INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

To:	Interested Parties
Date:	July 16, 2014
From:	Matthew Stuckey, Chief Permits Branch Office of Air Quality
Source Name:	Howmet Castings and Services, Inc.
Permit Level:	Federally Enforceable State Operating Permit (FESOP) Significant Permit Revision
Permit Number:	091-34217-00047
Source Location:	1110 East Lincolnway, LaPorte, Indiana
Type of Action Taken:	Modification at an existing source Revisions to permit requirements

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above.

The final decision is available on the IDEM website at: http://www.in.gov/apps/idem/caats/
To view the document, select Search option 3, then enter permit 34217.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

(continues on next page)

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

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

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

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

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

IDEM

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Sean Chapple
Howmet Castings and Services, Inc.
1110 E. Lincolnway
LaPorte, IN 46350

July 16, 2014

Re: 091-34217-00047
Significant Revision to
F091-31556-00047

Dear Mr. Chapple:

Howmet Castings and Services, Inc. was issued Federally Enforceable State Operating Permit (FESOP) No. F091-31556-00047 on October 23, 2012 for a stationary metal alloy casting plant, located at 1110 E. Lincolnway, LaPorte, IN. On February 21, 2013, the Office of Air Quality (OAQ) received an application from the source requesting to expand its operations by constructing a second manufacturing plant at its existing source. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

The following construction conditions are applicable to the proposed project:

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

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

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

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

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

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Attached please find the entire revised permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Laura Spriggs Thompson of my staff at 317-233-5693 or 1-800-451-6027, and ask for extension 3-5693.

Sincerely,

Jason R. Krawczyk, Section Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document and revised permit

cc: File - LaPorte County
LaPorte County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch
IDEM Northwest Regional Office

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Commissioner

New Source Review and Federally Enforceable State Operating Permit OFFICE OF AIR QUALITY

Howmet Castings and Services, Inc.
1110 East Lincolnway
LaPorte, Indiana 46350

(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. 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 2-8 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.

Indiana statutes from IC 13 and rules from 326 IAC, quoted 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 FESOP under 326 IAC 2-8.

Operation Permit No.: F091-31556-00047	
Issued by: *Original Signed by:* Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: October 23, 2012 Expiration Date: October 23, 2017

Administrative Amendment No.: 091-33606-00047, issued October 11, 2013
Administrative Amendment No.: 091-34006-00047, issued January 14, 2014

Significant Permit Revision No.: 091-34217-00047	
Issued by: Jason R. Krawczyk, Section Chief Permits Branch Office of Air Quality	Issuance Date: July 16, 2014 Expiration Date: October 23, 2017

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Attachment B: 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Attachment C: 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Attachment D: 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignitition Internal Combustion Engines

SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary metal alloy casting plant.

Source Address:	1110 East Lincolnway, LaPorte, Indiana 46350
General Source Phone Number:	(219) 326-7400
SIC Code:	3369 (Nonferrous Foundries, Except Aluminum and Copper)
County Location:	LaPorte
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

This source consists of the following plants:

(a) Plant 1 is located at 1110 East Lincolnway Avenue, LaPorte, IN 46350.
(b) Plant 2 is located adjacent to Plant 1.

These plants are located on adjacent properties, have the same SIC code of 3369 and are under common control, therefore they will be considered one (1) source, as defined by 326 IAC 2-7-1(22).

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

Plant 1:

(a) One (1) Wax Pattern Assembly Operation, constructed before 2000, identified as P1-WPA, consisting of hand application and dip coating of multiple VOC and HAP containing solvents to wax patterns, with emissions uncontrolled, and exhausting indoors.

(b) One (1) Ceramic Mold Operation, with a nominal capacity of 0.66 tons of metal and ceramic molds per hour, consisting of the following:

(1) One (1) shell latex surface coating booth, identified as P1-SLC, constructed in 2001, with a nominal capacity of 15 wax forms per hour, equipped with dry filters to control particulate, exhausting to stack MS1.

(2) One (1) dip manufacturing operation, identified as P1-DMO, permitted in 2002, with a nominal capacity of 30 bags of Silica flour per hour (0.75 tons of flour per hour) and 0.66 tons of molds per hour, with particulate controlled by a FARR GS10 dust collector rated at 7,000 cfm, installed in 2014, and exhausting internally to stack DMBH-1.

(3) Twenty-two (22) sanding towers, identified as P1-ST, constructed in 1991 and 2013, with a combined nominal capacity of 0.66 tons per hour of sand, with particulate controlled by a dust collector with High Efficiency Particulate Air (HEPA) filters, identified as DUST-COLL-MONO-FARR, and exhausting back into the Shell Department.

(4) One (1) aluminum oxide barrel sander, identified as P1-AOBS, constructed in 2004, with a nominal capacity of 0.6 tons per year of aluminum oxide, with particulate emissions exhausting back into the Shell Department.

(5) One (1) dewax furnace, identified as P1-DBO-Big Bertha, constructed in 1991, with a nominal capacity of 0.32 tons per hour of cores, and a nominal rated heat input capacity of 4.2 MMBtu/hr (four (4) burners at 0.55 MMBtu/hr each), equipped with one (1) natural gas-fired afterburner, identified as P1-DBOAB-Big Bertha Afterburner, with a nominal rated heat input capacity of 1.55 MMBtu/hr (one (1) burner rated at 1.0 MMBtu/hr and one (1) burner rated at 0.55 MMBtu/hr) as a control, exhausting to stack DW1A.

(c) Metal Melting and Auxiliary Operations, with a source wide nominal combined capacity of 0.59 tons per hour of metal, consisting of:

(1) Six (6) Electric Induction Ovens, with a total maximum capacity of 0.59 ton per hour, including:

(A) One (1) Electric Induction Oven, identified as P1-EIO10, constructed in 1988, uncontrolled, and exhausting indoors.

(B) One (1) Electric Induction Oven, identified as P1-EIO8, constructed in 1989, uncontrolled, and exhausting indoors.

(C) One (1) Electric Induction Oven, identified as P1-EIO5, constructed in 1990, uncontrolled, and exhausting indoors.

(D) Three (3) Electric Induction Ovens, identified as P1-EIO2, P1-EIO6, and P1-EIO9, constructed before 2000, uncontrolled, and exhausting indoors.

Under 40 CFR 63, Subpart ZZZZZZ, the six (6) electric induction ovens are considered affected sources.

(2) One (1) mold hot topping process, identified as P1-HT, constructed before 2000, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting indoors.

(3) One (1) Mold Wrap Operation, identified as P1-MW, approved in 2014 for construction, with a maximum ceramic fiber usage of 500,000 pounds per year, with emissions uncontrolled, and exhausting indoors.

(4) One (1) Spray Application Insulation Booth, identified as P1-SAB, approved in 2014 for construction, with a maximum throughput of 4,000 pounds per year of liquid binder, exhausting through a 16,000 acfm spray booth filter.

(d) Pneumatic Shell Removal, identified as P1-KO-01 and P1-KO-02, constructed in 1988, with a nominal capacity of 0.59 tons per hour each of casting shells, with particulate controlled by a common dust collector, identified as KNOCKOUT DUST COLLECTOR, and exhausting to stack KOBH-1.

(e) Acid etching process, identified as P1-AEP, constructed before 2000, equipped with a

scrubber and demister for particulate control of HCl, exhausting to stack Scrubber 02.

(f) Post-Cast Operations, identified as P1-PCO, constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by a dust collector, identified as Post-Cast, constructed in 2005, exhausting to stack ZK4, and consisting of the following:

(1) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders; and

(2) Enclosed aluminum oxide blasting cabinets.

(g) Finishing Operations, identified as P1-FO, constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by one (1) dust collector, identified as Carter Day, which was constructed before 2000, and exhausting to stacks ZK1 and ZK2 and one (1) dust collector, identified as West Metals, which was constructed in 2008, and exhausting to stack ZK5. The finishing operations consist of the following:

(1) Enclosed aluminum oxide blasting cabinets.

(2) Enclosed aluminum oxide blasting booths utilizing hand held blasting pens.

(3) Hand held grinding performed in booths.

(4) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders.

(h) One (1) Fluorescent Penetrant Inspection Operation, identified as P1-FPI, with a maximum capacity of 2,000 gallons per year of Zyglo Penetrant Emulsifier, with emissions uncontrolled.

(i) One (1) natural gas-fired boiler, identified as P1-Superior Boiler #3, constructed in 1957, with a nominal rated heat input of 13.4 MMBtu/hr, exhausting to stack B2.

Plant 2:

(j) One (1) Wax Pattern Assembly Operation, identified as P2-WPA, approved in 2014 for construction, consisting of hand application and dip coating of multiple VOC and HAP containing solvents to wax patterns, with emissions uncontrolled, and exhausting indoors.

(k) One (1) Ceramic Mold Operation, consisting of the following:

(1) One (1) Dip Slurry Preparation Process, identified as P2-DSP, approved in 2014 for construction, with a maximum capacity of 1.13 tons per hour of ceramic flour and 0.99 tons of molds per hour, with particulate emissions controlled by the Dip Dust Collector (DC-101), and exhausting to Stack S-101.

(2) One (1) Sticky Latex Coating Booth, identified as P2-SLC, approved in 2014 for construction, with particulate emissions controlled by Spray Latex Filter Collector (DC-111), and exhausting to Stack S-111.

(3) One (1) Shell Formation Process, identified as P2-SFP, approved in 2014 for construction, with a maximum capacity of 0.99 ton per hour, consisting of:

(A) One (1) High Volume Sanding Operation, with twelve (12) high volume stucco towers and two (2) barrel sanders, with particulate emissions controlled by Monoshell Dust Collector (DC-103), and exhausting to Stack S-103.

(B) One (1) Low Volume Sanding Operation, with ten (10) low volume stucco towers and one (1) barrel sander, with particulate emissions controlled by Monoshell Dust Collector (DC-102), and exhausting to Stack S-102.

(4) One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

(l) Metal Melting and Auxiliary Operations, consisting of:

(1) Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

(2) One (1) Hot Top Operation, identified as P2-HT, approved in 2014 for construction, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting to Stacks S-119 and S-120.

(3) One (1) Mold Wrap Operation, identified as P2-MW, approved in 2014 for construction, with a maximum ceramic fiber usage of 750,000 pounds per year, with emissions controlled by DC-112, and exhausting to Stack S-126.

(4) One (1) Spray Application Insulation Booth, identified as P2-SAB, approved in 2014 for construction, with a maximum throughput of 6,000 pounds per year of liquid binder, exhausting through a 16,000 acfm spray booth filter (DC-104).

(m) One (1) Pneumatic Shell Removal (Knockout) Operation, identified as P2-KO, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Knockout Dust Collector (DC-105), and exhausting to Stack S-105.

(n) Manual Machining & Grinding, identified as P2-MMG, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Manual Machining & Grinding Dust Collector (DC-100), and exhausting to Stack S-100.

(o) One (1) Finishing Department with grinding, blasting, and welding operations, identified as P2-FD, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by three (3) Finishing Dust Collectors (DC-106, DC-107, and DC-108), and exhausting to Stacks S-106, S-107, and S-108, respectively.

(p) One (1) Fluorescent Penetrant Inspection Operation, identified as P2-FPI, with a maximum capacity of 3,000 gallons per year of Zyglo Penetrant Emulsifier, with emissions uncontrolled.

(q) Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

Plant 1:

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour:

(1) One (1) natural gas-fired hot water heater, constructed in 1989, with a nominal rated heat input of 0.65 MMBtu/hr, exhausting to stack HW01. This is a trivial emission unit.

(2) One (1) natural gas-fired boiler, identified as P1-BOILER-EAST, constructed in 1991, with nominal rated heat input of 4.2 MMBtu/hr, exhausting to stacks B3.

(3) One (1) natural gas-fired boiler, identified as P1-BOILER-HUMIDITY, constructed in 1991, with nominal rated heat input of 2.3 MMBtu/hr, exhausting to stacks B1.

(4) One (1) natural gas-fired boiler, identified as P1-BOILER-DEGREASE, constructed in 1994, with nominal rated heat input of 1.4 MMBtu/hr, exhausting to stacks O4H.

(5) Miscellaneous natural gas-fired space heaters totaling a nominal of 0.10 MMBtu/hr heat input. These are trivial emission units.

(6) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-02, constructed in 1987, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 2P.

(7) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-02, constructed in 1994, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 2P1.

(8) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-08, constructed in 1988, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 4P.

(9) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-05, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 5P.

(10) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-06, constructed in 1990, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 6P.

(11) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-06, constructed in 1991, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 6P1.

(12) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-09, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 9P.

(13) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-10, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 10P.

(14) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-10, constructed in 1988, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 10P1.

(b) Two (2) standby diesel generators, identified as P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02, with nominal capacities of 315 hp and 375 hp, respectively. Each generator was manufactured before April 1, 2006 and constructed before June 12, 2006.

Under 40 CFR Part 63, Subpart ZZZZ, P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02 are considered existing affected sources.

(c) Three (3) potassium hydroxide storage tanks, constructed in 2007, identified as P1-Electric Low Temp 01, P1-Electric Low Temp 02 and P1-Electric Low Temp 03, equipped with a wet scrubber to control particulate in an air stream with a volumetric flow rate of 2,800 acfm and an inlet grain loading of 0.01 gr/acf of particulate, exhausting to stacks T1 and T2, respectively.

(d) Grinding and finishing operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators, with a maximum capacity of 3.0 tons of steel per hour, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.

(e) Pressure washing operations, constructed in 1991 and modified in 2009 and 2010, using hydraulic water to remove residual amounts of shell from cast metal pieces in enclosed booths, exhausting outside of the building.

(f) Miscellaneous belt grinders, band and wet saws, and drills with particulate matter emissions below 5 pounds per hour.

(g) Nine (9) tungsten inert gas (TIG) welding stations, constructed before 2000, with a combined nominal capacity of 0.075 pounds of electrode and wire per hour, equipped with dust collectors, and exhausting indoors.

(h) Noncontact cooling tower systems with either of the following:

(1) Natural draft cooling towers not regulated under a NESHAP.

(2) Forced and induced draft cooling tower systems not regulated under a NESHAP.

(i) Paved roads.

Plant 2:

(j) Seven (7) Natural Gas-Fired Shell Preheat Ovens, identified as P2-PHO1 - P2-PHO7, approved in 2014 for construction, each with a maximum heat input capacity of 8.5 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-112 through S-118, respectively.

(k) Two (2) Natural Gas-Fired Post-Casting Ovens, identified as P2-PCO1 and P2-PCO2, approved in 2014 for construction, each with a maximum heat input capacity of 4.0 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-119 and S-120, respectively.

(l) Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

(m) One (1) KOH Salt Bath Operation, identified as P2-KOH, approved in 2014 for construction, with particulate emissions controlled by KOH Salt Bath Scrubber (DC-109), and exhausting to Stack S-109.

(n) One (1) Autoclave Operation, identified as P2-AC, approved in 2014 for construction, with particulate emissions controlled by Autoclave Scrubber (DC-110), and exhausting to Stack S-110.

(o) One (1) Water Blasting Operation (shell removal), identified as P2-IWBO, approved in 2014 for construction.

(p) One (1) noncontact Cooling Tower, identified as P2-CT, approved in 2014 for construction, with a maximum capacity of 15,600 gallons per minute.

(q) Grinding and finishing operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.

(r) Paved roads.

(s) The following processes with no emissions:

(1) One (1) Hot Isostatic Pressing (HIP) Process.

(2) One (1) Solution Heat Treating Process, using electric induction heat treat ovens.

(3) One (1) CNC machining Process, using water soluble cutting oils.

(4) One (1) Heat Treating Process, using electric induction heat treat furnaces.

(5) One (1) Final Inspection Process, using X-Ray photography.

A.5 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

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 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, F091-31556-00047, 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, 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 2-8-6] [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 2-8-4(4)]

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 2-8-4(5)(D)]

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

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(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 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

(1) it contains a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1), 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) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

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

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

(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 2-8-4(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

(a) If required by specific condition(s) in Section D of this permit, 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.12 Emergency Provisions [326 IAC 2-8-12]

(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 except as provided in 326 IAC 2-8-12.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or 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 or Northwest Regional Office 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
Northwest Regional Office phone: (219) 464-0233; fax: (219) 464-0553**.**

(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 2-8-4(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 2-8-3(c)(6) 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 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) 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.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

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

(a) All terms and conditions of permits established prior to F091-31556-00047 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

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 2-8-3(h) and 326 IAC 2-8-9.

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State 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 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 2-8-8(a)]

(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 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(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 2-8-8(c)]

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(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 2-8-3. 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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 2-8 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 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (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 approval required by 326 IAC 2-8-11.1 has been obtained;

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

(4) The Permittee notifies the:

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

and

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

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

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

(b) Emission Trades [326 IAC 2-8-15(b)]
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 2-8-15(b).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]
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 2-8-4(7). No prior notification of IDEM, OAQ or U.S. EPA is required.

(d) 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.19 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

(a) Enter upon the Permittee's premises where a FESOP 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, at reasonable times, 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, at reasonable times, 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, at reasonable times, 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.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than 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) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][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 2-8-4(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 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 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.4 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.5 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.6 Fugitive Dust Emissions [326 IAC 6-4]

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

C.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.

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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.

