the only disturbed area of the pile. This area will be disturbed every other day; therefore N = 183 where N = number of disturbances per year.

Step 3:
The maximum 2-minute wind speed at the Indianapolis, IN National Weather Service station in 2009 was 60 mph. The anemometer height is 20 ft. This must be corrected to 10 m (32.8 ft). Equation 5 from AP-42, page 13.2.5-6:

Where: U^+_{10} = fastest mile value correct for 10-m anemometer height
u^+ = fastest mile value at actual anemometer height (60 mph)
z = anemometer height (20 ft = 6.096 m)

Therefore, $U^+_{10} = \frac{60 \ln(10/0.005)}{\ln(6.096/0.005)} = 64.18$ mph

Step 4:
The surface wind speed distribution is calculated using Equation 6 from AP-42, page 13.2.5-6:

Where: U^+_s = surface wind speed distribution in m/s
$\frac{(u_s)}{u_r}$ = ratio of surface wind speed to approach wind speed (see Step 2)
U^+_{10} = fastest mile value corrected for 10-m anemometer height (see Step 3)

Therefore, = (0.9)(64.18)(0.44704) = 25.82 m/s.

The surface friction velocity is then calculated using Equation 7 from AP-42, page 13.2.5-8:

Where: u* = surface friction velocity in m/s
U^+_s = surface wind speed distribution in m/s

Therefore, U^+_s = 0.10(25.82) = 2.582 m/s. Since Area A is the only disturbed area on the pile, this is the only surface friction velocity necessary.

Step 5:
The size of Area A is calculated as follows:

A = ∏rl × 12%

Therefore, the surface area of Area A is A = ∏(10.06)(10.35)(12%) = 39.23 m2.

Step 6:
The erosion potential is calculated using Equation 3, AP-42, page 13.2.5-3:

P = 0 for $u^* \leq u^*_t$
u* = surface friction velocity in m/s
= threshold friction velocity in m/s

Therefore, for Area A, the erosion potential is P = 58(2.582 - 1.02)2 + 25(2.582 - 1.02)
= 180.59 g/m2.

Step 7:
Particulate matter (PM) emissions are calculated by multiplying the erosion potential P by the surface area of Area A.

Uncontrolled PM = (39.23 m2)(180.59 g/m2) = 7,084.5 g/day
Controlled PM = (39.23 m2)(180.59 g/m2)(1 - 90%) = 708.5 g/day
Multiply PM emissions by N to determine annual emissions:
Uncontrolled **PM** = 7,084.5 g/day * N = (7,084.5)183 = 1,296,463.5 g/year
*lb/453.5 grams * ton/2000 lbs * 15 piles = 21.44 tons/yr
Controlled **PM** = 71. 5 tons/yr *(1-97%) = **0.64** tons/yr

From AP-42, page 13.2.5-3, calculate PM10 emissions using particle size multiplier k = 0.5:

Uncontrolled **PM10** = k(PM) = 0.5 * (21.44 tons/year) = 10.72 tons/yr
Controlled **PM10**= 0.5 * (0.64 tons/yr) = **0.32** tons/yr

From AP-42, page 13.2.5-3, calculate PM2.5 emissions using particle size multiplier k = 0.075:

Uncontrolled **PM2.5** = k(PM) = 0.075 * (21.44 tons/year) = 1.61 tons/yr
Controlled **PM2.5** = 0.075 * (0.64 tons/year) = **0.05** ton/yr

Appendix :dix A: Emission Calculations
D.7 Blend Plant - 15 Storage Piles

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Permitted in SSM No.: 107-36491-00038, these piles are not part of the 2011 project.

NEW BLEND PLANT FUGITIVE EMISSIONS FROM SLAG HANDLING - Load-in and Load-out Slag to 15 Slag Storage Open Piles, SS-1

		EMISSION FACTORS							POTENTIAL TO EMIT					
		UNCONTROLLED			CONTROLLED				UNCONTROLLED			CONTROLLED		
Description	**m**	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 - EF (lbs/ton)	PM EF (lbs/ton)	PM10 -EF (lbs/ton)	PM2.5 - EF (lbs/ton)	PROD.* (ton/year)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)
15 slag storage piles	1.50	0.003542	0.001675	0.000254	0.000106	0.000050	0.000008	600,000	1.06	0.50	0.08	0.0319	0.0151	0.0023

PROD* - is based upon 300,000 tons/yr of slag loaded into 15 slag storage piles + 300,000 tons/yr loaded out from the storage piles.

1) Reference AP-42, 13.2.4.3, Eq 1, 1/95.

EF=k*(0.0032)*((u/5)^1.3)/((r
(batch and continuous loadin

Varb.	**Value**	**Units**	**Comments**
k	0.74		Particle Size multiplier < 30 um (AP-42, Table 13.2.4.3, 11/96)
k'	0.35		Particle Size multiplier < 10 um (AP-42, Table 13.2.4.3, 11/96)
k^2	0.053		Particle Size multiplier < 2.5 um (AP-42, Table 13.2.4.3, 11/96)
u	5	MPH	mean wind speed, meters per second (m/s) (miles per hour [mph])
m	1.50	%	Unprocessed Material Moisture Content of Slag Stockpiles (Submitted by Nucor)

2) Fugitive Dust Control Plar 97% from storage piles and slag processing operations.
90% from unpaved roadways and travelled open areas.