Testing Requirements [326 IAC 2-8-4(3)]

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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 2-8-4][326 IAC 2-8-5(a)(1)]

C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(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 2-8-4][326 IAC 2-8-5(a)(1)]

C.13 Risk Management Plan [326 IAC 2-8-4] [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.14 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation 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.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.16 Emission Statement [326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit an emission statement by July 1 following a calendar year when the source emits oxides of nitrogen or volatile organic compounds into the ambient air equal to or greater than twenty-five (25) tons. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(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 FESOP.

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.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

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

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

(d) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.19 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.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(b) One (1) Ceramic Mold Operation, with a nominal capacity of 0.66 tons of metal and ceramic molds per hour, consisting of the following:

(2) One (1) dip manufacturing operation, identified as P1-DMO, permitted in 2002, with a nominal capacity of 30 bags of Silica flour per hour (0.75 tons of flour per hour) and 0.66 tons of molds per hour, with particulate controlled by a FARR GS10 dust collector rated at 7,000 cfm, installed in 2014, and exhausting internally to stack DMBH-1.

(3) Twenty-two (22) sanding towers, identified as P1-ST, constructed in 1991 and 2013, with a combined nominal capacity of 0.66 tons per hour of sand, with particulate controlled by a dust collector with High Efficiency Particulate Air (HEPA) filters, identified as DUST-COLL-MONO-FARR, and exhausting back into the Shell Department.

(5) One (1) dewax furnace, identified as P1-DBO-Big Bertha, constructed in 1991, with a nominal capacity of 0.32 tons per hour of cores, and a nominal rated heat capacity of 5.75MMBtu/hr, equipped with one (1) natural gas-fired afterburner, identified as P1-DBOAB-Big Bertha Afterburner, with a nominal rated heat capacity of 1.2 MMBtu/hr as a control, exhausting to stack DW1A.

(c) Metal Melting and Auxiliary Operations, with a source wide nominal combined capacity of 0.59 tons per hour of metal, consisting of:

(1) Six (6) Electric Induction Ovens, with a total maximum capacity of 0.59 tons per hour, including:

(A) One (1) Electric Induction Oven, identified as P1-EIO10, constructed in 1988, uncontrolled, and exhausting indoors.

(B) One (1) Electric Induction Oven, identified as P1-EIO8, constructed in 1989, uncontrolled, and exhausting indoors.

(C) One (1) Electric Induction Oven, identified as P1-EIO5, constructed in 1990, uncontrolled, and exhausting indoors.

(D) Three (3) Electric Induction Ovens, identified as P1-EIO2, P1-EIO6, and P1-EIO9, constructed before 2000, uncontrolled, and exhausting indoors.

Under 40 CFR 63, Subpart ZZZZZZ, the six (6) electric induction ovens are considered affected sources.

(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 2-8-4(1)]

D.1.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

(a) The combined PM emissions from the sanding towers (P1-ST) through the dust collector identified as DUST-COLL-MONO-FARR shall not exceed 0.93 pound per hour.

(b) The PM emissions from the Dip Manufacturing Operation (P1-DMO) shall not exceed 0.45 pound per hour.

Compliance with these limits, combined with the limits in Conditions D.2.1, D.4.1, and D.5.1 and the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.2 FESOP Limits and PSD Minor Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM10 and PM2.5 emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control	PM10 Limit (lb/hr)	PM2.5 Limit (lb/hr)
Sanding Towers (P1-ST)	Dust Collector (DUST-COLL-MONO-FARR)	0.93	0.93
Dip Manufacturing Operation (P1-DMO)	Dust Collector (FARR GS10)	0.45	0.45

Compliance with these limits, combined with the limits in Conditions D.2.2, D.4.2, and D.5.2 and the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (ton/hr)	Particulate Emission Limit (lb/hr)
Dip Manufacturing Operation (P1-DMO)	1.41	5.16
Sanding Towers (P1-ST)	0.66 (total)	3.10 (total)
Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	0.59 (total)	2.88 (total)

The above pounds per hour limitations were 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

D.1.4 Incinerators [326 IAC 4-2-2]

Pursuant to 326 IAC 4-2 (Incinerators), the dewax furnace, identified as P1-DBO-Big Bertha shall:

(a) Consist of primary and secondary chambers or the equivalent.

(b) Be equipped with a primary burner unless burning only wood products.

(c) Comply with 326 IAC 5-1 and 326 IAC 2.

(d) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in 326 IAC 4-2-2(c).

(e) Not emit particulate matter in excess of one (1) of the following:

(1) Three-tenths (0.3) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions correct to fifty percent (50%) excess air for incinerators with solid waste capacity of greater than or equal to two hundred (200) pounds per hour.

(2) Five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity of less than two hundred (200) pounds per hour.

(f) If any of the requirements of (a) through (e) above are not met, the Permittee shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

The Permittee operating the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

D.1.5 Carbon Monoxide Emission Limits [326 IAC 9-1-2]

Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the Permittee shall not operate the dewax furnace, identified as P1-DBO-Big Bertha, unless the waste gas stream is burned in one of the following:

(a) Direct-flame afterburner.

(b) Secondary chamber.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

D.1.7 Control Devices

(a) In order to ensure compliance with Conditions D.1.1, D.1.2, and D.1.3, the dust collectors (FARR GS10, DUST-COLL-MONO-FARR) for particulate control shall be in operation and control emissions from the dip manufacturing operation (P1-DMO) and sanding

towers (P1-ST) at all times when these processes are in operation.

(b) In order to ensure compliance with Conditions D.1.4 and D.1.5, the afterburner (P1-DBOAB-Big Bertha Afterburner) shall be in operation and control emissions from the dewax furnace (P1-DBO-Big Bertha) at all times the dewax furnace is in operation.

(c) In the event that bag failure is observed in a multi-compartment dust collector, 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.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1, D.1.2, and D.1.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the sanding towers (P1-ST) dust collector (DUST-COLL-MONO-FARR) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.1.9 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the FARR GS10 and DUST-COLL-MONO-FARR dust collectors, used in conjunction with the dip manufacturing operation (P1-DMO) and sanding tower operation (P1-ST), at least once per day when the respective processes are in operation. When for any one reading, the pressure drop across a dust collector is outside its normal range, the Permittee shall take a reasonable response. The normal ranges are indicated in the table below, unless a different upper-bound or lower-bound value for a range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Dip Manufacturing Operation (P1-DMO)	Dust Collector (FARR GS10)	0.2 - 8.0
Sanding Towers (P1-ST)	Dust Collector (DUST-COLL-MONO-FARR)	0.2 - 8.0

(b) 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 reading that is outside the above-mentioned ranges is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.1.10 Broken or Failed Bag Detection

(a) For a single compartment dust collector 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 dust collector 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 dust collector's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.1.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.9, the Permittee shall maintain once per day records of the pressure drop across the FARR GS10 and DUST-COLL-MONO-FARR dust collectors, used in conjunction with the Dip Manufacturing Operation (P1-DMO) and Sanding Towers (P1-ST). 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).

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

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(d) Pneumatic Shell Removal, identified as P1-KO-01 and P1-KO-02, constructed in 1988, with a nominal capacity of 0.59 tons per hour each of casting shells, with particulate controlled by a common dust collector, identified as KNOCKOUT DUST COLLECTOR, and exhausting to stack KOBH-1.

(f) Post-Cast Operations, identified as P1-PCO, constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by a dust collector, identified as Post-Cast, constructed in 2005, exhausting to stack ZK4, and consisting of the following:

(1) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders; and

(2) Enclosed aluminum oxide blasting cabinets.

(g) Finishing Operations, identified as P1-FO, constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by one (1) dust collector, identified as Carter Day, which was constructed before 2000, and exhausting to stacks ZK1 and ZK2 and one (1) dust collector, identified as West Metals, which was constructed in 2008, and exhausting to stack ZK5. The finishing operations consists of the following:

(1) Enclosed aluminum oxide blasting cabinets.

(2) Enclosed aluminum oxide blasting booths utilizing hand held blasting pens.

(3) Hand held grinding performed in booths.

(4) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders.

(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 2-8-4(1)]

D.2.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Dust collector ID	PM Emission Limit (lb/hr)
Pneumatic Shell Removal (P1-KO-01 and P1-KO-P2)	KNOCKOUT DUST COLLECTOR	1.30
Post-Cast Operations (P1-PCO)	Post-Cast	0.50
Finishing Operations (P1-FO)	Carter Day	2.02
Finishing Operations (P1-FO)	West Metals	0.44

Compliance with these limits, combined with the limits in Conditions D.1.1, D.4.1, and D.5.1 and the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.2.2 FESOP Limits and PSD Minor Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following:

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

Unit Description	Dust collector ID	PM10 Emission Limit (lb/hr)	PM2.5 Emission Limit (lb/hr)
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	KNOCKOUT DUST COLLECTOR	1.30	1.30
Post-Cast Operations (P1-PCO)	Post-Cast	0.50	0.50
Finishing Operations (P1-FO)	Carter Day	2.02	2.02
Finishing Operations (P1-FO)	West Metals	0.44	0.44

(b) The Nickel, Chromium, and Cobalt HAP emissions from the following units shall be limited to less than the emission limits listed in the table below:

Unit Description	Dust collector ID	Nickel Emission Limit (lb/hr)	Chromium Emission Limit (lb/hr)	Cobalt Emission Limit (lb/hr)
Post-Cast Operations (P1-PCO)	Post-Cast	0.082	0.321	0.027
Finishing Operations (P1-FO)	Carter Day	0.042	0.146	0.021
Finishing Operations (P1-FO)	West Metals	0.021	0.065	0.005

Compliance with these limits, combined with the limits in Conditions D.1.2, D.4.2, D.5.2, and D.7.1 and the potential to emit PM10, PM2.5, nickel, chromium, and cobalt from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per twelve (12) consecutive month period, each, of any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and of total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

D.2.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (ton/hr)	Particulate Emission Limit (lb/hr)
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	1.18	4.58
Post-Cast Operations/ Post-Cast (P1-PCO)	0.59	2.88
Finishing Operations (P1-FO)	0.59	2.88

The above pounds per hour limitations were 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

D.2.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

D.2.5 Particulate Control

(a) In order to ensure compliance with Conditions D.2.1, D.2.2, and D.2.3, the dust collectors (KNOCKOUT, Post-Cast, Carter Day, and West Metals) for particulate control shall be in operation and control emissions from the pneumatic shell removal (P1-KO-01 and P1-KO-02), post-cast (P1-PCO), and finishing operations (P1-FO) at all times that the pneumatic shell removal, post-cast, and finishing processes are in operation.

(b) In the event that bag failure is observed in a multi-compartment dust collector, 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.2.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Conditions D.2.1, D.2.2, and D.2.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the pneumatic shell removal dust collector (KNOCKOUT) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(b) In order to demonstrate compliance with Conditions D.2.1, D.2.2, and D.2.3, the Permittee shall perform PM, PM10, PM2.5, nickel, chromium, and cobalt testing of the Post-Cast and Finishing Operations dust collectors (Post-Cast, Carter Day, and West Metals) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.2.7 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the KNOCKOUT, Post-Cast, Carter Day, and West Metals dust collectors, used in conjunction with the pneumatic shell removal (P1-KO-01 and P1-KO-02), post-cast (P1-PCO), and finishing operations (P1-FO), at least once per day when any of the processes are in operation. When for any one reading, the pressure drop across a dust collector is outside its normal range, the Permittee shall take a reasonable response. The normal ranges are indicated in the table below, unless a different upper-bound or lower-bound value for a range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	Dust Collector KNOCKOUT	0.2 - 8.0
Post-Cast Operations (P1-PCO)	Dust Collector Post-Cast	0.2 - 8.0
Finishing Operations (P1-FO)	Dust Collector Carter Day	0.2 - 8.0
Finishing Operations (P1-FO)	Dust Collector West Metals	0.2 - 8.0

(b) 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 reading that is outside the above-mentioned ranges is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.2.8 Broken or Failed Bag Detection

(a) For a single compartment dust collector 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 dust collector 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 dust collector's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.2.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.7, the Permittee shall maintain once per day records of the pressure drop across the KNOCKOUT, Post-Cast, Carter Day, and West Metals dust collectors, used in conjunction with the Pneumatic Shell Removal (P1-KO-01 and P1-KO-02), Post-Cast (P1-PCO), and Finishing operations (P1-FO). 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).

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

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1 - Natural Gas Usage Only

(b)(5) One (1) dewax furnace, identified as P1-DBO-Big Bertha, constructed in 1991, with a nominal capacity of 0.32 tons per hour of cores, and a nominal rated heat input capacity of 4.2 MMBtu/hr (four (4) burners at 0.55 MMBtu/hr each), equipped with one (1) natural gas-fired afterburner, identified as P1-DBOAB-Big Bertha Afterburner, with a nominal rated heat input capacity of 1.55 MMBtu/hr (one (1) burner rated at 1.0 MMBtu/hr and one (1) burner rated at 0.55 MMBtu/hr) as a control, exhausting to stack DW1A.

(i) One (1) natural gas-fired boiler, identified as P1-Superior Boiler #3, constructed in 1957, with a nominal rated heat input of 13.4 MMBtu/hr, exhausting to stack B2.

Insignificant Activities consisting of:

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour:

(1) One (1) natural gas-fired hot water heater, constructed in 1989, with a nominal rated heat input of 0.65 MMBtu/hr, exhausting to stack HW01. This is a trivial emission unit.

(2) One (1) natural gas-fired boiler, identified as P1-BOILER-EAST, constructed in 1991, with nominal rated heat input of 4.2 MMBtu/hr, exhausting to stacks B3.

(3) One (1) natural gas-fired boiler, identified as P1-BOILER-HUMIDITY, constructed in 1991, with nominal rated heat input of 2.3 MMBtu/hr, exhausting to stacks B1.

(4) One (1) natural gas-fired boiler, identified as P1-BOILER-DEGREASE, constructed in 1994, with nominal rated heat input of 1.4 MMBtu/hr, exhausting to stacks O4H.

(5) Miscellaneous natural gas-fired space heaters totaling a nominal of 0.10 MMBtu/hr heat input. These are trivial emission units.

(6) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-02, constructed in 1987, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 2P.

(7) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-02, constructed in 1994, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 2P1.

(8) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-08, constructed in 1988, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 4P.

(9) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-05, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 5P.

(10) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-06, constructed in 1990, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting

to stack 6P.

(11) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-06, constructed in 1991, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 6P1.

(12) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-09, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 9P.

(13) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-10, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 10P.

(14) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-10, constructed in 1988, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 10P1.

(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 2-8-4(1)]

D.3.1 Particulate [326 IAC 6-2-3] [326 IAC 6-2-4]

(a) Pursuant to 326 IAC 6-2-3(d) (Particulate Limitations for Sources of Indirect Heating), particulate emissions from P1-Superior Boiler #3 shall in no case exceed 0.8 pounds per MMBtu heat input.

(b) Pursuant to 326 IAC 6-2-4 (Particulate Limitations for Sources of Indirect Heating) the particulate emissions from the hot water heater shall be limited to 0.497 pounds per MMBtu heat input.

(c) Pursuant to 326 IAC 6-2-4 (Particulate Limitations for Sources of Indirect Heating) the particulate emissions from P1-BOILER-HUMIDITY and P1-BOILER-EAST shall each be limited to 0.462 pounds per MMBtu heat input.

(d) Pursuant to 326 IAC 6-2-4 (Particulate Limitations for Sources of Indirect Heating) the particulate emissions from P1-BOILER-DEGREASE shall be limited to 0.456 pounds per MMBtu heat input.

D.3.2 FESOP Limit [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) The total natural gas fuel usage at Plant 1 shall be less than 584 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Carbon Dioxide (CO2) emissions from natural gas combustion shall not exceed 120,000 pounds per million cubic foot (lb/MMCF).

(c) Methane (CH4) emissions from natural gas combustion shall not exceed 2.3 pounds per million cubic foot (lb/MMCF).

(d) Nitrous oxide (N2O) emissions from natural gas combustion shall not exceed 2.2. pounds per million cubic foot (lb/MMCF).

(e) The Global Warming Potential (GWP) for carbon dioxide (CO2) shall not exceed 1.0.

(f) The Global Warming Potential (GWP) for methane (CH4) shall not exceed 25.

(g) The Global Warming Potential (GWP) for nitrous oxide (N2O) shall not exceed 298.

Compliance with the above limit, combined with the limit in Condition D.6.2 and the potential to emit greenhouse gases (GHGs) from all other emission units at this source, shall limit the source-wide total potential to emit of GHGs to less than 100,000 tons of CO2 equivalent (CO2e) emissions per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) not applicable.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.3.3 Record Keeping Requirements

(a) To document the compliance status of Condition D.3.2, the Permittee shall maintain records of the total amount of natural gas burned (in MMCF) in all natural gas-fired units at Plant 1 each month and each compliance period.

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

D.3.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.3.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 2

(k) One (1) Ceramic Mold Operation, consisting of the following:

(1) One (1) Dip Slurry Preparation Process, identified as P2-DSP, approved in 2014 for construction, with a maximum capacity of 1.13 tons per hour of ceramic flour and 0.99 tons of molds per hour, with particulate emissions controlled by the Dip Dust Collector (DC-101), and exhausting to Stack S-101.

(3) One (1) Shell Formation Process, identified as P2-SFP, approved in 2014 for construction, with a maximum capacity of 0.99 ton per hour, consisting of:

(A) One (1) High Volume Sanding Operation, with twelve (12) high volume stucco towers and two (2) barrel sanders, with particulate emissions controlled by Monoshell Dust Collector (DC-103), and exhausting to Stack S-103.