PTE tons/year = {EF (lbs/ton) X Prod. (tons/yr)} / (2000 lbs/ 1 ton)

Appendix A: Emission Calculations
D.7 Permanent Screening Plant

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

					UNCONTROLLED PTE (TONS/YEAR)			CONTROLLED PTE (TONS/YEAR)			
		Uncontrolled Emission Factor			Uncontrolled PTE			Controlled PTE			
Process/Facility	Maximum Throughput (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Front End Loader	300	0.0088	0.0043	0.0016	11.56	5.65	2.10	0.35	0.17	0.06	Table 12.5-4
Feed hopper (Feed Hopper)	300	0.003	0.0011	0.000311	3.94	1.45	0.41	0.12	0.04	0.01	Table 11.19.2-2
Conveyor (Conveyor #14)	300	0.003	0.0011	0.000311	3.94	1.45	0.41	0.12	0.04	0.01	Table 11.19.2-2
Conveyor (Conveyor #15)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conveyor #16)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Conveyor (Conveyor #17)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Double Decker Screen (PS1)	300	0.025	0.0087	0.000588	32.85	11.43	0.77	0.99	0.34	0.02	Table 11.19.2-2
Double Decker Screen (PS2)	300	0.025	0.0087	0.000588	32.85	11.43	0.77	0.99	0.34	0.02	Table 11.19.2-2
Radial stacker conveyor (Radial Stacker #S7)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
Radial stacker conveyor (Radial Stacker #S8)	600	0.003	0.0011	0.000311	7.88	2.89	0.82	0.24	0.09	0.02	Table 11.19.2-2
TOTAL					**124.57**	**45.86**	**8.55**	**3.74**	**1.38**	**0.26**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Control Efficiency)

Appendix A: Emission Calculations
D.7 Permanent Screening Plant

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

								UNCONTROLLED PTE (TONS/YEAR)			CONTROLLED PTE (TONS/YEAR)			
		Uncontrolled Emission Factor			Controlled Emission Factor			Uncontrolled PTE			Controlled PTE			
Process/Facility	Limited Throughput (tons/yr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Front End Loader	300,000	0.0088	0.0043	0.0016	2.64E-04	1.29E-04	4.80E-05	1.32	0.65	0.24	0.04	0.02	0.01	Table 12.5-4
Feed hopper (Feed Hopper)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
Conveyor (Conveyor #14)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
Conveyor (Conveyor #15)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
Conveyor (Conveyor #16)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
Conveyor (Conveyor #17)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
Double Decker Screen (PS1)	300,000	0.025	0.0087	0.000588	7.50E-04	2.61E-04	1.76E-05	3.75	1.31	0.09	0.11	0.04	2.65E-03	Table 11.19.2-2
Double Decker Screen (PS2)	300,000	0.025	0.0087	0.000588	7.50E-04	2.61E-04	1.76E-05	3.75	1.31	0.09	0.11	0.04	2.65E-03	Table 11.19.2-2
Radial stacker conveyor (Radial Stacker #S7)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
Radial stacker conveyor (Radial Stacker #S8)	300,000	0.003	0.0011	0.000311	9.00E-05	3.30E-05	9.33E-06	0.45	0.17	0.05	0.01	4.95E-03	1.40E-03	Table 11.19.2-2
TOTAL								**11.97**	**4.41**	**0.74**	**0.36**	**0.13**	**0.02**	

Fugitive Dust Control Plan requires fugitive dust control = 97% from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for screening and conveying were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/y
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton) x 8760 (hr/yr) / 2000 (lb/ton)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Control Efficiency)

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
D.8 Linde Drying Bed Regeneration Unit

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
2.6	1020	22.3

	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
Potential Emission in tons/yr	2.12E-02	8.49E-02	8.49E-02	6.70E-03	1.12	6.14E-02	0.94

*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

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
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	2.34E-05	1.34E-05	8.37E-04	2.01E-02	3.80E-05	**2.10E-02**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
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	5.58E-06	1.23E-05	1.56E-05	4.24E-06	2.34E-05	**6.12E-05**
					Total HAPs	**2.11E-02**
					Worst HAP	**2.01E-02**

Methodology is the same as above.
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: Emission Calculations
D.13 - Emergency Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Emissions calculated based on output rating (hp)

GEN #3	280
GEN #5	15
GEN #6	67
GEN #7	134
Output Horsepower Rating (hp)	496.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	248,000

	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	0.27	0.27	0.27	0.25	3.84	0.31	0.83

*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	8.10E-04	3.55E-04	2.47E-04	3.39E-05	1.02E-03	6.66E-04	8.03E-05	1.46E-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)	**3.36E-03**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
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]

Appendix A: Emission Calculations
D.13 - Large Emergency Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Emissions calculated based on output rating (hp)

GEN #1	2,100
GEN #2	2,520
Output Horsepower Rating (hp)	4,620
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	2,310,000
Sulfur Content (S) of Fuel (% by weight)	0.050

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-04 *(.00809S)*	2.40E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.81	0.46	0.46	0.47	27.72	0.81	6.35

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).
**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	6.27E-03	2.27E-03	1.56E-03	6.38E-04	2.04E-04	6.37E-05	1.71E-03

***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).

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
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]

Potential Emission of Total HAPs (tons/yr)	**1.27E-02**

Appendix A: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
GEN #8

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	670.5
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	335,250
Sulfur Content (S) of Fuel (% by weight)	0.005

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr				4.05E-05			
Emission Factor in g/bhp/hr	0.15	0.15	0.15	*(.00809S)*	4.56	0.24	2.60
Potential Emission in tons/yr	0.06	0.06	0.06	0.01	1.69	0.09	0.96

Tier II Standard for NMHC+NOx = 6.4 g/bhp, assumed 95% NOx, 5% NMHC, per California Air Resource Board Policy: CARB Emission Factors for CI Diesel Engines - Percent HC in Relation to NMHC + NOx
(https://www.baaqmd.gov/~/media/Files/Engineering/policy_and_procedures/Engines/EmissionFactorsforDieselEngines.ashx)
Assumed 1 lb = 453.59237 grams
Assumed 1 kW = 1.341 HP

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	9.11E-04	3.30E-04	2.26E-04	9.26E-05	2.96E-05	9.25E-06	2.49E-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).

Methodology
Particulate, NMHC+NOx, and CO emission factors are Tier II standards for 450 ≤ kW < 560 engines manufactured after 2002.
SO_2 and HAP Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-3, and 3.4-4.
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]

Potential Emission of Total HAPs (tons/yr)	**1.85E-03**

Appendix A: Emission Calculations
Process Emissions
Acid Regeneration

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

PM/PM/PM2.5 Potential to Emit

2.0	lbs/hr[1]	x	8,760	hrs/yr	/	2,000	lbs/tons	=	8.76	tpy

[1] Based on PM/PM10 PSD BACT limit. Conservatively assume PM=PM10=PM2.5.

Appendix A: Emission Calculations
D.28 - MT #1

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Operation	Control ID	Throughput (tons/hour)	Max Amount of Dust Collected (ton/yr)	Control Efficiency	PM/PM10/PM2.5 Uncontrolled PTE (tons/yr)	PM/PM10/PM2.5 Controlled PTE (tons/yr)
MT #1	Bin Vent	150	16.7	99.7%	16.75	0.05

Methodology:
Max Amounf of Dust Collected (ton/yr) provide by source as part of MSM No. 107-16004-00038.
Uncontrolled Emissions, tons/yr = throughput, tons/hr * EF, lb/ton * 8760 hrs/yr * ton/2000 lbs
Controlled Emissions, ton/yr = Uncontrolle dEmissions * (1 - Control Efficiency (%))

Appendix A: Emission Calculations
Tundish Processing

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

				Uncontrolled Emission Factor			Controlled Emission Factor			Uncontrolled PTE			Controlled PTE			
Process/Facility	Steel/Tundish (ton)	Maximum Tundish Loads/Day	Maximum Throughput (tons/yr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)	AP-42
Tundish Transfer	10.00	6.00	21,900.00	3.00E-03	1.10E-03	3.11E-04				0.03	0.01	3.40E-03	9.86E-04	3.61E-04	1.02E-04	Table 11.19.2-2
Tundish Crushing	10.00	6.00	21,900.00	5.40E-03	2.40E-03	4.44E-04	1.20E-03	5.40E-04	1.00E-04	0.06	0.03	4.87E-03	0.01	5.91E-03	1.10E-03	Table 11.19.2-2
TOTAL										**0.09**	**0.04**	**8.27E-03**	**0.01**	**6.27E-03**	**1.20E-03**	

Fugitive Dust Control Plan requires fugitive dust control = 0.97 from storage piles and slag processing operations.

Methodology
Note: The PM2.5 emission factors for tundish transfer and curshing were estimated using AP-42 emission factors and the following methodology:
Uncontrolled PM2.5 Emission Factor (tons/yr) = Uncontrolled PM10 Emission Factor (tons/yr) / Controlled PM10 Emission Factor (ton/yr) * Controlled PM2.5 Emission Factor (tons/yr)
Uncontrolled PTE (tons/yr) = Maximum throughput (tons/yr) x Uncontrolled Emission Factor (lb/ton) / 2000 (lb/ton)
Tundish Transfer Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Control Efficiency)
Tundish Crushing Controlled PTE (tons/yr) = Controlled Emission Factor (lb/ton) x Maximum Throughput (tons/yr) / 2000 (lb/ton)

Appendix A: Emission Calculations
D.31 - Steel Technologies Operations

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

			Emissions (tpy)		
Operation	**Throughput (tons/hour)**	**Emission Factor (lb/ton)**	**PM**	**PM_{10}**	**$PM_{2.5}$**
72" Slitter Line	200	5.01E-05	0.04	0.04	0.04

Methodology:
Uncontrolled Emissions, tons/yr = throughput, tons/hr * EF, lb/ton * 8760 hrs/yr * ton/2000 lbs
Emission factor based on an engineering study on a similar slitter.