(B) One (1) Low Volume Sanding Operation, with ten (10) low volume stucco towers and one (1) barrel sander, with particulate emissions controlled by Monoshell Dust Collector (DC-102), and exhausting to Stack S-102.

(4) One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

(l) Metal Melting and Auxiliary Operations, consisting of:

(1) Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

(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 2-8-4(1)]

D.4.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control	PM Limit (lb/hr)
Dip Slurry Preparation Process (P2-DSP)	Dip Dust Collector (DC-101)	0.68

Unit Description	Control	PM Limit (lb/hr)
Shell Formation Process (P2-SFP) - High Volume Sanding	Monoshell Dust Collector (DC-103)	1.22
Shell Formation Process (P2-SFP) - Low Volume Sanding	Monoshell Dust Collector (DC-102)	1.22

Compliance with these limits, combined with the limits in Conditions D.1.1, D.2.1, and D.5.1 and the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.4.2 FESOP Limits and PSD Minor Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM10 and PM2.5 emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control	PM10 Limit (lb/hr)	PM2.5 Limit (lb/hr)
Dip Slurry Preparation Process (P2-DSP)	Dip Dust Collector (DC-101)	0.68	0.68
Shell Formation Process (P2-SFP) - High Volume Sanding	Monoshell Dust Collector (DC-103)	1.22	1.22
Shell Formation Process (P2-SFP) - Low Volume Sanding	Monoshell Dust Collector (DC-102)	1.22	1.22

Compliance with these limits, combined with the limits in Conditions D.1.2, D.2.2, and D.5.2 and the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.4.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (ton/hr)	Particulate Emission Limit (lb/hr)
Dip Slurry Preparation Process (P2-DSP)	2.12	6.78
Shell Formation Process (P2-SFP)	0.99 (total)	4.07 (total)
Electric Induction Ovens (P2-EIO1 - P2-EIO4)	0.89 (total)	3.79 (total)

The above pounds per hour limitations were 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

D.4.4 Incinerators [326 IAC 4-2-2]

Pursuant to 326 IAC 4-2 (Incinerators), the Dewax Burnout Furnace (P2-DBF) shall:

(a) Consist of primary and secondary chambers or the equivalent.

(b) Be equipped with a primary burner unless burning only wood products.

(c) Comply with 326 IAC 5-1 and 326 IAC 2.

(d) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in 326 IAC 4-2-2(c).

(e) Not emit particulate matter in excess of one (1) of the following:

(1) Three-tenths (0.3) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions correct to fifty percent (50%) excess air for incinerators with solid waste capacity of greater than or equal to two hundred (200) pounds per hour.

(2) Five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity of less than two hundred (200) pounds per hour.

(f) If any of the requirements of (a) through (e) above are not met, the Permittee shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

The Permittee operating the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

D.4.5 Carbon Monoxide Emission Limits [326 IAC 9-1-2]

Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the Permittee shall not operate the Dewax Burnout Furnace (P2-DBF) unless the waste gas stream is burned in one of the following:

(a) Direct-flame afterburner.

(b) Secondary chamber.

D.4.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

D.4.7 Control Devices

(a) In order to ensure compliance with Conditions D.4.1, D.4.2, and D.4.3, the dust collectors for particulate control shall be in operation and control emissions from the Dip Slurry Preparation Process (P2-DSP) and Shell Formation Process (P2-SFP) at all times when these processes are in operation.

(b) In order to ensure compliance with Conditions D.4.4 and D.4.5, the afterburner (DAB) shall be in operation and control emissions from the Dewax Burnout Furnace (P2-DBF) at all times the Dewax Burnout Furnace is in operation.

(c) In the event that bag failure is observed in a multi-compartment dust collector, 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.4.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

Not later than 180 days after the startup of the Shell Formation Process (P2-SFP), in order to demonstrate compliance with Conditions D.4.1, D.4.2, and D.4.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the High Volume Sanding and Low Volume Sanding dust collectors (DC-102 and DC-103) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.4.9 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the dust collectors DC-101, DC-102, and DC-103, used in conjunction with the Dip Slurry Preparation Process (P2-DSP) and Shell Formation Process (P2-SFP), at least once per day when the respective processes are in operation. When for any one reading, the pressure drop across a dust collector is outside its normal range, the Permittee shall take a reasonable response. The normal ranges are indicated in the table below, unless a different upper-bound or lower-bound value for a range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Dip Slurry Preparation Process (P2-DSP)	Dip Dust Collector (DC-101)	0.2 - 8.0
Shell Formation Process (P2-SFP) - High Volume Sanding	Monoshell Dust Collector (DC-103)	0.2 - 8.0
Shell Formation Process (P2-SFP) - Low Volume Sanding	Monoshell Dust Collector (DC-102)	0.2 - 8.0

(b) 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 reading that is outside the above-mentioned ranges is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.4.10 Broken or Failed Bag Detection

(a) For a single compartment dust collector 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 dust collector 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 dust collector's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.4.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.4.9, the Permittee shall maintain once per day records of the pressure drop across the DC-101, DC-102, and DC-103 dust collectors, used in conjunction with the Dip Slurry Preparation Process (P2-DSP), the Low Volume Sanding operation, and the High Volume Sanding operation. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

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

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 2

(m) One (1) Pneumatic Shell Removal (Knockout) Operation, identified as P2-KO, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Knockout Dust Collector (DC-105), and exhausting to Stack S-105.

(n) Manual Machining & Grinding, identified as P2-MMG, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Manual Machining & Grinding Dust Collector (DC-100), and exhausting to Stack S-100.

(o) One (1) Finishing Department with grinding, blasting, and welding operations, identified as P2-FD, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by three (3) Finishing Dust Collectors (DC-106, DC-107, and DC-108), and exhausting to Stacks S-106, S-107, and S-108, respectively.

(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 2-8-4(1)]

D.5.1 Particulate Matter (PM) [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Dust collector ID	PM Emission Limit (lb/hr)
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	0.64
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	1.71
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.57
	Finishing Dust Collector (DC-107)	0.57
	Finishing Dust Collector (DC-108)	0.57

Compliance with these limits, combined with the limits in Conditions D.1.1, D.2.1, and D.4.1 and the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.5.2 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 and 326 IAC 2-4.1 not applicable,

the Permittee shall comply with the following:

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

Unit Description	Dust collector ID	PM10 Emission Limit (lb/hr)	PM2.5 Emission Limit (lb/hr)
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	0.64	0.64
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	1.71	1.71
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.57	0.57
	Finishing Dust Collector (DC-107)	0.57	0.57
	Finishing Dust Collector (DC-108)	0.57	0.57

(b) The Nickel, Chromium, and Cobalt HAP emissions from the following units shall be limited to less than the emission limits listed in the table below:

Unit Description	Dust collector ID	Nickel Emission Limit (lbs/hr)	Chromium Emission Limit (lbs/hr)	Cobalt Emission Limit (lbs/hr)
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	0.079	0.287	0.024
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.053	0.192	0.016
	Finishing Dust Collector (DC-107)	0.053	0.192	0.016
	Finishing Dust Collector (DC-108)	0.053	0.192	0.016

Compliance with these limits, combined with the limits in Conditions D.1.2, D.2.2, D.4.2, and D.7.1 and the potential to emit PM10, PM2.5, nickel, chromium, and cobalt from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per twelve (12) consecutive month period, each, of any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and of total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

D.5.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Pneumatic Shell Removal (P2-KO)	0.89	3.79
Manual Machining & Grinding (P2-MMG)	0.89	3.79
Finishing Department (P2-FD)	0.89	3.79

The above pounds per hour limitations were 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

D.5.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

D.5.5 Particulate Control

(a) In order to ensure compliance with Conditions D.5.1, D.5.2, and D.5.3, the dust collectors (DC-105, DC-100, DC-106, DC-107, and DC-108) for particulate control shall be in operation and control emissions from the Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations at all times that the processes are in operation.

(b) In the event that bag failure is observed in a multi-compartment dust collector, 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.5.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

(a) Not later than 180 days after the startup of the Pneumatic Shell Removal (P2-KO) operation, in order to demonstrate compliance with Conditions D.5.1, D.5.2, and D.5.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the Knockout dust collector (DC-105) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee’s obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(b) Not later than 180 days after the startup of the Manual Machining & Grinding (P2-MMG) Operations, in order to demonstrate compliance with Conditions D.5.1, D.5.2, and D.5.3, the Permittee shall perform PM, PM10, PM2.5, nickel, chromium, and cobalt testing of the Manual Machining & Grinding dust collector (DC-100) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(c) Not later than 180 days after the startup of the Finishing Department (P2-FD) Operations, in order to demonstrate compliance with Conditions D.5.1, D.5.2, and D.5.3, the Permittee shall perform PM, PM10, PM2.5, nickel, chromium, and cobalt testing of the Finishing dust collectors (DC-106, DC-107, and DC-108) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.5.7 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the DC-105, DC-100, DC-106, DC-107, and DC-108 dust collectors, used in conjunction with the Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations, at least once per day when any of the processes are in operation. When for any one reading, the pressure drop across a dust collector is outside its normal range, the Permittee shall take a reasonable response. The normal ranges are indicated in the table below, unless a different upper-bound or lower-bound value for a range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	0.2 - 8.0
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	0.2 - 8.0
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.2 - 8.0
	Finishing Dust Collector (DC-107)	0.2 - 8.0
	Finishing Dust Collector (DC-108)	0.2 - 8.0

(b) 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 reading that is outside the above-mentioned ranges is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.5.8 Broken or Failed Bag Detection

(a) For a single compartment dust collector 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 dust collector 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 dust collector's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.5.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.7, the Permittee shall maintain once per day records of the pressure drop across the DC-105, DC-100, DC-106, DC-107, and DC-108 dust collectors, used in conjunction with the Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations. 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).

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

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 2 - Natural Gas Usage Only

(k)(4) One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

(q) Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

Insignificant Activities consisting of:

(j) Seven (7) Natural Gas-Fired Shell Preheat Ovens, identified as P2-PHO1 - P2-PHO7, approved in 2014 for construction, each with a maximum heat input capacity of 8.5 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-112 through S-118, respectively.

(k) Two (2) Natural Gas-Fired Post-Casting Ovens, identified as P2-PCO1 and P2-PCO2, approved in 2014 for construction, each with a maximum heat input capacity of 4.0 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-119 and S-120, respectively.

(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 2-8-4(1)]

D.6.1 Particulate [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4(a) (Particulate Limitations for Sources of Indirect Heating), particulate emissions from the three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) shall be limited to 0.36 pound per MMBtu heat input, each.

D.6.2 FESOP Limit [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) The total natural gas usage at Plant 2 shall be less than 1061.7 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Carbon Dioxide (CO_2) emissions from natural gas combustion shall not exceed 120,000 pounds per million cubic foot (lb/MMCF).

(c) Methane (CH_4) emissions from natural gas combustion shall not exceed 2.3 pounds per million cubic foot (lb/MMCF).

(d) Nitrous oxide (N_2O) emissions from natural gas combustion shall not exceed 2.2. pounds per million cubic foot (lb/MMCF).

(e) The Global Warming Potential (GWP) for carbon dioxide (CO2) shall not exceed 1.0.

(f) The Global Warming Potential (GWP) for methane (CH4) shall not exceed 25.

(g) The Global Warming Potential (GWP) for nitrous oxide (N2O) shall not exceed 298.

Compliance with the above limit, combined with the limit in Condition D.3.2 and the potential to emit greenhouse gases (GHGs) from all other emission units at this source, shall limit the source-wide total potential to emit of GHGs to less than 100,000 tons of CO2 equivalent (CO2e) emissions per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) not applicable.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.6.3 Record Keeping Requirements

(a) To document the compliance status of Condition D.6.2, the Permittee shall maintain records of the total amount of natural gas burned (in MMCF) in all natural gas-fired units at Plant 2 each month and each compliance period.

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

D.6.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.6.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(c)(2) One (1) mold hot topping process, identified as P1-HT, constructed before 2000, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting indoors.

Plant 2

(l)(2) One (1) Hot Top Operation, identified as P2-HT, approved in 2014 for construction, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting to Stacks S-119 and S-120.

(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 2-8-4(1)]

D.7.1 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-4.1 not applicable, the HF emissions from the Plant 1 and Plant 2 Hot Top Operations shall be limited as follows:

(a) The total Ferrux usage rate for the Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT) shall not exceed 450,000 pounds per twelve (12) consecutive month period combined, with compliance determined at the end of each month.

(b) The HF emissions shall not exceed 0.0338 pound HF per pound of Ferrux.

Compliance with these limits, combined with the limits in Conditions D.2.2(b) and D.2.5(b) and the potential to emit HAPs from other emission units at the source, shall limit the source-wide total potential to emit of HF to less than ten (10) tons per twelve (12) consecutive month period and of total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.7.2 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.1, the Permittee shall maintain records of the total Ferrux used for Plants 1 and 2 combined for each month.

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

D.7.3 Reporting Requirements

To document the compliance status with Condition D.7.1, the Permittee shall submit a quarterly report of the Ferrux usage for the Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT) combined 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 2-8-5(a)(1) by an "authorized individual", as defined by 326 IAC 2-1.1-1(1).

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(c) Metal Melting and Auxiliary Operations, with a source wide nominal combined capacity of 0.59 tons per hour of metal, consisting of:

(1) Six (6) Electric Induction Ovens, with a total maximum capacity of 0.59 tons per hour, including:

(A) One (1) Electric Induction Oven, identified as P1-EIO10, constructed in 1988, uncontrolled, and exhausting indoors.

(B) One (1) Electric Induction Oven, identified as P1-EIO8, constructed in 1989, uncontrolled, and exhausting indoors.

(C) One (1) Electric Induction Oven, identified as P1-EIO5, constructed in 1990, uncontrolled, and exhausting indoors.

(D) Three (3) Electric Induction Ovens, identified as P1-EIO2, P1-EIO6, and P1-EIO9, constructed before 2000, uncontrolled, and exhausting indoors.

Under 40 CFR 63, Subpart ZZZZZZ, the six (6) electric induction ovens are considered existing affected sources.

Plant 2

(l) Metal Melting and Auxiliary Operations, consisting of:

(1) Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

(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 2-8-4(1)]

E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries [326 IAC 20-1] [40 CFR Part 63]

Pursuant to 40 CFR 63.11555, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions as applicable, which are incorporated by reference as 326 IAC 20-1, as specified in Table 1 of 40 CFR 63, Subpart ZZZZZZ in accordance with the schedule in 40 CFR 63, Subpart ZZZZZZ.

E.1.2 National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries] [40 CFR Part 63, Subpart ZZZZZZ]

The Permittee, which owns and operates an other nonferrous foundry that is an area source of hazardous air pollutant (HAP) emissions shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZZ (included as Attachment A of this permit):

(a) Six (6) Plant 1 Electric Induction Ovens, identified as P1-EIO2, P1-EIO5, P1-EIO6, P1-EIO8, P1-EIO9, and P1-EIO10:
- (1) 40 CFR 63.11544(a)(3), (a)(4), (b), (c), (f)
- (2) 40 CFR 63.11545(a)
- (3) 40 CFR 63.11550(a), (b)(1), (c), (d)
- (4) 40 CFR 63.11551
- (5) 40 CFR 63.11552(a), (b)
- (6) 40 CFR 63.11553
- (7) 40 CFR 63.11555
- (8) 40 CFR 63.11556
- (9) 40 CFR 63.11557
- (10) Table 1 to Subpart ZZZZZZ of Part 63

(b) Four (4) Plant 2 Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4:

- (1) 40 CFR 63.11544(a)(3), (a)(4), (b), (d), (f)
- (2) 40 CFR 63.11545(c)
- (3) 40 CFR 63.11550(a), (b)(2), (d)
- (4) 40 CFR 63.11551(a), (c)
- (5) 40 CFR 63.11552(a)
- (6) 40 CFR 63.11553
- (7) 40 CFR 63.11555
- (8) 40 CFR 63.11556
- (9) 40 CFR 63.11557
- (10) Table 1 to Subpart ZZZZZZ of Part 63

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities consisting of:

Plant 1

(b) Two (2) standby diesel generators, identified as P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02, with nominal capacities of 315 hp and 375 hp, respectively. Each generator was manufactured before April 1, 2006 and constructed before June 12, 2006.

Under 40 CFR 63, Subpart ZZZZ, P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02 are considered existing affected sources.

Plant 2

(l) Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

(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 2-8-4(1)]

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-1] [40 CFR Part 63]

(a) Pursuant to 40 CFR 63.6665, 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 P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02, as specified in Table 8 of 40 CFR 63, Subpart ZZZZ in accordance with the schedule in 40 CFR 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.6665, the emergency generators P2-EG1 and P2-EG2 do not have to meet the requirements of 40 CRF 63, Subpart A (General Provisions),

E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82] [40 CFR Part 63, Subpart ZZZZ]

The Permittee, which owns and operates stationary reciprocating internal combustion engines shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ, which are incorporated by reference as 326 IAC 20-82 (included as Attachment B of this permit):

(a) Plant 1 - P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02:
- (a) 40 CFR 63.6580
- (b) 40 CFR 63.6585
- (c) 40 CFR 63.6590(a)(1)(iii) and (iv)
- (d) 40 CFR 63.6595(a)(1), (b), and (c)
- (e) 40 CFR 63.6603(a)

(f) 40 CFR 63.6605
(g) 40 CFR 63.6625(e)(3), (f), (h), and (i)
(h) 40 CFR 63.6635
(i) 40 CFR 63.6640(a), (b), (e), and (f)
(j) 40 CFR 63.6645(a)(5)
(k) 40 CFR 63.6650
(l) 40 CFR 63.6655
(m) 40 CFR 63.6660
(n) 40 CFR 63.6665
(o) 40 CFR 63.6670
(p) 40 CFR 63.6675
(q) Table 2d to Subpart ZZZZ of Part 63 (item 4)
(r) Table 6 to Subpart ZZZZ of Part 63 (item 9)
(s) Table 8 to Subpart ZZZZ of Part 63

(b) Plant 2 - P2-EG1 & P2-EG2:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), (d)
(3) 40 CFR 63.6590(a)(2)(iii), (c)(1)
(4) 40 CFR 63.6595(a)(7)
(5) 40 CFR 63.6665
(6) 40 CFR 63.6670
(7) 40 CFR 63.6675

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 2

(q) Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

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

New Source Performance Standard Requirements [326 IAC 2-8-4(1)]

E.3.1 General Provisions Relating to New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart A] [326 IAC 12-1]

The Permittee shall comply with the provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR 60, Subpart Dc.

E.3.2 Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Dc] [326 IAC 12]

The Permittee, which owns and operates three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) shall comply with the following provisions of 40 CFR 60, Subpart Dc, which are incorporated by reference as 326 IAC 12 (included as Attachment C of this permit):

(1) 40 CFR 60.40c(a), (b), (c), (d)
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a), (g)(2), (i), (j)

SECTION E.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities consisting of:

Plant 2

(l) Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

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

New Source Performance Standard Requirements [326 IAC 2-8-4(1)]

E.4.1 General Provisions Relating to New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart A] [326 IAC 12-1]

Pursuant to 40 CFR 60.4218, the Permittee shall comply with the provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, as specified in Table 8 of 40 CFR 60, Subpart IIII in accordance with the schedule in 40 CFR 60, Subpart IIII.

E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart IIII] [326 IAC 12]

The Permittee, which owns and operates two (2) Diesel-Fired Emergency Generators (P2-EG1 & P2-EG2) shall comply with the following provisions of 40 CFR 60, Subpart IIII, which are incorporated by reference as 326 IAC 12 (included as Attachment D of this permit):

(1) 40 CFR 60.4200(a)(2)(i), (c)
(2) 40 CFR 60.4202(a)(2)
(3) 40 CFR 60.4205(b), (e)
(4) 40 CFR 60.4206
(5) 40 CFR 60.4207(b)
(6) 40 CFR 60.4208(a), (h), (i)
(7) 40 CFR 60.4209(a)
(8) 40 CFR 60.4211(a), (c), (f), (g)
(9) 40 CFR 60.4212
(10) 40 CFR 60.4214(b), (d)
(11) 40 CFR 60.4218
(12) 40 CFR 60.4219
(13) Table 5 to Subpart IIII of Part 60
(14) Table 8 to Subpart IIII of Part 60

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Howmet Castings and Services, Inc.
Source Address: 1110 East Lincolnway, LaPorte, Indiana 46350
FESOP Permit No.: F091-31556-00047

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:
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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) EMERGENCY OCCURRENCE REPORT

Source Name: Howmet Castings and Services, Inc.
Source Address: 1110 East Lincolnway, LaPorte, Indiana 46350
FESOP Permit No.: F091-31556-00047

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**) 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 Describe:
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

FESOP Quarterly Report

Source Name: Homet Castings and Services, Inc.
Source Address: 1110 E. Lincolnway, LaPorte, Indiana 46350
FESOP Permit No.: F091-31556-00047
Facility: Plant 1 Fuel Combustion Units
Parameter: Natural gas fuel usage
Limit: Shall be less than 584 million cubic feet (MMCF) 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
	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)
	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

FESOP Quarterly Report

Source Name: Homet Castings and Services, Inc.
Source Address: 1110 E. Lincolnway, LaPorte, Indiana 46350
FESOP Permit No.: F091-31556-00047
Facility: Plant 2 Fuel Combustion Units
Parameter: Natural gas fuel usage
Limit: Shall be less than 1061.7 million cubic feet (MMCF) 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
	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)
	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

FESOP Quarterly Report

Source Name: Homet Castings and Services, Inc.
Source Address: 1110 E. Lincolnway, LaPorte, Indiana 46350
FESOP Permit No.: F091-31556-00047
Facility: Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT)
Parameter: Ferrux usage
Limit: Shall not exceed 450,000 pounds 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
	Ferrux Usage (lb)	Ferrux Usage (lb)	Ferrux Usage (lb)
	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
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Howmet Castings and Services, Inc.
Source Address: 1110 East Lincolnway, LaPorte, Indiana 46350
FESOP Permit No.: F091-31556-00047

Months: _____ **to** _____ **Year:** _____

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Attachment A
to FESOP No. F091-31556-00047

[Downloaded from the eCFR on December 23, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

Part 63, Subpart ZZZZZZ—National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries

SOURCE: 74 FR 30393, June 25, 2009, unless otherwise noted.

APPLICABILITY AND COMPLIANCE DATES

§63.11544 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate an aluminum foundry, copper foundry, or other nonferrous foundry as defined in §63.11556, "What definitions apply to this subpart?" that is an area source of hazardous air pollutant (HAP) emissions as defined in §63.2 and meets the criteria specified in paragraphs (a)(1) through (4) of this section. Once you are subject to this subpart, you must remain subject to this subpart even if you subsequently do not meet the criteria in paragraphs (a)(1) through (4) of this section.

(1) Your aluminum foundry uses material containing aluminum foundry HAP, as defined in §63.11556, "What definitions apply to this subpart?"; or

(2) Your copper foundry uses material containing copper foundry HAP, as defined in §63.11556, "What definitions apply to this subpart?"; or

(3) Your other nonferrous foundry uses material containing other nonferrous foundry HAP, as defined in §63.11556, "What definitions apply to this subpart?".

(4) Your aluminum foundry, copper foundry, or other nonferrous foundry has an annual metal melt production (for existing affected sources) or an annual metal melt capacity (for new affected sources) of at least 600 tons per year (tpy) of aluminum, copper, and other nonferrous metals, including all associated alloys. You must determine the annual metal melt production and capacity for the time period as described in paragraphs (a)(4)(i) through (iv) of this section. The quantity of ferrous metals melted in iron or steel melting operations and the quantity of nonferrous metal melted in non-foundry melting operations are not included in determining the annual metal melt production for existing affected sources or the annual metal melt capacity for new affected sources.

(i) If you own or operate a melting operation at an aluminum, copper or other nonferrous foundry as of February 9, 2009, you must determine if you are subject to this rule based on your facility's annual metal melt production for calendar year 2010.

(ii) If you construct or reconstruct a melting operation at an aluminum, copper or other nonferrous foundry after February 9, 2009, you must determine if you are subject to this rule based on your facility's annual metal melt capacity at startup.

(iii) If your foundry with an existing melting operation increases production after calendar year 2010 such that the annual metal melt production equals or exceeds 600 tpy, you must submit a written notification of applicability to the Administrator within 30 days after the end of the calendar year and comply within 2 years after the date of the notification.

(iv) If your foundry with a new melting operation increases capacity after startup such that the annual metal melt capacity equals or exceeds 600 tpy, you must submit a written notification of applicability to the Administrator within 30 days after the capacity increase year and comply at the time of the capacity increase.

(b) This subpart applies to each new or existing affected source located at an aluminum, copper or other nonferrous foundry that is an area source as defined by §63.2. The affected source is the collection of all melting operations located at an aluminum, copper, or other nonferrous foundry.

(c) An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before February 9, 2009.

(d) An affected source is a new source if you commenced construction or reconstruction of the affected source after February 9, 2009.

(e) This subpart does not apply to research or laboratory facilities, as defined in section 112(c)(7) of the Clean Air Act.

(f) You are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise 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.

[74 FR 30393, June 25, 2009, as amended at 74 FR 46495, Sept. 10, 2009]

§63.11545 What are my compliance dates?

(a) If you own or operate an existing affected source, you must achieve compliance with the applicable provisions of this subpart no later than June 27, 2011.

(b) If you start up a new affected source on or before June 25, 2009, you must achieve compliance with the provisions of this subpart no later than June 25, 2009.

(c) If you start up a new affected source after June 25, 2009, you must achieve compliance with the provisions of this subpart upon startup of your affected source.

STANDARDS AND COMPLIANCE REQUIREMENTS

§63.11550 What are my standards and management practices?

(a) If you own or operate new or existing affected sources at an aluminum foundry, copper foundry, or other nonferrous foundry that is subject to this subpart, you must comply with the requirements in paragraphs (a)(1) through (3) of this section.

(1) Cover or enclose each melting furnace that is equipped with a cover or enclosure during the melting operation to the extent practicable (e.g., except when access is needed; including, but not limited to charging, alloy addition, and tapping).

(2) Purchase only metal scrap that has been depleted (to the extent practicable) of aluminum foundry HAP, copper foundry HAP, or other nonferrous foundry HAP (as applicable) in the materials charged to the melting furnace, except metal scrap that is purchased specifically for its HAP metal content for use in alloying or to meet specifications for the casting. This requirement does not apply to material that is not scrap (e.g., ingots, alloys, sows) or to materials that are not purchased (e.g., internal scrap, customer returns).

(3) Prepare and operate pursuant to a written management practices plan. The management practices plan must include the required management practices in paragraphs (a)(1) and (2) of this section and may include any other management practices that are implemented at the facility to minimize emissions from melting furnaces. You must inform your appropriate employees of the management practices that they must follow. You may use your standard operating procedures as the management practices plan provided the standard operating procedures include the required management practices in paragraphs (a)(1) and (2) of this section.

(b) If you own or operate a new or existing affected source that is located at a large foundry as defined in §63.11556, you must comply with the additional requirements in paragraphs (b)(1) and (2) of this section.

(1) For existing affected sources located at a large foundry, you must achieve a particulate matter (PM) control efficiency of at least 95.0 percent or emit no more than an outlet PM concentration limit of 0.034 grams per dry standard cubic meter (g/dscm) (0.015 grains per dry standard cubic feet (gr/dscf)).

(2) For new affected sources located at a large foundry, you must achieve a PM control efficiency of at least 99.0 percent or emit no more than an outlet PM concentration limit of at most 0.023 g/dscm (0.010 gr/dscf).

(c) If you own or operate an affected source at a small foundry that subsequently becomes a large foundry after the applicable compliance date, you must meet the requirements in paragraphs (c)(1) through (3) of this section.

(1) You must notify the Administrator within 30 days after the capacity increase or the production increase, whichever is appropriate;

(2) You must modify any applicable permit limits within 30 days after the capacity increase or the production increase to reflect the current production or capacity, if not done so prior to the increase;

(3) You must comply with the PM control requirements in paragraph (b) of this section no later than 2 years from the date of issuance of the permit for the capacity increase or production increase, or in the case of no permit issuance, the date of the increase in capacity or production, whichever occurs first.

(d) These standards apply at all times.

§63.11551 What are my initial compliance requirements?

(a) Except as specified in paragraph (b) of this section, you must conduct a performance test for existing and new sources at a large copper or other nonferrous foundry that is subject to §63.11550(b). You must conduct the test within 180 days of your compliance date and report the results in your Notification of Compliance Status according to §63.9(h).

(b) If you own or operate an existing affected source at a large copper or other nonferrous foundry that is subject to §63.11550(b), you are not required to conduct a performance test if a prior performance test was conducted within the past 5 years of the compliance date using the same methods specified in paragraph (c) of this section and you meet either of the following two conditions:

(1) No process changes have been made since the test; or

(2) You demonstrate to the satisfaction of the permitting authority that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.

(c) You must conduct each performance test according to the requirements in §63.7 and the requirements in paragraphs (c)(1) and (2) of this section.

(1) You must determine the concentration of PM (for the concentration standard) or the mass rate of PM in pounds per hour at the inlet and outlet of the control device (for the percent reduction standard) according to the following test methods:

(i) Method 1 or 1A (40 CFR part 60, appendix A-1) to select sampling port locations and the number of traverse points in each stack or duct. If you are complying with the concentration provision in §63.11550(b), sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere. If you are complying with the percent reduction provision in §63.11550(b), sampling sites must be located at the inlet and outlet of the control device and prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F (40 CFR part 60, appendix A-1), or Method 2G (40 CFR part 60, appendix A-2) to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B (40 CFR part 60, appendix A-2) to determine the dry molecular weight of the stack gas. You may use ANSI/ASME PTC 19.10-1981, “Flue and Exhaust Gas Analyses” (incorporated by reference—see §63.14) as an alternative to EPA Method 3B.

(iv) Method 4 (40 CFR part 60, appendix A-3) to determine the moisture content of the stack gas.

(v) Method 5 or 5D (40 CFR part 60, appendix A-3) or Method 17 (40 CFR part 60, appendix A-6) to determine the concentration of PM or mass rate of PM (front half filterable catch only). If you choose to comply with the percent reduction PM standard, you must determine the mass rate of PM at the inlet and outlet in pounds per hour and calculate the percent reduction in PM.

(2) Three valid test runs are needed to comprise a performance test. Each run must cover at least one production cycle (charging, melting, and tapping).

(3) For a source with a single control device exhausted through multiple stacks, you must ensure that three runs are performed by a representative sampling of the stacks satisfactory to the Administrator or his or her delegated representative. You must provide data or an adequate explanation why the stack(s) chosen for testing are representative.

§63.11552 What are my monitoring requirements?

(a) You must record the information specified in §63.11553(c)(2) to document conformance with the management practices plan required in §63.11550(a).

(b) Except as specified in paragraph (b)(3) of this section, if you own or operate an existing affected source at a large foundry, you must conduct visible emissions monitoring according to the requirements in paragraphs (b)(1) and (2) of this section.

(1) You must conduct visual monitoring of the fabric filter discharge point(s) (outlets) for any VE according to the schedule specified in paragraphs (b)(1)(i) and (ii) of this section.

(i) You must perform a visual determination of emissions once per day, on each day the process is in operation, during melting operations.

(ii) If no VE are detected in consecutive daily visual monitoring performed in accordance with paragraph (b)(1)(i) of this section for 30 consecutive days or more of operation of the process, you may decrease the frequency of visual monitoring to once per calendar week of time the process is in operation, during melting operations. If VE are detected during these inspections, you must resume daily visual monitoring of that operation during each day that the process is in operation, in accordance with paragraph (b)(1)(i) of this section until you satisfy the criteria of this section to resume conducting weekly visual monitoring.

(2) If the visual monitoring reveals the presence of any VE, you must initiate procedures to determine the cause of the emissions within 1 hour of the initial observation and alleviate the cause of the emissions within 3 hours of initial observation by taking whatever corrective action(s) are necessary. You may take more than 3 hours to alleviate a specific condition that causes VE if you identify in the monitoring plan this specific condition as one that could lead to VE in advance, you adequately explain why it is not feasible to alleviate this condition within 3 hours of the time the VE occurs, and you demonstrate that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(3) As an alternative to the monitoring requirements for an existing affected source in paragraphs (b)(1) and (2) of this section, you may install, operate, and maintain a bag leak detection system for each fabric filter according to the requirements in paragraph (c) of this section.

(c) If you own or operate a new affected source located at a large foundry subject to the PM requirements in §63.11550(b)(2) that is equipped with a fabric filter, you must install, operate, and maintain a bag leak detection system for each fabric filter according to paragraphs (c)(1) through (4) of this section.

(1) Each bag leak detection system must meet the specifications and requirements in paragraphs (c)(1)(i) through (viii) of this section.

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

(ii) The bag leak detection system sensor must provide output of relative PM loadings. You must continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

(iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (c)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) In the initial adjustment of the bag leak detection system, you must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(v) Following initial adjustment, you must not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority, except as provided in paragraph (c)(1)(vi) of this section.

(vi) Once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (c)(2) of this section.

(vii) You must install the bag leak detection sensor downstream of the fabric filter.

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

(2) You must prepare a site-specific monitoring plan for each bag leak detection system. You must operate and maintain each bag leak detection system according to the plan at all times. Each monitoring plan must describe the items in paragraphs (c)(2)(i) through (vi) of this section.

(i) Installation of the bag leak detection system;

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

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

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

(v) How the bag leak detection system output will be recorded and stored; and

(vi) Corrective action procedures as specified in paragraph (c)(3) of this section.

(3) Except as provided in paragraph (c)(4) of this section, you must initiate procedures to determine the cause of every alarm from a bag leak detection system within 1 hour of the alarm and alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to, the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM 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 fabric filter compartment;

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system; or

(4) You may take more than 3 hours to alleviate a specific condition that causes an alarm if you identify in the monitoring plan this specific condition as one that could lead to an alarm, adequately explain why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrate that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(d) If you use a control device other than a fabric filter for new or existing affected sources subject to §63.11550(b), you must submit a request to use an alternative monitoring procedure as required in §63.8(f)(4).

§63.11553 What are my notification, reporting, and recordkeeping requirements?

(a) You must submit the Initial Notification required by §63.9(b)(2) no later than 120 calendar days after June 25, 2009 or within 120 days after the source becomes subject to the standard. The Initial Notification must include the information specified in paragraphs (a)(1) through (3) of this section and may be combined with the Notification of Compliance Status required in paragraph (b) of this section.

(1) The name and address of the owner or operator;

(2) The address (i.e., physical location) of the affected source; and

(3) An identification of the relevant standard, or other requirement, that is the basis of the notification and source's compliance date.