Appendix A: Emission Calculations
DRI Handling System
Uncontrolled Emissions

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

As permitted in SSM 107-30886-00038

UNCONTROLLED EMISSIONS

Point	Throughput (tons/hr)	Throughput (tons/yr)	Description	Emission Factor (lb/ton) PM	PM_{10}	$PM_{2.5}$	Capture Eff. (%)	Control Eff. (%)	Emissions (tpy) PM	PM_{10}	$PM_{2.5}$
1	400	3,504,000	Railcar Dump into Rail Unload Hopper (HP1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
2	250	2,190,000	HP1 to Vibrating Screen Feeder (VF1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
3	10	87,600	VF1 to Drag Conveyor (DC1)	0.025	0.0087	0.0087	0	0	1.10	0.38	0.38
4	10	87,600	DC1 to Hopper (HP2)	0.0024	0.0011	0.00034	0	0	0.11	0.05	0.01
5	15	131,400	HP2-Screw (SC5) to Fines Storage Bag (BS1)	0.0024	0.0011	0.00034	0	0	0.16	0.07	0.02
6	250	2,190,000	VF1 to Bucket Elevator (BE1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
7	25	219,000	BE1 to Recirculating Conveyor (SC1)	0.0024	0.0011	0.00034	0	0	0.26	0.12	0.04
8	25	219,000	SC1 to SC2	0.0024	0.0011	0.00034	0	0	0.26	0.12	0.04
9	25	219,000	SC2 to BE1	0.0024	0.0011	0.00034	0	0	0.26	0.12	0.04
10	250	2,190,000	BE1-Discharge Diverter (DV1) to Emergency Chute (CH1)	0.0024	0.0011	0.00034	0	0	2.63	1.20	0.37
11	250	2,190,000	BE1-DV1 to Belt Conveyor (BC1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
12	250	2,190,000	BC1-DV2 to BC2 *or* BC1-DV2 to Day Bin (DB1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
13	250	2,190,000	BC2 to Iron Carbide Silo (ICS1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
14	130	1,138,800	ICS1 to VF2	0.0024	0.0011	0.00034	0	0	1.37	0.63	0.19
15	4	35,040	VF2 to HP3	0.025	0.0087	0.0087	0	0	0.44	0.15	0.15
16	4	35,040	HP3-Screw (SC6) to BS2	0.0024	0.0011	0.00034	0	0	0.04	0.02	0.01
17	130	1,138,800	VF2 to BE2	0.0024	0.0011	0.00034	0	0	1.37	0.63	0.19
18	13	113,880	BE2 to SC3	0.0024	0.0011	0.00034	0	0	0.14	0.06	0.02
19	13	113,880	SC3 to SC4	0.0024	0.0011	0.00034	0	0	0.14	0.06	0.02
20	13	113,880	SC4 to BE2	0.0024	0.0011	0.00034	0	0	0.14	0.06	0.02
21	130	1,138,800	BE2-DV3 to Emergency Chute (CH2)	0.0024	0.0011	0.00034	0	0	1.37	0.63	0.19
22	130	1,138,800	BE2-DV3 to BC3	0.0024	0.0011	0.00034	0	0	1.37	0.63	0.19
23	130	1,138,800	BC3 to DB1	0.0024	0.0011	0.00034	0	0	1.37	0.63	0.19
24S-1	225	1,971,000	DB1 to Weigh Belt Feeder (WB1)	0.0024	0.0011	0.00034	0	0	2.37	1.08	0.34
24S-2	225	1,971,000	WB1 to BC4	0.0024	0.0011	0.00034	0	0	2.37	1.08	0.34
24S-3	225	1,971,000	BC4 to BC10	0.0024	0.0011	0.00034	0	0	2.37	1.08	0.34
24S-4	259	2,268,840	BC10 to EAF:South	0.0024	0.0011	0.00034	0	0	2.72	1.25	0.39
24N-1	225	1,971,000	DB1 to WB2	0.0024	0.0011	0.00034	0	0	2.37	1.08	0.34
24N-2	225	1,971,000	WB2 to BC5	0.0024	0.0011	0.00034	0	0	2.37	1.08	0.34
24N-3	225	1,971,000	BC5 to BC7	0.0024	0.0011	0.00034	0	0	2.37	1.08	0.34
24N-4	259	2,268,840	BC7 to BC9	0.0024	0.0011	0.00034	0	0	2.72	1.25	0.39
24N-5	259	2,268,840	BC9 to EAF:North	0.0024	0.0011	0.00034	0	0	2.72	1.25	0.39
								TOTAL	**34.86**	**15.81**	**5.25**

NOTES:
Emission factors for drop points are from AP-42, Chapter 12.5, Table 12.5-4, "Pile formation stacker pellet ore".
Emission factors for screening (uncontrolled) are from AP-42, Chapter 11.19.2, Table 11.19.2-2, SCC# 3-05-020-02. $PM_{2.5}$ has been assumed to be equal to PM_{10}.
[1]Equipment is no longer being used as part of the DRI Handling System but will instead now be used for the Injection Carbon Handling System.

METHODOLOGY:
Throughput (tons/yr) = Throughput (tons/hr) * 8760 hr/yr
Emissions (tpy) = Throughput (tons/yr) * Emission Factor (lb/ton) * [1 - Capture Efficiency] * [1 - Control Efficiency] ÷ 2000 lb/ton

Appendix A: Emission Calculations
DRI Handling System
Limited Emissions

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

As permitted in SSM 107-30886-00038

DRI Handling System Throughput Limit: 800,000 tpy

LIMITED EMISSIONS (UNCAPTURED/UNCONTROLLED)

	Throughput	Throughput		Emission Factor (lb/ton)			Capture Eff.	Control Eff.	Emissions (tpy)		
Point	(tons/hr)	(tons/yr)	Description	PM	PM_{10}	$PM_{2.5}$	(%)	(%)	PM	PM_{10}	$PM_{2.5*}$
1	400	800,000	Railcar Dump into Rail Unload Hopper (HP1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
2	250	800,000	HP1 to Vibrating Screen Feeder (VF1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
3	10	87,600	VF1 to Drag Conveyor (DC1)	0.025	0.0087	0.0087	0	0	1.10	0.38	0.38
4	10	87,600	DC1 to Hopper (HP2)	0.0024	0.0011	0.00034	0	0	0.11	0.05	0.01
5	10	87,600	HP2-Screw (SC5) to Fines Storage Bag (BS1)[2]	0.0024	0.0011	0.00034	0	0	0.11	0.05	0.01
6	250	800,000	VF1 to Bucket Elevator (BE1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
7	25	219,000	BE1 to Recirculating Conveyor (SC1)	0.0024	0.0011	0.00034	0	0	0.26	0.12	0.04
8	25	219,000	SC1 to SC2	0.0024	0.0011	0.00034	0	0	0.26	0.12	0.04
9	25	219,000	SC2 to BE1	0.0024	0.0011	0.00034	0	0	0.26	0.12	0.04
10	250	800,000	BE1-Discharge Diverter (DV1) to Emergency Chute (CH1)	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
11	250	800,000	BE1-DV1 to Belt Conveyor (BC1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
12	250	800,000	BC1-DV2 to BC2 *or* BC1-DV2 to Day Bin (DB1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
13	250	800,000	BC2 to Iron Carbide Silo (ICS1)[1]	0.0024	0.0011	0.00034	0	0	-	-	-
14	130	800,000	ICS1 to VF2	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
15	4	35,040	VF2 to HP3	0.025	0.0087	0.0087	0	0	0.44	0.15	0.15
16	4	35,040	HP3-Screw (SC6) to BS2	0.0024	0.0011	0.00034	0	0	0.04	0.02	0.01
17	130	800,000	VF2 to BE2	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
18	13	113,880	BE2 to SC3	0.0024	0.0011	0.00034	0	0	0.14	0.06	0.02
19	13	113,880	SC3 to SC4	0.0024	0.0011	0.00034	0	0	0.14	0.06	0.02
20	13	113,880	SC4 to BE2	0.0024	0.0011	0.00034	0	0	0.14	0.06	0.02
21	130	800,000	BE2-DV3 to Emergency Chute (CH2)	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
22	130	800,000	BE2-DV3 to BC3	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
23	130	800,000	BC3 to DB1	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
24S-1	0	0	DB1 to Weigh Belt Feeder (WB1) [*see note]	0.0024	0.0011	0.00034	0	0	0.00	0.00	0.00
24S-2	0	0	WB1 to BC4 [*see note]	0.0024	0.0011	0.00034	0	0	0.00	0.00	0.00
24S-3	0	0	BC4 to BC10 [*see note]	0.0024	0.0011	0.00034	0	0	0.00	0.00	0.00
24S-4	0	0	BC10 to EAF:South [*see note]	0.0024	0.0011	0.00034	0	0	0.00	0.00	0.00
24N-1	225	800,000	DB1 to WB2	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
24N-2	225	800,000	WB2 to BC5	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
24N-3	225	800,000	BC5 to BC7	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
24N-4	225	800,000	BC7 to BC9[3]	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
24N-5	225	800,000	BC9 to EAF:North[3]	0.0024	0.0011	0.00034	0	0	0.96	0.44	0.14
								Total	**13.54**	**6.04**	**2.23**

*Note: There are no federally enforceable PM2.5 limits in the permit for these units.

NOTES:
All throughput has been treated as going through the north system (24N-1 through 24N-5) because there is an additional drop point, which provides for higher overall emissions.
[1]Equipment is no longer being used as part of the DRI Handling System but will instead now be used for the Injection Carbon Handling System.
[2]Point 5 is bottlenecked by Point 4.
[3]Points 24N-4 and 24N-5 are bottlenecked by Points 24N-1, 24N-2, and 24N-3.

METHODOLOGY:
Throughput (tons/yr) [for throughput less than 900,000 tpy] = Throughput (tons/hr) * 8760 hr/yr
Emissions (tpy) = Throughput (tons/yr) * Emission Factor (lb/ton) * [Capture Efficiency/100] * [1 - Control Efficiency/100] ÷ 2000 lb/ton

Appendix A: Emission Calculations
DRI Handling System
Particulate Emissions

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

As permitted in SSM 107-30886-00038

Allowable Emissions (326 IAC 6-3-2)
Emission units with the following process weight rates have uncontrolled emissions less than 0.551 lb/hr.
Therefore, these emission units are exempt from 326 IAC 6-3, pursuant to 326 IAC 6-3-1(b)(14).

P (Process Weight Rate) (tons/hr)	PM EF (lb/ton)	Uncontrolled PTE (lb/hr)
10	0.025	0.250
10	0.0024	0.024
15	0.0024	0.036
25	0.0024	0.060
130	0.0024	0.312
4	0.025	0.100
4	0.0024	0.010
13	0.0024	0.031
225	0.0024	0.540

Pursuant to 326 IAC 6-3-2(e)(1): $E = 55.0\ P^{0.11} - 40$ (for process weight rates in excess of sixty thousand (60,000) pounds)

P (Process Weight Rate) (tons/hr)	PM EF (lb/ton)	Uncontrolled PTE (lb/hr)	E (Limited PTE) (lb/hr)
400	0.0024	0.960	66.3
250	0.0024	0.600	61.0
265	0.0024	0.636	61.6

All emission units with these process weight rates are capable of complying with 326 IAC 6-3-2 without the use of controls.

NOTES:
Emission factors for drop points are from AP-42, Chapter 12.5, Table 12.5-4, "Pile formation stacker pellet ore".
Emission factors for screening (uncontrolled) are from AP-42, Chapter 11.19.2, Table 11.19.2-2, SCC# 3-05-020-02, SCC# 3-05-020-06.

METHODOLOGY:
Uncontrolled PTE (lb/hr) = P (tons/hr) * PM EF (lb/ton)

Appendix A: Emission Calculations
Tundish Traffic Unpaved Roads

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

FUGITIVE PARTICULATE EMISSIONS FROM THE NEW TUNDISH PROCESSING TRAFFIC

1. Emission Factors: AP-42
Using AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM, PM10, and PM2.5 emission factors for unpaved road: can be estimated from the following equation:

$$E = k \times (s/12)^a \times (w/3)^b$$

where:

E =	emission factor (lb/vehicle mile traveled)		
s =	surface material silt content (%) =	6.0	(%) (AP-42, Table 13.2.2-1)
w =	mean vehicle weight (tons) =	58.0	tons slag haul trucks
a =	empirical constant =	0.7	PM
		0.9	PM10 and PM2.5
b =	empirical constant =	0.45	PM, PM10 and PM2.5
k (lb/VMT) =	empirical constant =	4.9	PM
		1.5	PM10 a
		0.15	PM2.5
VMT	vehicle mile travelled	4,123	slag haul trucks
		6,058	customer haul trucks

Slag/Tundish Haul Trucks:

PM Emission Factor = E * (lb/VMT) = 4.9 * (6/12)^ 0.7 * (58/3)^ 0.45 =	**11.44**	lb/mile
PM10 Emission Factor = E * (lb/VMT) = 1.5* (6/12)^ 0.9 * (58/3)^ 0.45 = 2.23 lbs/mile	**3.05**	lb/mile
PM2.5 Emission Factor = E * (lb/VMT) = 0.15* (6/12)^ 0.9 * (58/3)^ 0.45 =	**0.30**	lb/mile