(b) You must submit the Notification of Compliance Status required by §63.9(h) no later than 120 days after the applicable compliance date specified in §63.11545 unless you must conduct a performance test. If you must conduct a performance test, you must submit the Notification of Compliance Status within 60 days of completing the performance test. Your Notification of Compliance Status must indicate if you are a small or large foundry as defined in §63.11556, the production amounts as the basis for the determination, and if you are a large foundry, whether you elect to comply with the control efficiency requirement or PM concentration limit in §63.11550(b). In addition to the information required in §63.9(h)(2) and §63.11551, your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

(1) “This facility will operate in a manner that minimizes HAP emissions from the melting operations to the extent possible. This includes at a minimum that the owners and/or operators of the affected source will cover or enclose each melting furnace that is equipped with a cover or enclosure during melting operations to the extent practicable as required in 63.11550(a)(1).”

(2) “This facility agrees to purchase only metal scrap that has been depleted (to the extent practicable) of aluminum foundry HAP, copper foundry HAP, or other nonferrous foundries HAP (as applicable) in the materials charged to the melting furnace, except for metal scrap that is purchased specifically for its HAP metal content for use in alloying or to meet specifications for the casting as required by 63.11550(a)(2).”

(3) “This facility has prepared and will operate by a written management practices plan according to §63.11550(a)(3).”

(4) If the owner or operator of an existing affected source at a large foundry is certifying compliance based on the results of a previous performance test: “This facility complies with §63.11550(b) based on a previous performance test in accordance with §63.11551(b).”

(5) This certification of compliance is required by the owner or operator that installs bag leak detection systems: “This facility has installed a bag leak detection system in accordance with §63.11552(b)(3) or (c), has prepared a bag leak detection system monitoring plan in accordance with §63.11552(c), and will operate each bag leak detection system according to the plan.”

(c) You must keep the records specified in paragraphs (c)(1) through (5) of this section.

(1) As required in §63.10(b)(2)(xiv), you must keep a copy of each notification that you submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted.

(2) You must keep records to document conformance with the management practices plan required by §63.11550 as specified in paragraphs (c)(2)(i) and (ii) of this section.

(i) For melting furnaces equipped with a cover or enclosure, records must identify each melting furnace equipped with a cover or enclosure and document that the procedures in the management practices plan were followed during the monthly inspections. These records may be in the form of a checklist.

(ii) Records documenting that you purchased only metal scrap that has been depleted of HAP metals (to the extent practicable) charged to the melting furnace. If you purchase scrap metal specifically for the HAP metal content for use in alloying or to meet specifications for the casting, you must keep records to document that the HAP metal is included in the material specifications for the cast metal product.

(3) You must keep the records of all performance tests, inspections and monitoring data required by §§63.11551 and 63.11552, and the information identified in paragraphs (c)(3)(i) through (vi) of this section for each required inspection or monitoring.

(i) The date, place, and time of the monitoring event;

(ii) Person conducting the monitoring;

(iii) Technique or method used;

(iv) Operating conditions during the activity;

(v) Results, including the date, time, and duration of the period from the time the monitoring indicated a problem (e.g., VE) to the time that monitoring indicated proper operation; and

(vi) Maintenance or corrective action taken (if applicable).

(4) If you own or operate a new or existing affected source at a small foundry that is not subject to §63.11550(b), you must maintain records to document that your facility melts less than 6,000 tpy total of copper, other nonferrous metal, and all associated alloys (excluding aluminum) in each calendar year.

(5) If you use a bag leak detection system, you must keep the records specified in paragraphs (c)(5)(i) through (iii) of this section.

(i) Records of the bag leak detection system output.

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings.

(iii) The date and time of all bag leak detection system alarms, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

(d) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each recorded action. For records of annual metal melt production, you must keep the records for 5 years from the end of the calendar year. You must keep each record onsite for at least 2 years after the date of each recorded action according to §63.10(b)(1). You may keep the records offsite for the remaining 3 years.

(e) If a deviation occurs during a semiannual reporting period, you must submit a compliance report to your permitting authority according to the requirements in paragraphs (e)(1) and (2) of this section.

(1) The first reporting period covers the period beginning on the compliance date specified in §63.11545 and ending on June 30 or December 31, whichever date comes first after your compliance date. Each subsequent reporting period covers the semiannual period from January 1 through June 30 or from July 1 through December 31. Your

compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

(2) A compliance report must include the information in paragraphs (e)(2)(i) through (iv) of this section.

(i) Company name and address.

(ii) Statement by a responsible official, with the official's name, title, and signature, certifying the truth, accuracy and completeness of the content of the report.

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

(iv) Identification of the affected source, the pollutant being monitored, applicable requirement, description of deviation, and corrective action taken.

[74 FR 30393, June 25, 2009, as amended at 74 FR 46495, Sept. 10, 2009]

OTHER REQUIREMENTS AND INFORMATION

§63.11555 What General Provisions apply to this subpart?

Table 1 to this subpart shows which parts of the General Provisions in §§63.1 through 63.16 apply to you.

§63.11556 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in §63.2, and in this section as follows:

Aluminum foundry means a facility that melts aluminum and pours molten aluminum into molds to manufacture aluminum castings (except die casting) that are complex shapes. For purposes of this subpart, this definition does not include primary or secondary metal producers that cast molten aluminum to produce simple shapes such as sows, ingots, bars, rods, or billets.

Aluminum foundry HAP means any compound of the following metals: beryllium, cadmium, lead, manganese, or nickel, or any of these metals in the elemental form.

Annual copper and other nonferrous foundry metal melt capacity means, for new affected sources, the lower of the copper and other nonferrous metal melting operation capacity, assuming 8,760 operating hours per year or, if applicable, the maximum permitted copper and other nonferrous metal melting operation production rate for the melting operation calculated on an annual basis. Unless otherwise specified in the permit, permitted copper and other nonferrous metal melting operation rates that are not specified on an annual basis must be annualized assuming 24 hours per day, 365 days per year of operation. If the permit limits the operating hours of the melting operation(s) or foundry, then the permitted operating hours are used to annualize the maximum permitted copper and other nonferrous metal melt production rate. The annual copper and other nonferrous metal melt capacity does not include the melt capacity for ferrous metal melted in iron or steel foundry melting operations that are co-located with copper or other nonferrous melting operations or the nonferrous metal melted in non-foundry melting operations.

Annual copper and other nonferrous foundry metal melt production means, for existing affected sources, the quantity of copper and other nonferrous metal melted in melting operations at the foundry in a given calendar year. For the purposes of this subpart, metal melt production is determined on the basis of the quantity of metal charged to the melting operations. The annual copper and nonferrous metal melt production does not include the melt production of ferrous metal melted in iron or steel foundry melting operations that are co-located with copper and other nonferrous melting operations or the nonferrous metal melted in non-foundry melting operations.

Annual metal melt capacity, for new affected sources, means the lower of the aluminum, copper, and other nonferrous metal melting operation capacity, assuming 8,760 operating hours per year or, if applicable, the maximum permitted aluminum, copper, and other nonferrous metal melting operation production rate for the melting operation calculated on an annual basis. Unless otherwise specified in the permit, permitted aluminum, copper, and other nonferrous metal melting operation rates that are not specified on an annual basis must be annualized assuming 24

hours per day, 365 days per year of operation. If the permit limits the operating hours of the melting operation(s) or foundry, then the permitted operating hours are used to annualize the maximum permitted aluminum, copper, and other nonferrous metal melt production rate. The annual metal melt capacity does not include the melt capacity for ferrous metal melted in iron or steel foundry melting operations that are co-located with aluminum, copper, or other nonferrous melting operations or the nonferrous metal melted in non-foundry melting operations.

Annual metal melt production means, for existing affected sources, the quantity of aluminum, copper, and other nonferrous metal melted in melting operations at the foundry in a given calendar year. For the purposes of this subpart, annual metal melt production is determined on the basis of the quantity of metal charged to the melting operations. The annual metal melt production does not include the melt production of ferrous metal melted in iron or steel foundry melting operations that are co-located with aluminum, copper, or other nonferrous melting operations or the nonferrous metal melted in non-foundry melting operations.

Bag leak detection system means a system that is capable of continuously monitoring relative PM (*i.e.,* dust) loadings in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative PM loadings.

Copper foundry means a foundry that melts copper or copper-based alloys and pours molten copper or copper-based alloys into molds to manufacture copper or copper-based alloy castings (excluding die casting) that are complex shapes. For purposes of this subpart, this definition does not include primary or secondary metal producers that cast molten copper to produce simple shapes such as sows, ingots, billets, bars, anode copper, rods, or copper cake.

Copper foundry HAP means any compound of any of the following metals: lead, manganese, or nickel, or any of these metals in the elemental form.

Deviation means any instance where 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 emissions limitation or work practice standard;

(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 emissions limitation in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

Die casting means operations classified under the North American Industry Classification System codes 331521 (Aluminum Die-Casting Foundries) and 331522 (Nonferrous (except Aluminum) Die-Casting Foundries) and comprises establishments primarily engaged in introducing molten aluminum, copper, and other nonferrous metal, under high pressure, into molds or dies to make die-castings.

Large foundry means, for an existing affected source, a copper or other nonferrous foundry with an annual metal melt production of copper, other nonferrous metals, and all associated alloys (excluding aluminum) of 6,000 tons or greater. For a new affected source, *large foundry* means a copper or other nonferrous foundry with an annual metal melt capacity of copper, other nonferrous metals, and all associated alloys (excluding aluminum) of 6,000 tons or greater.

Material containing aluminum foundry HAP means a material containing one or more aluminum foundry HAP. Any material that contains beryllium, cadmium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (as the metal), or contains manganese in amounts greater than or equal to 1.0 percent by weight (as the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material, is considered to be a material containing aluminum foundry HAP.

Material containing copper foundry HAP means a material containing one or more copper foundry HAP. Any material that contains lead or nickel in amounts greater than or equal to 0.1 percent by weight (as the metal), or contains manganese in amounts greater than or equal to 1.0 percent by weight (as the metal), as shown in formulation data

provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material, is considered to be a material containing copper foundry HAP.

Material containing other nonferrous foundry HAP means a material containing one or more other nonferrous foundry HAP. Any material that contains chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (as the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material, is considered to be a material containing other nonferrous foundry HAP.

Melting operations (the affected source) means the collection of furnaces (*e.g.,* induction, reverberatory, crucible, tower, dry hearth) used to melt metal ingot, alloyed ingot and/or metal scrap to produce molten metal that is poured into molds to make castings. Melting operations dedicated to melting ferrous metal at an iron and steel foundry are not included in this definition and are not part of the affected source.

Other nonferrous foundry means a facility that melts nonferrous metals other than aluminum, copper, or copper-based alloys and pours the nonferrous metals into molds to manufacture nonferrous metal castings (excluding die casting) that are complex shapes. For purposes of this subpart, this definition does not include primary or secondary metal producers that cast molten nonferrous metals to produce simple shapes such as sows, ingots, bars, rods, or billets.

Other nonferrous foundry HAP means any compound of the following metals: chromium, lead, and nickel, or any of these metals in the elemental form.

Small foundry means, for an existing affected source, a copper or other nonferrous foundry with an annual metal melt production of copper, other nonferrous metals, and all associated alloys (excluding aluminum) of less than 6,000 tons. For a new affected source, *small foundry* means a copper or other nonferrous foundry with an annual metal melt capacity of copper, other nonferrous metals, and all associated alloys (excluding aluminum) of less than 6,000 tons.

§63.11557 Who implements and enforces this subpart?

(a) This subpart can be 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 has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to your State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under 40 CFR part 63, subpart E, the authorities 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 listed in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the applicability requirements in §63.11544, the compliance date requirements in §63.11545, and the applicable standards in §63.11550.

(2) Approval of an alternative nonopacity emissions standard under §63.6(g).

(3) Approval of a major change to a test method under §63.7(e)(2)(ii) and (f). A “major change to test method” is defined in §63.90(a).

(4) Approval of a major change to monitoring under §63.8(f). A “major change to monitoring” is defined in §63.90(a).

(5) Approval of a waiver of recordkeeping or reporting requirements under §63.10(f), or another major change to recordkeeping/reporting. A “major change to recordkeeping/reporting” is defined in §63.90(a).

§63.11558 [Reserved]

Table 1 to Subpart ZZZZZZ of Part 63—Applicability of General Provisions to Aluminum, Copper, and Other Nonferrous Foundries Area Sources

As required in §63.11555, "What General Provisions apply to this subpart?," you must comply with each requirement in the following table that applies to you.

Citation	Subject	Applies to subpart ZZZZZZ?	Explanation
§63.1(a)(1), (a)(2), (a)(3), (a)(4), (a)(6), (a)(10)-(a)(12), (b)(1), (b)(3), (c)(1), (c)(2), (c)(5), (e)	Applicability	Yes	§63.11544(f) exempts affected sources from the obligation to obtain a title V operating permit.
§63.1(a)(5), (a)(7)-(a)(9), (b)(2), (c)(3), (c)(4), (d)	Reserved	No	
§63.2	Definitions	Yes	
§63.3	Units and Abbreviations	Yes	
§63.4	Prohibited Activities and Circumvention	Yes	
§63.5	Preconstruction Review and Notification Requirements	Yes	
§63.6(a), (b)(1)-(b)(5), (b)(7), (c)(1), (c)(2), (c)(5), (e)(1), (e)(3)(i), (e)(3)(iii)-(e)(3)(ix), (f)(2), (f)(3), (g), (i), (j)	Compliance with Standards and Maintenance Requirements	Yes	
§63.6(f)(1)	Compliance with Nonopacity Emission Standards	No	Subpart ZZZZZZ requires continuous compliance with all requirements in this subpart.
§63.6(h)(1), (h)(2), (h)(5)-(h)(9)	Compliance with Opacity and Visible Emission Limits	No	Subpart ZZZZZZ does not contain opacity or visible emission limits.
§63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv)	Reserved	No	
§63.7	Applicability and Performance Test Dates	Yes	
§63.8(a)(1), (b)(1), (f)(1)-(5), (g)	Monitoring Requirements	Yes	
§63.8(a)(2), (a)(4), (b)(2)-(3), (c), (d), (e), (f)(6), (g)	Continuous Monitoring Systems	No	Subpart ZZZZZZ does not require a flare or CPMS, COMS or CEMS.
§63.8(a)(3)	[Reserved]	No	
§63.9(a), (b)(1), (b)(2)(i)-(iii), (b)(5), (c), (d), (e), (h)(1)-(h)(3), (h)(5), (h)(6), (j)	Notification Requirements	Yes	Subpart ZZZZZZ requires submission of Notification of Compliance Status within 120 days of compliance date unless a performance test is required.
§63.9(b)(2)(iv)-(v), (b)(4), (f), (g), (i)	No		
§63.9(b)(3), (h)(4)	Reserved	No	

Citation	Subject	Applies to subpart ZZZZZZ?	Explanation
§63.10(a), (b)(1), (b)(2)(i)-(v), (vii), (vii)(C), (viii), (ix), (b)(3), (d)(1)-(2), (d)(4), (d)(5), (f)	Recordkeeping and Reporting Requirements	Yes	
§63.10(b)(2)(vi), (b)(2)(vii)(A)-(B), (c), (d)(3), (e)	No	Subpart ZZZZZZ does not require a CPMS, COMS, CEMS, or opacity or visible emissions limit.	
§63.10(c)(2)-(c)(4), (c)(9)	Reserved	No	
§63.11	Control Device Requirements	No	
§63.12	State Authority and Delegations	Yes	
§§63.13-63.16	Addresses, Incorporations by Reference, Availability of Information, Performance Track Provisions	Yes	

Attachment B
to FESOP No. F091-31556-00047

[Downloaded from the eCFR on May 13, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

Part 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

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

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

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

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

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

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

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

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

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

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

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

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

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

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

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

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

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

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

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

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

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

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

Emission and Operating Limitations

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

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

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

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

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

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

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

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

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is

based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

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

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June

1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

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

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

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

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

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

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

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

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

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

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

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

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

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

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

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

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

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

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

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

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

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

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

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

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

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

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

§ 63.6615 When must I conduct subsequent performance tests?

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

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

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

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

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

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

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

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

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

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

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

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

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

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

Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 —15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

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

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO2} = CO_2 correction factor, percent.

%CO_2 = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (*e.g.,* operator adjustment, automatic controller adjustment, etc.) or unintentionally (*e.g.,* wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

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

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;

(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;

(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.

(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or

(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from

the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

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

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

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

(1) The compliance demonstration must consist of at least three test runs.

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

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

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

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

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

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

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

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

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional

transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

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

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

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

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

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

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

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

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

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

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

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

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

§ 63.6650 What reports must I submit and when?

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

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

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

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

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

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

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

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

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

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

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

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

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

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

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

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

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

(1) The report must contain the following information:

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

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

(iii) Engine site rating and model year.

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

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

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

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

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

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

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

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

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

§ 63.6655 What records must I keep?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(2) An existing stationary emergency RICE.

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

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

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

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

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

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

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

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

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

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

Other Requirements and Information

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

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

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).

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

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.,* as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

(4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (*e.g.* biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2 .

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(2)(ii) or (iii) and § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure $C_3 H_8$.

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

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

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

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

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

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

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

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

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

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

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

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

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

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

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

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum

Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

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

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

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

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

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

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

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

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

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

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

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

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

[78 FR 6706, Jan. 30, 2013]

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

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

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O_2. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O_2until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O_2	

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O_2	

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

[75 FR 9680, Mar. 3, 2010]

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

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

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

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
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 2 c 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]
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.	