2. Potential to Emit (PTE) of PM, PM10 and PM2.5 from Unpaved Roads:

		UNCONTROLLED PTE			**CONTROLLED PTE**		
Vehicle Type	**Vehicle Mile Traveled (VMT) (miles/yr)**	**PM tons/yr**	**PM10 tons/yr**	**PM2.5 tons/yr**	**PM tons/yr**	**PM10 tons/yr**	**PM2.5 tons/yr**
Existing Tundish Skull Haul Trucks	4,123	23.58	6.28	0.63	2.36	0.63	0.06
Proposed Tundish Haul Trucks	6,058	34.64	9.23	0.92	3.46	0.92	0.09
Potential Increase	**1,935**	**11.07**	**2.95**	**0.29**	**1.11**	**0.29**	**0.03**

Fugitive Dust Control Plan requires fugitive dust control = 90% from unpaved roadways and travelled open areas.

Methodology:
PTE, tons/yr = Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs
The increase in distance from the existing slag pot dump to the proposed tundish area is 2/3 mile over aggregate roads, which will result in additional 5.3 miles/day.

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Road

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Long North Unpaved Road at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Tri Axle Dump Transport (entering plant) (one-way trip)	1.0	17.2	17.2	14.0	240.8	4079	0.773	13.3	4850.0
Tri Axle Dump Transport (leaving plant) (one-way trip)	1.0	17.2	17.2	54.0	928.8	4079	0.773	13.3	4850.0
		Totals	**34.4**		**1169.6**			**26.6**	**9700.0**

Average Vehicle Weight Per Trip = 34.0 tons/trip
Average Miles Per Trip = 0.77 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	34.0	34.0	34.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	8.99	2.40	0.24	lb/mile
Mitigated Emission Factor, Eext =	5.91	1.58	0.16	lb/mile
Dust Control Efficiency =	90%	90%	90%	

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Tri Axle Dump Transport (entering plant) (one-way trip)	21.81	5.81	0.58	14.34	3.82	0.38	1.434	0.382	0.038
Tri Axle Dump Transport (leaving plant) (one-way trip)	21.81	5.81	0.58	14.34	3.82	0.38	1.434	0.382	0.038
Totals	**43.62**	**11.62**	**1.16**	**28.68**	**7.64**	**0.76**	**2.87**	**0.76**	**0.08**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr)	= (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr)	= (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr)	= (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Road

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Unpaved Road at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	1.0	1.7	1.7	1.8	3.0	475	0.090	0.2	55.8
Pick Up Truck Transport (leaving plant) (one-way trip)	1.0	1.7	1.7	2.3	3.8	475	0.090	0.2	55.8
Quad Axle Dump Transport (entering plant) (one-way trip)	1.0	6.5	6.5	15.5	100.2	475	0.090	0.6	212.3
Quad Axle Dump Transport (leaving plant) (one-way trip)	1.0	6.5	6.5	36.6	236.6	475	0.090	0.6	212.3
Semi Truck Transport (entering plant) (one-way trip)	1.0	11.0	11.0	17.5	191.8	475	0.090	1.0	359.8
Semi Truck Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	40.0	438.4	475	0.090	1.0	359.8
Single Axle Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	6.5	22.1	475	0.090	0.3	111.6
Single Axle Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	12.5	42.5	475	0.090	0.3	111.6
Tandem Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	12.9	43.8	475	0.090	0.3	111.6
Tandem Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	28.0	95.1	475	0.090	0.3	111.6
Tri Axle Transport (entering plant) (one-way trip)	1.0	11.0	11.0	14.0	153.4	475	0.090	1.0	359.8
Tri Axle Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	34.0	372.6	475	0.090	1.0	359.8
Truck with Trailer Transport (entering plant) (one-way trip)	1.0	3.4	3.4	5.5	18.7	475	0.090	0.3	111.6
Truck with Trailer Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	10.5	35.7	475	0.090	0.3	111.6
		Totals	**80.5**		**1757.7**			**7.2**	**2644.9**

Average Vehicle Weight Per Trip = 21.8 tons/trip
Average Miles Per Trip = 0.09 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	21.8	21.8	21.8	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	7.37	1.96	0.20	lb/mile
	4.84	1.29	0.13	lb/mile
Dust Control Efficiency =	90%	90%	90%	

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	0.21	0.05	0.01	0.14	0.04	0.00	0.014	0.004	0.000
Pick Up Truck Transport (leaving plant) (one-way trip)	0.21	0.05	0.01	0.14	0.04	0.00	0.014	0.004	0.000
Quad Axle Dump Transport (entering plant) (one-way trip)	0.78	0.21	0.02	0.51	0.14	0.01	0.051	0.014	0.001
Quad Axle Dump Transport (leaving plant) (one-way trip)	0.78	0.21	0.02	0.51	0.14	0.01	0.051	0.014	0.001
Semi Truck Transport (entering plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Semi Truck Transport (leaving plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Single Axle Dump Transport (entering plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Single Axle Dump Transport (leaving plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Tandem Dump Transport (entering plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Tandem Dump Transport (leaving plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Tri Axle Transport (entering plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Tri Axle Transport (leaving plant) (one-way trip)	1.33	0.35	0.04	0.87	0.23	0.02	0.087	0.023	0.002
Truck with Trailer Transport (entering plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Truck with Trailer Transport (leaving plant) (one-way trip)	0.41	0.11	0.01	0.27	0.07	0.01	0.027	0.007	0.001
Totals	**9.74**	**2.60**	**0.26**	**6.41**	**1.71**	**0.17**	**0.64**	**0.17**	**0.02**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr)	= (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr)	= (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr)	= (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Scrap Trucks Unpaved Roads

Company Name: **Nucor Steel**
Source Address: **4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.: **107-47617-00038**
Significant Permit Modification No.: **107-47704-00038**
Reviewer: **Aasim Noveer**

Parameters:
Truck Transport Rate

Expected operation	8,760	hours/year	
Truck travel distance	1.40	miles	Roundtrip
Empty truck weight	67	tons	Carrier with trailer and tractor weight 67 tons
Loaded truck weight	137	tons	Carry 70 tons of scrap per truck
Average truck weight	102	tons	
Hourly trips	6	trips/hour	
Annual trips	52,560	trips/year	
Hourly travelled distance	8.4	VMT/hour	
Annual travelled distance	73,664	VMT/year	
Silt content	6.0	wt. %	AP-42; Table 13.2.2-1, Iron and Steel Producing; 11/06
Days with >0.01" precipitation	120	days/yr	AP-42; Figure 13.2.2-1
Unpaved road chemical stabilization control efficiency	98%		EPA-450/2-92-004 (1992) Figure 3-2

Using AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM, PM10, and PM2.5 emission factors for unpaved road: can be estimated from the following equation:

$$E = k \times (s/12)^a \times (w/3)^b$$

where:

E =	emission factor (lb/vehicle mile traveled)		
s =	surface material silt content (%) =	6.0	(%) (AP-42, Table 13.2.2-1)
w =	mean vehicle weight (tons) =	102.0	tons scrap haul trucks
a =	empirical constant =	0.7	PM
		0.9	PM10 and PM2.5
b =	empirical constant =	0.45	PM, PM10 and PM2.5
k (lb/VMT) =	empirical constant =	4.9	PM

Unpaved road traffic uncontrolled emission factors

	Hourly (lb/VMT)	Annual (lb/VMT)
PM	14.74	9.90
PM10	3.93	2.64
PM2.5	0.39	0.26

AP-42, Page 13.2.2-4 (11/2006)

Potential to Emit:

Pollutant	Uncontrolled PTE (tons/yr)	Controlled PTE (tons/ year)
PM	364.53	7.29
PM10	97.15	1.94
PM2.5	9.71	0.19

Methodology:
Uncontrolled PTE, tons/yr = Annual Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs
Controlled PTE, tons/yr = Annual Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs * (1-control efficiency)

Appendix A: Emission Calculations
Scrap Cranes Unpaved Roads

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Parameters:
Truck Transport Rate

Expected operation	8,760	hours/year	
Truck travel distance	0.57	miles	Roundtrip
Empty weight	100	tons	Carrier with trailer and Sennebogen weight 98.3 tons
Loaded weight	170	tons	Carry 70 tons of scrap per load
Average weight	135	tons	
Hourly trips	6	trips/hour	
Annual trips	52,560	trips/year	
Hourly travelled distance	3.4	VMT/hour	
Annual travelled distance	29,864	VMT/year	
Silt content	6.0	wt. %	AP-42; Table 13.2.2-1, Iron and Steel Producing; 11/06
Days with >0.01" precipitation	120	days/yr	AP-42; Figure 13.2.2-1
Unpaved road chemical stabilization control efficiency	98%		EPA-450/2-92-004 (1992) Figure 3-2

Using AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM, PM10, and PM2.5 emission factors for unpaved road: can be estimated from the following equation:

$$E = k \times (s/12)^a \times (w/3)^b$$

where:

E =	emission factor (lb/vehicle mile traveled)		
s =	surface material silt content (%) =	6.0	(%) (AP-42, Table 13.2.2-1)
w =	mean vehicle weight (tons) =	135.0	tons scrap haul trucks
a =	empirical constant =	0.7	PM
		0.9	PM10 and PM2.5
b =	empirical constant =	0.45	PM, PM10 and PM2.5
k (lb/VMT) =	empirical constant =	4.9	PM

Unpaved road traffic uncontrolled emission factors

	Hourly (lb/VMT)	Annual (lb/VMT)
PM	16.73	11.23
PM10	4.46	2.99
PM2.5	0.45	0.30

AP-42, Page 13.2.2-4 (11/2006)

Potential to Emit:

Pollutant	Uncontrolled PTE (tons/yr)	Controlled PTE (tons/year)
PM	167.65	3.35
PM10	44.68	0.89
PM2.5	4.47	0.09

Methodology:
Uncontrolled PTE, tons/yr = Annual Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs
Controlled PTE, tons/yr = Annual Emission factor, lb/mile * (VMT, miles/yr) * ton/2000 lbs * (1-control efficiency)

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Road

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Paved Road at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	1.0	1.7	1.7	1.8	3.0	260	0.049	0.1	30.5
Pick Up Truck Transport (leaving plant) (one-way trip)	1.0	1.7	1.7	2.3	3.8	260	0.049	0.1	30.5
Quad Axle Dump Transport (entering plant) (one-way trip)	1.0	6.5	6.5	15.5	100.2	260	0.049	0.3	116.2
Quad Axle Dump Transport (leaving plant) (one-way trip)	1.0	6.5	6.5	36.6	236.8	260	0.049	0.3	116.2
Semi Truck Transport (entering plant) (one-way trip)	1.0	11.0	11.0	17.5	191.8	260	0.049	0.5	197.0
Semi Truck Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	40.0	438.4	260	0.049	0.5	197.0
Single Axle Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	6.5	22.1	260	0.049	0.2	61.1
Single Axle Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	12.5	42.5	260	0.049	0.2	61.1
Tandem Dump Transport (entering plant) (one-way trip)	1.0	3.4	3.4	12.9	43.8	260	0.049	0.2	61.1
Tandem Dump Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	28.0	95.1	260	0.049	0.2	61.1
Tri Axle Dump Transport (entering plant) (one-way trip)	1.0	11.0	11.0	14.0	153.4	260	0.049	0.5	197.0
Tri Axle Dump Transport (leaving plant) (one-way trip)	1.0	11.0	11.0	34.0	372.6	260	0.049	0.5	197.0
Truck with Trailer Transport (entering plant) (one-way trip)	1.0	3.4	3.4	5.5	18.7	260	0.049	0.2	61.1
Truck with Trailer Transport (leaving plant) (one-way trip)	1.0	3.4	3.4	10.5	35.7	260	0.049	0.2	61.1
		Totals	**80.5**	**237.5**	**1757.8**			**4.0**	**1447.7**