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

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
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 2 d 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, 63.6612, 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. Measure the O_2at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a c]	(a) Measurements to determine O_2must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) [a b c]or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O_2, dry basis.
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a]provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) if using a control device, the sampling site must be located at the outlet of the control device.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		ii. Determine the O_2concentration 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, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2concentration 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; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a]provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005),[a] [c]Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.[a]	(a) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[a] Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[b] You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

[c] ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.

[78 FR 6711, Jan. 30, 2013]

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

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

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.
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.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
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_2or CO_2at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2or CO_2at 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

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

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

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

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

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.

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

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling 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 or are contractually obligated to be available for more than 15 hours per year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No.	
§ 63.6(f)(1)	Applicability of standards	No.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 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.	
§ 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.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 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.
§ 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.	
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	

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

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

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

1.0 Scope and Application. What is this Protocol?

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

1.1 Analytes. What does this protocol determine?

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

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

1.2 Applicability. When is this protocol acceptable?

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

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

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

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

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

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 Summary of Protocol

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

3.0 Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.0 Interferences.

When present in sufficient concentrations, NO and NO_2 are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ

and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 Safety. [Reserved]

6.0 Equipment and Supplies.

6.1 What equipment do I need for the measurement system?

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

6.2 Measurement System Components.

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

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

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

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

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

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

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

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

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

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

7.0 Reagents and Standards. What calibration gases are needed?

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

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

7.1.2 Up-Scale O_2 Calibration Gas Concentration.

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

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

8.0 Sample Collection and Analysis

8.1 Selection of Sampling Sites.

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

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

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

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

9.0 Quality Control (Reserved)

10.0 Calibration and Standardization

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an

EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

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

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O_2 for the O_2 channel.

10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this “sample conditioning phase” once per minute until readings are constant for at least two minutes. Then begin the “measurement data phase” and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 Up-Scale Calibration Error. The mean of the difference of the “measurement data phase” readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single “measurement data phase” reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively.

10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 Analytical Procedure

The analytical procedure is fully discussed in Section 8.

12.0 Calculations and Data Analysis

Determine the CO and O_2 concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the “measurement data phase”.

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the “measurement data phase”. The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent *or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed*).

13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO_2 gas standards that are generally recognized as representative of diesel-fueled engine NO and NO_2 emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO_2 interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

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

14.0 Pollution Prevention (Reserved)

15.0 Waste Management (Reserved)

16.0 Alternative Procedures (Reserved)

17.0 References

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

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

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

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

Table 1: Appendix A—Sampling Run Data.

Facility_____ Engine I.D._____ Date_____											
Run Type:	(_)				(_)			(_)			(_)
(X)	Pre-Sample Calibration				Stack Gas Sample			Post-Sample Cal. Check			Repeatability Check
Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
Sample Cond. Phase											
"											
"											
"											
"											
Measurement Data Phase											
"											
"											
"											
"											
"											
"											
"											
"											
"											
Mean											
Refresh Phase											
"											
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"											

[78 FR 6721, Jan. 30, 2013]

Attachment C
to FESOP No. F091-31556-00047

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Electronic Code of Federal Regulations

Title 40: Protection of Environment

Part 60, Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

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

§ 60.40c Applicability and delegation of authority.

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

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§ 60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in § 60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under § 60.14.

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

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

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

(h) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_X standards under this subpart and the SO_2 standards under subpart J or subpart Ja of this part, as applicable.

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

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.41c Definitions.

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

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

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

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

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (*i.e.* , the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see § 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see § 60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see § 60.17).

Dry flue gas desulfurization technology means a SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 60.17); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2 .

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.42c Standard for sulfur dioxide (SO2).

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that combusts only coal shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of the emission limit is determined pursuant to paragraph (e)(2) of this section.

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

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

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is fired with coal refuse, the affected facility subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO_2 emissions limit or the 90 percent SO_2 reduction requirement specified in paragraph (a) of this section and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO_2 emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 50 percent (0.50) of the potential SO_2 emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 260 ng/J (0.60 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO_2 reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).

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

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

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

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

(d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the following:

(1) The percent of potential SO_2 emission rate or numerical SO_2 emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel;

(ii) Has a heat input capacity greater than 22 MW (75 MMBtu/h); and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

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

Where:

E_s = SO_2 emission limit, expressed in ng/J or lb/MMBtu heat input;

K_a = 520 ng/J (1.2 lb/MMBtu);

K_b = 260 ng/J (0.60 lb/MMBtu);

K_c = 215 ng/J (0.50 lb/MMBtu);

H_a = Heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [MMBtu];

H_b = Heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (MMBtu); and

H_c = Heat input from the combustion of oil, in J (MMBtu).

(f) Reduction in the potential SO_2 emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO_2 emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO_2 control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), (3), or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).

(3) Coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(i) The SO_2 emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this

section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§ 60.43c Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph (c).

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e)(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2), (e)(3), and (e)(4) of this section.

(2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(4) An owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under § 60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO_2 emissions is not subject to the PM limit in this section.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

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

(a) Except as provided in paragraphs (g) and (h) of this section and § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) of this section and § 60.8, compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c is based on the average percent reduction and the average SO_2 emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO_2 emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 of appendix A of this part are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average SO_2 emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS. Method 19 of appendix A of this part shall be used to calculate E_{ao} when using daily fuel sampling or Method 6B of appendix A of this part.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E_{ho} (E_{ho} o) is used in Equation 19-19 of Method 19 of appendix A of this part to compute the adjusted E_{ao} (E_{ao} o). The E_{ho} o is computed using the following formula:

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

Where:

E_{ho} o = Adjusted E_{ho} , ng/J (lb/MMBtu);

E_{ho} = Hourly SO_2 emission rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0.

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) (where percent reduction is not required) does not have to measure the parameters E_w or X_k if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19 of appendix A of this part.

(f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the SO_2 emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

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

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

Where:

$\%P_s$ = Potential SO_2 emission rate, in percent;

$\%R_g$ = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$ = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_g$ o) is computed from E_{ao} o from paragraph (e)(1) of this section and an adjusted average SO_2 inlet rate (E_{ai} o) using the following formula:

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

Where:

$\%R_g$ o = Adjusted $\%R_g$, in percent;

E_{ao} o = Adjusted E_{ao} , ng/J (lb/MMBtu); and

E_{ai} o = Adjusted average SO_2 inlet rate, ng/J (lb/MMBtu).

(ii) To compute E_{ai} o, an adjusted hourly SO_2 inlet rate (E_{hi} o) is used. The E_{hi} o is computed using the following formula:

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

Where:

E_{hi} o = Adjusted E_{hi} , ng/J (lb/MMBtu);

E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0; and

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in § 60.48c(f), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or E_{ho} pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

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

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

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) of this section.

(1) Method 1 of appendix A of this part shall be used to select the sampling site and the number of traverse sampling points.

(2) Method 3A or 3B of appendix A-2 of this part shall be used for gas analysis when applying Method 5 or 5B of appendix A-3 of this part or 17 of appendix A-6 of this part.

(3) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:

(i) Method 5 of appendix A of this part may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 of appendix A of this part may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B of appendix A of this part may be used in Method 17 of appendix A of this part only if Method 17 of appendix A of this part is used in conjunction with a wet scrubber system. Method 17 of appendix A of this part shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part may be used in conjunction with a wet scrubber system.

(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(5) For Method 5 or 5B of appendix A of this part, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320±25 °F).

(6) For determination of PM emissions, an oxygen (O_2) or carbon dioxide (CO_2) measurement shall be obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.

(7) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rates expressed in ng/J (lb/MMBtu) heat input shall be determined using:

(i) The O_2 or CO_2 measurements and PM measurements obtained under this section, (ii) The dry basis F factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.

(8) Method 9 of appendix A-4 of this part shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(c) In place of PM testing with Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall install, calibrate, maintain, and operate a CEMS and shall comply with the requirements specified in paragraphs (c)(1) through (c)(14) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under § 60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (d) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.

(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.

(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraph (c)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (c)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (c)(7) of this section are not met.

(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall be used; and

(ii) For O2 (or CO_2), Method 3A or 3B of appendix A-2 of this part, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.

(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in § 60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.,* reference method) data and performance test (*i.e.,* compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

(d) The owner or operator of an affected facility seeking to demonstrate compliance under § 60.43c(e)(4) shall follow the applicable procedures under § 60.48c(f). For residual oil-fired affected facilities, fuel supplier certifications are only allowed for facilities with heat input capacities between 2.9 and 8.7 MW (10 to 30 MMBtu/h).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.46c Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2 emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2 concentrations and either O_2 or CO_2 concentrations at the outlet of the SO_2 control device (or the outlet of the steam generating unit if no SO_2 control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c shall measure SO_2 concentrations and either O_2 or CO_2 concentrations at both the inlet and outlet of the SO_2 control device.

(b) The 1-hour average SO_2 emission rates measured by a CEMS shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO_2 emission rate must be based on at least 30 minutes of operation, and shall be calculated using the data points required under § 60.13(h)(2). Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

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

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

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

(3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the SO_2 CEMS at the inlet to the SO_2 control device shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted, and the span value of the SO_2 CEMS at the outlet from the SO_2 control device shall be 50 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the SO_2 CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by using Method 6B of appendix A of this part. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B of appendix A of this part shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when

calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B of appendix A of this part may be used in lieu of CEMS to measure SO_2 at the inlet or outlet of the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in § 3.2 and the applicable procedures in section 7 of Performance Specification 2 of appendix B of this part. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described under § 60.48c(f), as applicable.

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

§ 60.47c Emission monitoring for particulate matter.

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

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

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

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

(iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 3 calendar months from

the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.

(2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.

(i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.* , 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.,* 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.,* 90 seconds) or conduct a new Method 9 of appendix A-4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in § 60.45c(a)(8).

(ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS “Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.” This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(b) All COMS shall be operated in accordance with the applicable procedures under Performance Specification 1 of appendix B of this part. The span value of the opacity COMS shall be between 60 and 80 percent.

(c) Owners and operators of an affected facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur and/or liquid or gaseous fuels with potential sulfur dioxide emission rates of 26 ng/J (0.060 lb/MMBtu) heat input or less and that do not use a post-combustion technology to reduce SO2 or PM emissions and that are subject to an opacity standard in § 60.43c(c) are not required to operate a COMS if they follow the applicable procedures in § 60.48c(f).

(d) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in § 60.45c(c). The CEMS specified in paragraph § 60.45c(c) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(e) Owners and operators of an affected facility that is subject to an opacity standard in § 60.43c(c) and that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2 , or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur, and is operated such that emissions of CO discharged to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis is not required to operate a COMS. Owners and

operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (e)(1) through (4) of this section; or

(1) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.

(i) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in § 60.58b(i)(3) of subpart Eb of this part.

(ii) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(iii) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).

(iv) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(2) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.

(3) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.

(4) You must record the CO measurements and calculations performed according to paragraph (e) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.

(f) An owner or operator of an affected facility that is subject to an opacity standard in § 60.43c(c) is not required to operate a COMS provided that the affected facility meets the conditions in either paragraphs (f)(1), (2), or (3) of this section.

(1) The affected facility uses a fabric filter (baghouse) as the primary PM control device and, the owner or operator operates a bag leak detection system to monitor the performance of the fabric filter according to the requirements in section § 60.48Da of this part.

(2) The affected facility uses an ESP as the primary PM control device, and the owner or operator uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the requirements in section § 60.48Da of this part.

(3) The affected facility burns only gaseous fuels and/or fuel oils that contain no greater than 0.5 weight percent sulfur, and the owner or operator operates the unit according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§ 60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under § 60.48c(c).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B of this part.

(c) In addition to the applicable requirements in § 60.7, the owner or operator of an affected facility subject to the opacity limits in § 60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator

(d) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO_2 emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO_2 emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2 or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of appendix B of this part.

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier;

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c; and

(iii) The sulfur content or maximum sulfur content of the oil.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(4) For other fuels:

(i) The name of the supplier of the fuel;

(ii) The potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input; and

(iii) The method used to determine the potential sulfur emissions rate of the fuel.

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in § 60.48c(f) to demonstrate compliance with the SO_2 standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in § 60.42C to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

(h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

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

Attachment D
to FESOP No. F091-31556-00047

[Downloaded from the eCFR on May 13, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

Part 60, 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 (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(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]

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 89.112, 40 CFR 89.113, 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 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 certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine 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) may be certified to the provisions of 40 CFR part 94 or, if Table 1 to 40 CFR 1042.1 identifies 40 CFR part 1042 as being applicable, 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the Federal Aid Highway System (FAHS); 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.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

§ 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 certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants 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 maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants 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 certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(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 certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine 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 internal combustion engines identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 2 to 40 CFR 1042.101 identifies Tier 3 standards as being applicable, the requirements applicable to Tier 3 engines in 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the FAHS; 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]

§ 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 emission standards in 40 CFR 94.8(a)(1).

(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 NOX 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 NOX 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 NOX 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) $9.0 \cdot n^{-0.20}$ g/KW-hr ($6.7 \cdot n^{-0.20}$ 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.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

§ 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 emission standards in 40 CFR 94.8(a)(1).

(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 NOX 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 NOX 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]

§ 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) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(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 80.510(b) 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 are no longer subject to the requirements of paragraph (a) of this section, and must use 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]

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 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, 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 94, subpart C, or 40 CFR part 1042, subpart C, as applicable, and must test their engines as specified in 40 CFR part 94 or 1042, as applicable.

(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 89, 40 CFR part 94 or 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 parts 89, 94, 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 parts 89, 94, 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 parts 89, 94, 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 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 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 parts 89, 94 and/or 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 according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. 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 NOX 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 NOX 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, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

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

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 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) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

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

(3) Emergency stationary 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 and emergency demand response 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.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

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.

(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 that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in § 60.4213 of this subpart, as appropriate.

(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]

§ 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:

Ci = concentration of NOX or PM at the control device inlet,

Co = concentration of NOX or PM at the control device outlet, and

R = percent reduction of NOX or PM emissions.

(2) You must normalize the NOX or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO2) 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:

Cadj = Calculated NOX or PM concentration adjusted to 15 percent O2 .

Cd = Measured concentration of NOX or PM, uncorrected.

5.9 = 20.9 percent O2 −15 percent O2 , the defined O2 correction value, percent.

%O2 = Measured O2 concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O2 and CO2 concentration is measured in lieu of O2 concentration measurement, a CO2 correction factor is needed. Calculate the CO2 correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

(i) Calculate the fuel-specific Fo 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:

Fo = Fuel factor based on the ratio of O2 volume to the ultimate CO2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O2 , percent/100.

Fd = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm3 /J (dscf/106 Btu).

Fc = Ratio of the volume of CO2 produced to the gross calorific value of the fuel from Method 19, dsm3 /J (dscf/106 Btu).

(ii) Calculate the CO2 correction factor for correcting measurement data to 15 percent O2 , as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \qquad \text{(Eq. 5)}$$

Where:

XCO2 = CO2 correction factor, percent.

5.9 = 20.9 percent O2 −15 percent O2 , the defined O2 correction value, percent.

(iii) Calculate the NOX and PM gas concentrations adjusted to 15 percent O2 using CO2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \qquad \text{(Eq. 6)}$$

Where:

Cadj = Calculated NOX or PM concentration adjusted to 15 percent O2 .

Cd = Measured concentration of NOX or PM, uncorrected.

%CO2 = Measured CO2 concentration, dry basis, percent.

(e) To determine compliance with the NOX mass per unit output emission limitation, convert the concentration of NOX in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{\text{KW-hour}} \qquad \text{(Eq. 7)}$$

Where:

ER = Emission rate in grams per KW-hour.

Cd = Measured NOX concentration in ppm.

1.912x10−3 = Conversion constant for ppm NOX 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:

$$ER = \frac{C_{adj} \times Q \times T}{\text{KW-hour}} \qquad \text{(Eq. 8)}$$

Where:

ER = Emission rate in grams per KW-hour.

Cadj = 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 or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 60.4211(f)(2)(ii) and (iii) or that operates for the purposes 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) Hours operated for the purposes specified in § 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 60.4211(f)(2)(ii) and (iii).

(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.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013]

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 NOX 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 NOX 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 areas of Alaska not accessible by the FAHS may meet the requirements of this subpart by manufacturing and installing engines meeting the requirements of 40 CFR parts 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR parts 89 and 1039, as indicated in sections §§ 60.4201(f) and 60.4202(g) of this subpart.

(c) Manufacturers, owners and operators of stationary CI ICE that are located in areas of Alaska not accessible by the FAHS 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 non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in § 60.4201 and § 60.4204 or install a PM emission control device that achieves PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.

(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 areas of Alaska not accessible by the FAHS.

(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 areas of Alaska not accessible by the FAHS 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]

§ 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 parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

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.

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 94.9(a).

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)(2)(ii) or (iii) and § 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.

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]

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)

Maximum engine power	Model year(s)	NMHC + NO_X	CO	PM
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)
	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:]

For 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_Xemissions by 90 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	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for NO_Xconcentration.
		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, 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_Xconcentration.
		iv. Measure NO_Xat the inlet and outlet of the control device	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(d) NO_Xconcentration 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.
	b. Limit the concentration of NO_Xin 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	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location; and,	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurement for NO_Xconcentration.
		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, 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_Xconcentration.

For each	Complying with the requirement to	You must	Using	According to the following requirements
		iv. Measure NO_Xat the exhaust of the stationary internal combustion engine	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(d) NO_Xconcentration 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	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration 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	(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	(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	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration 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	(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	(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.

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 Significant Permit Revision to a FESOP

Source Background and Description

Source Name:	Howmet Castings and Services, Inc.
Source Location:	1110 E. Lincolnway, LaPorte, IN 46350
County:	LaPorte
SIC Code:	3369 (Nonferrous Foundries, Except Aluminum and Copper)
Operation Permit No.:	F091-31556-00047
Operation Permit Issuance Date:	October 23, 2012
Significant Permit Revision No.:	091-34217-00047
Permit Reviewer:	Laura Spriggs Thompson

On June 2, 2014, the Office of Air Quality (OAQ) had a notice published in the *LaPorte Herald Argus*, LaPorte, Indiana, stating that Howmet Castings and Services, Inc. had applied for a Significant Permit Revision to construct a second manufacturing plant as part of the existing source. The notice also stated that the OAQ proposed to issue a Significant Permit Revision 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

No comments were received during the public notice period.

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

In order to minimize future revisions to permit attachments, IDEM will not include the company name or source city/state on the federal rule attachments to a permit. Therefore, the following attachments have been revised to reflect this change:

Attachment A: 40 CFR 63, Subpart ZZZZZZ - National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries

Attachment B: 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Attachment C: 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Attachment D: 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignitition Internal Combustion Engines

IDEM Contact

(a) Questions regarding this proposed Significant Permit Revision can be directed to Laura Spriggs Thompson at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 2133-5693 or toll free at 1-800-451-6027 extension 3-5693.

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

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

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP)

Source Description and Location

Source Name:	Howmet Castings and Services, Inc.
Source Location:	1110 E. Lincolnway, LaPorte, IN 46350
County:	LaPorte
SIC Code:	3369 (Nonferrous Foundries, Except Aluminum and Copper)
Operation Permit No.:	F091-31556-00047
Operation Permit Issuance Date:	October 23, 2012
Significant Permit Revision No.:	091-34217-00047
Permit Reviewer:	Laura Spriggs

On February 21, 2014, the Office of Air Quality (OAQ) received an application from Howmet Castings and Services, Inc. related to a modification to an existing stationary metal alloy casting plant.

Source Definition

This source consists of the following plants:

(a) Plant 1 is located at 1110 East Lincolnway Avenue, Laporte, IN 46350.
(b) Plant 2 is located adjacent to Plant 1.

In order to consider both plants as one single source, all three of the following criteria must be met:

(1) The plants must have common ownership/control;
(2) The plants must have the same SIC code; and
(3) The plants must be located on contiguous or adjacent properties.

These plants are located on adjacent properties, have the same SIC code of 3369 and are under common control, therefore they will be considered one (1) source, as defined by 326 IAC 2-7-1(22).

Existing Approvals

The source was issued FESOP No. F091-31556-00047 on October 23, 2012. The source has since received the following approvals:

(a) Administrative Amendment No. 091-33606-00047, issued on October 11, 2013.

(b) Administrative Amendment No. 091-34006-00047, issued on January 14, 2014.

County Attainment Status

The source is located in LaPorte County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]

Pollutant	Designation
$PM_{2.5}$	Unclassifiable or attainment effective April 5, 2005, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
[1]Unclassifiable or attainment effective November 15, 1990, for the 1-hour standard which was revoked effective June 15, 2005.	

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. LaPorte County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
LaPorte County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective June 28, 2011. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
LaPorte County has been classified as attainment or unclassifiable in Indiana for SO2, CO, PM10, NO2, and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Dc) and for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII) apply to facilities at the source; however these rules were in effect after August 7, 1980.

Status of the Existing Source

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

This PTE table is from the letter to Administrative Amendment No. 091-34006-00047, issued on January 14, 2014.

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (tons/year)*									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Wax Pattern Assembly Operation	--	--	--	--	--	10.49	--	--	0.97	0.81 Xylene
Dip Manufacturing Operation[4]	6.57	6.57	6.57	--	--	--	--	--	--	--
Monoshell Latex Surface Coating Booth	0.12	0.12	0.12	--	--	0.002	--	--	--	--
Sanding Towers[2]	13.59	11.27	11.27	--	--	--	--	--	--	--
Aluminum Oxide Barrel Sander	0.01	0.01	0.01	--	--	0.01	--	--	--	--
Dewax Furnace	3.56	3.56	3.56	--	--	0.40	--	--	--	--
Induction Ovens (Process emissions)	2.32	2.32	2.32	--	--	--	--	--	1.86	1.39 Nickel
Hot Topping	--	--	--	--	--	--	--	--	9.75	9.75 HF
Pneumatic Shell Removal[2]	25.22	10.69	10.69	--	--	--	--	--	--	--
Acid Etch	--	--	--	--	--	--	--	--	1.40	1.40 HCl
Post-Cast Operations (Post-Cast Baghouse)[2,3]	12.61	12.61	12.61	--	--	--	--	--	<10.16	<7.60 Nickel
Finishing Operations (Carter Day Baghouse)[2,3]	12.61	12.61	12.61	--	--	--	--	--		
Finishing Operations (West Metals Baghouse)[2, 3]	12.61	12.61	12.61	--	--	--	--	--		
Natural Gas Combustion	0.59	2.35	2.35	0.19	30.90	1.70	25.96	37,307	0.58	0.56 Hexane
Emergency Generators	0.38	0.38	0.38	0.35	5.35	0.43	1.15	199	0.005	0.001 Form-aldehyde
Potassium Hydroxide Storage Tanks	1.05	1.05	1.05	--	--	--	--	--	--	--
Insignificant Grinding and Machining	0.13	0.06	0.06	--	--	--	--	--	--	--
Welding	0.33	0.33	0.33	--	--	--	--	--	0.28	0.15 Cobalt
Cooling Towers	8.83	7.24	7.24	--	--	--	--	--	--	--
Insignificant Pressure Washing Operations	2.00	2.00	2.00	--	--	--	--	--	--	--

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (tons/year)*									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Total PTE of Entire Source	102.53	85.77	85.77	0.54	36.25	13.04	27.11	37,506	<25.0	<10
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA

[1] Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
[2] The PM, PM10, and PM2.5 emissions from the sanding towers, pneumatic shell removal, post-cast, carter day, and west metals baghouses have been limited to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[3] The Metal HAPs emissions from the post-cast, carter day, and west metals baghouses have been limited to render the requirements of 326 IAC 2-4.1 (Major Sources of HAP) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[4]The emissions listed for the Dip Manufacturing Operation represent unrestricted emissions. Particulate emissions are controlled by a dust collector; however, for purposes of showing the limited potential to emit of the source, the control is not being taken into account.
*These emissions are based upon the potential to emit after issuance of Administrative Amendment No. 091-34006-00047, issued on January 14, 2014.
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant, excluding GHGs, is emitted at a rate of two hundred fifty (250) tons per year or more and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) The source wide GHG emissions are less than one hundred thousand (<100,000) tons of CO_2 equivalent (CO_2e) emissions per year. GHG emissions do not affect the source PSD status.

(c) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the Permittee has accepted limits on HAPs emissions to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Howmet Castings and Services, Inc. on February 21, 2014, relating to the addition of a second manufacturing plant as part of the existing source.

The following is a list of the new emission units and pollution control devices:

Plant 1:

- One (1) Mold Wrap Operation, identified as P1-MW, approved in 2014 for construction, with a maximum ceramic fiber usage of 500,000 pounds per year, with emissions uncontrolled, and exhausting indoors.

- One (1) Spray Application Insulation Booth, identified as P1-SAB, approved in 2014 for construction, with a maximum throughput of 4,000 pounds per year of liquid binder, exhausting through a 16,000 acfm spray booth filter.

- One (1) finishing booth used for grinding metal from castings using handheld tools, included with the existing Plant 1 insignificant grinding and finishing operations.

- One (1) Fluorescent Penetrant Inspection Operation, identified as P1-FPI, with a maximum capacity of 2,000 gallons per year of Zyglo Penetrant Emulsifier, with emissions uncontrolled.

Plant 2:

- One (1) Wax Pattern Assembly Operation, identified as P2-WPA, approved in 2014 for construction, consisting of hand application and dip coating of multiple VOC and HAP containing solvents to wax patterns, with emissions uncontrolled, and exhausting indoors.

- One (1) Ceramic Mold Operation, consisting of the following:

    - One (1) Dip Slurry Preparation Process, identified as P2-DSP, approved in 2014 for construction, with a maximum capacity of 1.13 tons per hour of ceramic flour, with particulate emissions controlled by the Dip Dust Collector (DC-101), and exhausting to Stack S-101.

    - One (1) Sticky Latex Coating Booth, identified as P2-SLC, approved in 2014 for construction, with particulate emissions controlled by Spray Latex Filter Collector (DC-111), and exhausting to Stack S-111.

    - One (1) Shell Formation Process, identified as P2-SFP, approved in 2014 for construction, with a maximum capacity of 0.99 ton per hour, consisting of:

        - One (1) High Volume Sanding Operation, with twelve (12) high volume stucco towers and two (2) barrel sanders, with particulate emissions controlled by Monoshell Dust Collector (DC-103), and exhausting to Stack S-103.

        - One (1) Low Volume Sanding Operation, with ten (10) low volume stucco towers and one (1) barrel sander, with particulate emissions controlled by Monoshell Dust Collector (DC-102), and exhausting to Stack S-102.

    - One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

- Metal Melting and Auxiliary Operations, consisting of:

    - Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

      Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

    - One (1) Hot Top Operation, identified as P2-HT, approved in 2014 for construction, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting to Stacks S-119 and S-120.

    - One (1) Mold Wrap Operation, identified as P2-MW, approved in 2014 for construction, with a maximum ceramic fiber usage of 750,000 pounds per year, with emissions controlled by DC-112, and exhausting to Stack S-126.

  - One (1) Spray Application Insulation Booth, identified as P2-SAB, approved in 2014 for construction, with a maximum throughput of 6,000 pounds per year of liquid binder, exhausting through a 16,000 acfm spray booth filter (DC-104).

- One (1) Pneumatic Shell Removal (Knockout) Operation, identified as P2-KO, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Knockout Dust Collector (DC-105), and exhausting to Stack S-105.

- Manual Machining & Grinding, identified as P2-MMG, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Manual Machining & Grinding Dust Collector (DC-100), and exhausting to Stack S-100.

- One (1) Finishing Department with grinding, blasting, and welding operations, identified as P2-FD, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by three (3) Finishing Dust Collectors (DC-106, DC-107, and DC-108), and exhausting to Stacks S-106, S-107, and S-108, respectively.

- One (1) Fluorescent Penetrant Inspection Operation, identified as P2-FPI, approved in 2014 for construction, with a maximum capacity of 3,000 gallons per year of Zyglo Penetrant Emulsifier, with emissions uncontrolled.

- Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

  Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

Insignificant Activities:

- Seven (7) Natural Gas-Fired Shell Preheat Ovens, identified as P2-PHO1 - P2-PHO7, approved in 2014 for construction, each with a maximum heat input capacity of 8.5 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-112 through S-118, respectively.

- Two (2) Natural Gas-Fired Post-Casting Ovens, identified as P2-PCO1 and P2-PCO2, approved in 2014 for construction, each with a maximum heat input capacity of 4.0 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-119 and S-120, respectively.

- Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

  Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

- One (1) KOH Salt Bath Operation, identified as P2-KOH, approved in 2014 for construction, with particulate emissions controlled by KOH Salt Bath Scrubber (DC-109), and exhausting to Stack S-109.

- One (1) Autoclave Operation, identified as P2-AC, approved in 2014 for construction, with particulate emissions controlled by Autoclave Scrubber (DC-110), and exhausting to Stack S-110.

- One (1) Water Blasting Operation (shell removal), identified as P2-IWBO, approved in 2014 for construction.

- One (1) noncontact Cooling Tower, identified as P2-CT, approved in 2014 for construction, with a maximum capacity of 15,600 gallons per minute.

- Grinding and finishing operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.

- The following processes with no emissions:

    - One (1) Hot Isostatic Pressing (HIP) Process.

    - One (1) Solution Heat Treating Process, using electric induction heat treat ovens.

    - One (1) CNC machining Process, using water soluble cutting oils.

    - One (1) Heat Treating Process, using electric induction heat treat furnaces.

    - One (1) Final Inspection Process, using X-Ray photography.

Enforcement Issues

There are no pending enforcement actions related to this revision.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – FESOP Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-8.11.1. This table reflects the non-fugitive PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Plant 1										
Mold Wrap Operation (P1-MW)	0.25	0.25	0.25	--	--	--	--	--	--	--
Spray Application Insulation Booth (P1-SAB)	0.07	0.07	0.07	--	--	0.06	--	--	3.6E-4	3.6E-4 (Methanol)
Finishing Booth	0.02	0.01	0.01	--	--	--	--	--	0.0017	0.001 (Cr)
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	3.74	--	--	--	--
Plant 2										

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Wax Pattern Assembly Operation (P2-WPA)	--	--	--	--	--	7.13	--	--	1.73	1.28 (Xylene)
Dip Slurry Preparation Process (P2-DSP)	9.90	9.90	9.90	--	--	--	--	--	--	--
Shell Formation Process (P2-SFP) - High Volume Sanding	1,778.3	1,778.3	1,778.3	--	--	--	--	--	--	--
Shell Formation Process (P2-SFP) - Low Volume Sanding	1,778.3	1,778.3	1,778.3	--	--	--	--	--	--	--
Dewax Burnout Furnace (P2-DBF) (Process and Combustion Emissions)	5.44	5.75	5.75	0.03	5.48	0.90	4.60	6,609.0	0.10	0.10 (Hexane)
Sticky Latex Coating Booth (P2-SLC)	0.03	0.03	0.03	--	--	0.02	--	--	--	--
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	3.55	3.55	3.55	--	--	--	--	--	1.53	1.14 (Cr)
Hot Top Operation (P2-HT)	--	--	--	--	--	--	--	--	3.81	3.81 (HF)
Mold Wrap Operation (P2-MW)	0.38	0.38	0.38	--	--	--	--	--	--	--
Spray Application Insulation Booth (P2-SAB)	0.10	0.10	0.10	--	--	0.09	--	--	5.4E-4	5.4E-4 (Methanol)
Pneumatic Shell Removal (P2-KO)	93.85	93.85	93.85	--	--	--	--	--	--	--
Manual Machining & Grinding (P2-MMG)	2,507.8	2,507.8	2,507.8	--	--	--	--	--	571.8	421.6 (Cr)
Finishing Department (P2-FD)	2,507.8	2,507.8	2,507.8	--	--	--	--	--	571.8	421.6 (Cr)

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	5.61	--	--	--	--
Boilers (P2-B1 - P2-B3)	0.39	1.57	1.57	0.12	20.61	1.13	17.31	24,881.1	0.39	0.37 (Hexane)
Insignificant Activities										
Insignificant NG Combustion (preheat and post-casting ovens (P2-PHO1 - P2-PHO7, P2-PCO1, P2-PCO2))	0.55	2.20	2.20	0.17	28.99	1.59	24.35	34,989.1	0.55	0.52 (Hexane)
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	0.23	0.13	0.13	1.36	8.05	0.24	1.84	390.36	0.004	0.002 (Benzene)
KOH Salt Bath (P2-KOH)	1.58	1.58	1.58	--	--	--	--	--	--	--
Autoclave Operation (P2-AC)	1.13	1.13	1.13	--	--	--	--	--	--	--
Water Blasting Operation (P2-IWBO)	0.75	0.75	0.75	--	--	--	--	--	--	--
Cooling Tower (P2-CT)	3.33	2.73	2.73	--	--	--	--	--	--	--
Grinding and Finishing	0.20	0.09	0.09	--	--	--	--	--	0.02	0.01 (Cr)
Total PTE of Proposed Revision	**8,693.9**	**8,696.2**	**8,696.2**	**1.7**	**63.1**	**20.51**	**48.1**	**66,869.5**	**1,151.7**	**844.3 (Cr)**

Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the table.

Pursuant to 326 IAC 2-8-11.1(f)(1)(E) and 326 IAC 2-8-11.1(f)(1)(G), this FESOP is being revised through a FESOP Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit revision and the proposed revision involves the construction of new emission units with the potential to emit greater than or equal to twenty-five (25) tons per year of PM, PM10, PM2.5, and NOx and with the potential to emit greater than or equal to ten (10) tons per year of a single HAP and twenty-five (25) tons per year of any combination of HAPs.

PTE of the Entire Source After Issuance of the FESOP Revision

The table below summarizes the non-fugitive potential to emit of the entire source *(reflecting adjustment of existing limits)*, with updated emissions shown as **bold** values and previous emissions shown as ~~strikethrough~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Plant 1										
Wax Pattern Assembly Operation **(P1-WPA)**	--	--	--	--	--	~~10.49~~ **4.75**	--	--	~~0.97~~ **1.15**	~~0.81~~ **0.85** (Xylene)
Dip Manufacturing Operation **(P1-DMO)**[42]	~~6.57~~ **1.97**	~~6.57~~ **1.97**	~~6.57~~ **1.97**	--	--	--	--	--	--	--
~~Monos~~**S**hell Latex Surface Coating Booth **(P1-SLC)**	~~0.12~~ **0.02**	~~0.12~~ **0.02**	~~0.12~~ **0.02**	--	--	~~0.002~~ **0.01**	--	--	--	--
Sanding Towers **(P1-ST)**[2]	~~13.59~~ **4.07**	~~11.27~~ **4.07**	~~11.27~~ **4.07**	--	--	--	--	--	--	--
Aluminum Oxide Barrel Sander **(P1-AOBS)**	0.01	0.01	0.01	--	--	~~0.01~~ **--**	--	--	--	--
Dewax Furnace **Process Emissions (P1-DBO-Big Bertha)**	3.56	3.56	3.56	--	--	0.40	--	--	--	--
Induction Ovens (~~Process emissions~~**P1-EIO2, 5, 6, 8, 9, 10**)	~~2.32~~ **2.33**	~~2.32~~ **2.33**	~~2.32~~ **2.33**	--	--	--	--	--	~~1.86~~ **1.00**	~~1.39 (Nickel)~~ **0.75 (Cr)**
Hot Topping **Process (P1-HT)**	--	--	--	--	--	--	--	--	~~9.75~~ **7.61**	~~9.75~~ **7.61**[8] (HF)
Mold Wrap Operation (P1-MW)	**0.25**	**0.25**	**0.25**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Spray Application Insulation Booth (P1-SAB)	**0.07**	**0.07**	**0.07**	**--**	**--**	**0.06**	**--**	**--**	**3.6E-4**	**3.6E-4 (Methanol)**
Pneumatic Shell Removal **(P1-KO-01, P1-KO-02)**[2]	~~25.22~~ **5.69**	~~10.69~~ **5.69**	~~10.69~~ **5.69**	--	--	--	--	--	--	--
Acid Etch**ing Process (P1-AEP)**	--	--	--	--	--	--	--	--	1.40	1.40 (HCl)

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Post-Cast Operations **(P1-PCO)** (Post-Cast Baghouse)[2,3]	~~12.61~~ **2.19**	~~12.61~~ **2.19**	~~12.61~~ **2.19**	--	--	--	--	--	~~<10.16~~ **1.88**	~~<7.60 (Nickel)~~ **1.41 (Cr)**
Finishing Operations **(P1-FO)** (Carter Day Baghouse)[2,3]	~~12.61~~ **8.85**	~~12.61~~ **8.85**	~~12.61~~ **8.85**	--	--	--	--	--	**0.92**	**0.64 (Cr)**
Finishing Operations **(P1-FO)** (West Metals Baghouse)[2,3]	~~12.61~~ **1.93**	~~12.61~~ **1.93**	~~12.61~~ **1.93**	--	--	--	--	--	**0.40**	**0.28 (Cr)**
Fluorescent Penetrant Inspection Operation (P1-FPI)	**--**	**--**	**--**	**--**	**--**	**3.74**	**--**	**--**	**--**	**--**
P1-Superior Boiler #3[4]	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
Plant 1 Total Natural Gas Combustion[4]	~~0.59~~ **0.55**	~~2.35~~ **2.22**	~~2.35~~ **2.22**	~~0.19~~ **0.18**	~~30.90~~ **29.20**	~~1.70~~ **1.61**	~~25.96~~ **24.53**	~~37,307~~ **35,248**	~~0.58~~ **0.55**	~~0.56~~ **0.53** (Hexane)
Plant 1 Insignificant Activities										
Insignificant NG Combustion (small boilers, hot water heater, space heaters, casting ovens)[4]	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
Emergency Generators **(P1-GEN-AUXPWR-01 & P1-GEN-AUZPWR-02)**	0.38	0.38	0.38	0.35	5.35	0.43	1.15	199	0.005	0.001 (Form-aldehyde)
Potassium Hydroxide Storage Tanks	1.05	1.05	1.05	--	--	--	--	--	--	--
Insignificant Grinding and ~~Machining~~**Finishing**	0.13	0.06	0.06	--	--	--	--	--	--	--
Welding	0.33	0.33	0.33	--	--	--	--	--	0.28	0.15 (Cobalt)
Cooling Towers	~~8.83~~ **8.88**	~~7.24~~ **7.28**	~~7.24~~ **7.28**	--	--	--	--	--	--	--
Insignificant Pressure Washing Operations	~~2.00~~ **0.64**	~~2.00~~ **0.64**	~~2.00~~ **0.64**	--	--	--	--	--	--	--

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Plant 1 Total	**42.89**	**42.88**	**42.88**	**0.53**	**34.55**	**11.07**	**25.68**	**35,447**	**15.21[8]**	**7.61[8] (HF)**
Plant 2										
Wax Pattern Assembly Operation (P2-WPA)	**--**	**--**	**--**	**--**	**--**	**7.13**	**--**	**--**	**1.73**	**1.28 (Xylene)**
Dip Slurry Preparation Process (P2-DSP)[5]	**2.98**	**2.98**	**2.98**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Shell Formation Process (P2-SFP) - High Volume Sanding[5]	**5.34**	**5.34**	**5.34**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Shell Formation Process (P2-SFP) - Low Volume Sanding[5]	**5.34**	**5.34**	**5.34**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Dewax Burnout Furnace Process Emissions (P2-DBF)	**5.34**	**5.34**	**5.34**	**--**	**--**	**0.60**	**--**	**--**	**--**	**--**
Sticky Latex Coating Booth (P2-SLC)	**0.03**	**0.03**	**0.03**	**--**	**--**	**0.015**	**--**	**--**	**--**	**--**
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	**3.55**	**3.55**	**3.55**	**--**	**--**	**--**	**--**	**--**	**1.53**	**1.14 (Cr)**
Hot Top Operation (P2-HT)	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**[8]**	**(HF)[8]**
Mold Wrap Operation (P2-MW)	**0.38**	**0.38**	**0.38**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Spray Application Insulation Booth (P2-SAB)	**0.10**	**0.10**	**0.10**	**--**	**--**	**0.09**	**--**	**--**	**5.4E-4**	**5.4E-4 (Methanol)**
Pneumatic Shell Removal (P2-KO)	**2.80**	**2.80**	**2.80**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Manual Machining & Grinding (P2-MMG)[6]	**7.49**	**7.49**	**7.49**	**--**	**--**	**--**	**--**	**--**	**1.71**	**1.26 (Cr)**
Finishing Department (P2-FD)[6]	**7.49**	**7.49**	**7.49**	**--**	**--**	**--**	**--**	**--**	**3.43**	**2.52 (Cr)**
Fluorescent Penetrant Inspection Operation (P2-FPI)	**--**	**--**	**--**	**--**	**--**	**5.61**	**--**	**--**	**--**	**--**
Boilers (P2-B1, P2-B2, P2-B3)[7]	7	7	7	7	7	7	7	7	7	7
Plant 2 Total Natural Gas Combustion[7]	**1.01**	**4.03**	**4.03**	**0.32**	**53.09**	**2.92**	**44.59**	**64,081**	**1.00**	**0.96 (Hexane)**
Plant 2 Insignificant Activities										
Insignificant NG Combustion (preheat and post-casting ovens (P2-PHO1 - P2-PHO7, P2-PCO1, P2-PCO2))[7]	7	7	7	7	7	7	7	7	7	7
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	**0.23**	**0.13**	**0.13**	**1.36**	**8.05**	**0.24**	**1.84**	**390.4**	**0.004**	**0.002 (Benzene)**
KOH Salt Bath (P2-KOH)	**1.58**	**1.58**	**1.58**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Autoclave Operation (P2-AC)	**1.13**	**1.13**	**1.13**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Water Blasting Operation (P2-IWBO)	**0.75**	**0.75**	**0.75**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Cooling Tower (P2-CT)	**3.33**	**2.73**	**2.73**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Grinding and Finishing	**0.20**	**0.09**	**0.09**	**--**	**--**	**--**	**--**	**--**	**0.02**	**0.01 (Cr)**
Plant 2 Total	**49.06**	**51.28**	**51.28**	**1.67**	**61.13**	**16.60**	**46.44**	**64,471**	**9.41[8]**	**4.93 (Cr)**
Total PTE of Entire Source	~~102.53~~ **91.95**	~~85.77~~ **94.16**	~~85.77~~ **94.16**	~~0.54~~ **2.20**	~~36.25~~ **95.68**	~~13.04~~ **27.60**	~~27.11~~ **72.12**	~~37,506~~ **99,918**	~~<25.0~~ **24.62**	~~<10~~ **8.10 (Cr)**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA

[1] Under the Part 70 Permit program (40 CFR 70), **PM10 and PM2.5**~~particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10)~~, not particulate matter (PM), ~~is~~**are each** considered as a "regulated air pollutant".
[2] The PM, PM10, and PM2.5 emissions from the **Plant 1 dip manufacturing operation,** sanding towers, pneumatic shell removal, post-cast, carter day, and west metals baghouses have been limited to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[3] The **m**~~M~~etal HAP~~s~~ emissions from the **Plant 1** post-cast, carter day, and west metals baghouses have been limited to render the requirements of 326 IAC 2-4.1 (Major Sources of HAP) and 326 IAC 2-7 (Part 70 Permits) not applicable.
~~[4]The emissions listed for the Dip Manufacturing Operation represent unrestricted emissions. Particulate emissions are controlled by a dust collector; however, for purposes of showing the limited potential to emit of the source, the control is not being taken into account.~~
[4] The natural gas usage for all Plant 1 processes requiring natural gas combustion has been limited to render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable for CO2e.
[5] The PM, PM10, and PM2.5 emissions from the Plant 2 Dip Slurry Preparation Process (P2-DSP), Shell Formation Process (P2-SFP) - High and Low Volume Sanding, Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations have been limited to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[6] The metal HAP emissions from the Plant 2 Manual Machining & Grinding (P2-MMG) and Finishing Department (P2-FD) operations have been limited to render the requirements of 326 IAC 2-4.1 (Major Sources of HAP) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[7] The natural gas usage for all Plant 2 processes requiring natural gas combustion has been limited to render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable for CO2e.
[8]The limited Plant 2 Hot Top Operation (P2-HT) emissions are included with the limited Plant 1 Hot Top Operation (P1-HT) emissions.
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.
Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the table.

The table below summarizes the non-fugitive potential to emit of the entire source after issuance of this revision, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP permit revision, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. *Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted.*

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Plant 1										
Wax Pattern Assembly Operation (P1-WPA)	--	--	--	--	--	4.75	--	--	1.15	0.85 (Xylene)
Dip Manufacturing Operation (P1-DMO)[2]	1.97	1.97	1.97	--	--	--	--	--	--	--

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Shell Latex Surface Coating Booth (P1-SLC)	0.02	0.02	0.02	--	--	0.01	--	--	--	--
Sanding Towers (P1-ST)[2]	4.07	4.07	4.07	--	--	--	--	--	--	--
Aluminum Oxide Barrel Sander (P1-AOBS)	0.01	0.01	0.01	--	--	--	--	--	--	--
Dewax Furnace Process Emissions (P1-DBO-Big Bertha)	3.56	3.56	3.56	--	--	0.40	--	--	--	--
Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	2.33	2.33	2.33	--	--	--	--	--	1.00	0.75 (Cr)
Hot Topping Process (P1-HT)	--	--	--	--	--	--	--	--	7.61	7.61[8] (HF)
Mold Wrap Operation (P1-MW)	0.25	0.25	0.25	--	--	--	--	--	--	--
Spray Application Insulation Booth (P1-SAB)	0.07	0.07	0.07	--	--	0.06	--	--	3.6E-4	3.6E-4 (Methanol)
Pneumatic Shell Removal (P1-KO-01, P1-KO-02)[2]	5.69	5.69	5.69	--	--	--	--	--	--	--
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	1.40	1.40 (HCl)
Post-Cast Operations (P1-PCO) (Post-Cast Baghouse)[2,3]	2.19	2.19	2.19	--	--	--	--	--	1.88	1.41 (Cr)
Finishing Operations (P1-FO) (Carter Day Baghouse) [2,3]	8.85	8.85	8.85	--	--	--	--	--	0.92	0.64 (Cr)
Finishing Operations (P1-FO) (West Metals Baghouse) [2,3]	1.93	1.93	1.93	--	--	--	--	--	0.40	0.28 (Cr)

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	3.74	--	--	--	--
P1-Superior Boiler #3[4]	4	4	4	4	4	4	4	4	4	4
Plant 1 Total Natural Gas Combustion[4]	0.55	2.22	2.22	0.18	29.20	1.61	24.53	35,248	0.55	0.53 (Hexane)
Plant 1 Insignificant Activities										
Insignificant NG Combustion (small boilers, hot water heater, space heaters, casting ovens)[4]	4	4	4	4	4	4	4	4	4	4
Emergency Generators (P1-GEN-AUXPWR-01 & P1-GEN-AUZPWR-02)	0.38	0.38	0.38	0.35	5.35	0.43	1.15	199	0.005	0.001 (Form-aldehyde)
Potassium Hydroxide Storage Tanks	1.05	1.05	1.05	--	--	--	--	--	--	--
Insignificant Grinding and Finishing	0.13	0.06	0.06	--	--	--	--	--	--	--
Welding	0.33	0.33	0.33	--	--	--	--	--	0.28	0.15 (Cobalt)
Cooling Towers	8.88	7.28	7.28	--	--	--	--	--	--	--
Insignificant Pressure Washing Operations	0.64	0.64	0.64	--	--	--	--	--	--	--
Plant 1 Total	42.89	42.88	42.88	0.53	34.55	11.07	25.68	35,447	15.20[8]	7.61[8] (HF)
Plant 2										
Wax Pattern Assembly Operation (P2-WPA)	--	--	--	--	--	7.13	--	--	1.73	1.28 (Xylene)
Dip Slurry Preparation Process (P2-DSP)[5]	2.98	2.98	2.98	--	--	--	--	--	--	--
Shell Formation Process (P2-SFP) - High Volume Sanding[5]	5.34	5.34	5.34	--	--	--	--	--	--	--

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Shell Formation Process (P2-SFP) - Low Volume Sanding[5]	5.34	5.34	5.34	--	--	--	--	--	--	--
Dewax Burnout Furnace Process Emissions (P2-DBF)	5.34	5.34	5.34	--	--	0.60	--	--	--	--
Sticky Latex Coating Booth (P2-SLC)	0.03	0.03	0.03	--	--	0.015	--	--	--	--
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	3.55	3.55	3.55	--	--	--	--	--	1.53	1.14 (Cr)
Hot Top Operation (P2-HT)	--	--	--	--	--	--	--	--	[8]	(HF)[8]
Mold Wrap Operation (P2-MW)	0.38	0.38	0.38	--	--	--	--	--	--	--
Spray Application Insulation Booth (P2-SAB)	0.10	0.10	0.10	--	--	0.09	--	--	5.4E-4	5.4E-4 (Methanol)
Pneumatic Shell Removal (P2-KO)	2.80	2.80	2.80	--	--	--	--	--	--	--
Manual Machining & Grinding (P2-MMG)[6]	7.49	7.49	7.49	--	--	--	--	--	1.71	1.26 (Cr)
Finishing Department (P2-FD)[6]	7.49	7.49	7.49	--	--	--	--	--	3.43	2.52 (Cr)
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	5.61	--	--	--	--
Boilers (P2-B1, P2-B2, P2-B3)[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]
Plant 2 Total Natural Gas Combustion[7]	1.01	4.03	4.03	0.32	53.09	2.92	44.59	64,081	1.00	0.96 (Hexane)
Plant 2 Insignificant Activities										

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Insignificant NG Combustion (preheat and post-casting ovens (P2-PHO1 - P2-PHO7, P2-PCO1, P2-PCO2))[7]	7	7	7	7	7	7	7	7	7	7
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	0.23	0.13	0.13	1.36	8.05	0.24	1.84	390.4	0.004	0.002 (Benzene)
KOH Salt Bath (P2-KOH)	1.58	1.58	1.58	--	--	--	--	--	--	--
Autoclave Operation (P2-AC)	1.13	1.13	1.13	--	--	--	--	--	--	--
Water Blasting Operation (P2-IWBO)	0.75	0.75	0.75	--	--	--	--	--	--	--
Cooling Tower (P2-CT)	3.33	2.73	2.73	--	--	--	--	--	--	--
Grinding and Finishing	0.20	0.09	0.09	--	--	--	--	--	0.02	0.01 (Cr)
Plant 2 Total	49.06	51.28	51.28	1.67	61.13	16.60	46.44	64,471	9.41[8]	4.93 (Cr)
Total PTE of Entire Source	91.95	94.16	94.16	2.20	95.68	27.60	72.12	99,918	24.62	8.10 (Cr)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA

[1] Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
[2] The PM, PM10, and PM2.5 emissions from the Plant 1 dip manufacturing operation, sanding towers, pneumatic shell removal, post-cast, carter day, and west metals baghouses have been limited to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[3] The metal HAP emissions from the Plant 1 post-cast, carter day, and west metals baghouses have been limited to render the requirements of 326 IAC 2-4.1 (Major Sources of HAP) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[4] The natural gas usage for all Plant 1 processes requiring natural gas combustion has been limited to render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable for CO2e.
[5] The PM, PM10, and PM2.5 emissions from the Plant 2 Dip Slurry Preparation Process (P2-DSP), Shell Formation Process (P2-SFP) - High and Low Volume Sanding, Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations have been limited to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[6] The metal HAP emissions from the Plant 2 Manual Machining & Grinding (P2-MMG) and Finishing Department (P2-FD) operations have been limited to render the requirements of 326 IAC 2-4.1 (Major Sources of HAP) and 326 IAC 2-7 (Part 70 Permits) not applicable.
[7] The natural gas usage for all Plant 2 processes requiring natural gas combustion has been limited to render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable for CO2e.
[8] The limited