Average Vehicle Weight Per Trip =	21.8	tons/trip
Average Miles Per Trip =	0.05	miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	21.8	21.8	21.8	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

where p =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N =	365	days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.019	0.404	0.0991	lb/mile
Mitigated Emission Factor, Eext =	1.846	0.369	0.0906	lb/mile
Dust Control Efficiency =	90%	90%	90%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Pick Up Truck Transport (entering plant) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00
Pick Up Truck Transport (leaving plant) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00
Quad Axle Dump Transport (entering plant) (one-way trip)	0.12	0.02	0.01	0.11	0.02	0.01	0.01	0.00	0.00
Quad Axle Dump Transport (leaving plant) (one-way trip)	0.12	0.02	0.01	0.11	0.02	0.01	0.01	0.00	0.00
Semi Truck Transport (entering plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Semi Truck Transport (leaving plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Single Axle Dump Transport (entering plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Single Axle Dump Transport (leaving plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Tandem Dump Transport (entering plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Tandem Dump Transport (leaving plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Tri Axle Dump Transport (entering plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Tri Axle Dump Transport (leaving plant) (one-way trip)	0.20	0.04	0.01	0.18	0.04	0.01	0.02	0.00	0.00
Truck with Trailer Transport (entering plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Truck with Trailer Transport (leaving plant) (one-way trip)	0.06	0.01	0.00	0.06	0.01	0.00	0.01	0.00	0.00
Totals	**1.46**	**0.29**	**0.07**	**1.34**	**0.27**	**0.07**	**0.13**	**0.03**	**0.01**

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: Nucor Steel
Source Address: 4537 South Nucor Road, Crawfordsville, IN 47933
Significant Source Modification No.: 107-47617-00038
Significant Permit Modification No.: 107-47704-00038
Reviewer: Aasim Noveer

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	75.0	1.0	75.0	40.0	3000.0	2640	0.500	37.5	13687.5
Vehicle (leaving plant) (one-way trip)	75.0	1.0	75.0	17.5	1312.5	2640	0.500	37.5	13687.5
		Totals	**150.0**		**4312.5**			**75.0**	**27375.0**

Average Vehicle Weight Per Trip = 28.8 tons/trip
Average Miles Per Trip = 0.50 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	28.8	28.8	28.8	tons = average vehicle weight
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.674	0.535	0.1313	lb/mile
Mitigated Emission Factor, Eext =	2.445	0.489	0.1200	lb/mile
Dust Control Efficiency =	95%	95%	95%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Mitigated PTE of PM (Before Control) (tons/yr)	Mitigated PTE of PM10 (Before Control) (tons/yr)	Mitigated PTE of PM2.5 (Before Control) (tons/yr)	Mitigated PTE of PM (After Control) (tons/yr)	Mitigated PTE of PM10 (After Control) (tons/yr)	Mitigated PTE of PM2.5 (After Control) (tons/yr)
Vehicle (entering plant) (one-way trip)	16.73	3.35	0.82	0.84	0.17	0.04
Vehicle (leaving plant) (one-way trip)	16.73	3.35	0.82	0.84	0.17	0.04
Totals	**33.47**	**6.69**	**1.64**	**1.67**	**0.33**	**0.08**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight of Loaded Vehicle (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (Before Control) (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (After Control) (tons/yr)	= [Mitigated PTE (Before Control) (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name:	**Nucor Steel**
Source Address:	**4537 South Nucor Road, Crawfordsville, IN 47933**
Significant Source Modification No.:	**107-47617-00038**
Significant Permit Modification No.:	**107-47704-00038**
Reviewer:	**Aasim Noveer**

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	130.0	1.0	130.0	30.5	3965.0	2640	0.500	65.0	23725.0
Vehicle (leaving plant) (one-way trip)	130.0	1.0	130.0	17.5	2275.0	2640	0.500	65.0	23725.0
		Totals	**260.0**		**6240.0**			**130.0**	**47450.0**

Average Vehicle Weight Per Trip =	24.0	tons/trip
Average Miles Per Trip =	0.50	miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	24.0	24.0	24.0	tons = average vehicle weight
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

where p =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N =	365	days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.22	0.44	0.11	lb/mile
Mitigated Emission Factor, Eext =	2.03	0.41	0.10	lb/mile
Dust Control Efficiency =	95%	95%	95%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Mitigated PTE of PM (Before Control) (tons/yr)	Mitigated PTE of PM10 (Before Control) (tons/yr)	Mitigated PTE of PM2.5 (Before Control) (tons/yr)	Mitigated PTE of PM (After Control) (tons/yr)	Mitigated PTE of PM10 (After Control) (tons/yr)	Mitigated PTE of PM2.5 (After Control) (tons/yr)
Vehicle (entering plant) (one-way trip)	24.13	4.83	1.18	1.21	0.24	0.06
Vehicle (leaving plant) (one-way trip)	24.13	4.83	1.18	1.21	0.24	0.06
Totals	**48.25**	**9.65**	**2.37**	**2.41**	**0.48**	**0.12**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight of Loaded Vehicle (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (Before Control) (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (After Control) (tons/yr)	= [Mitigated PTE (Before Control) (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit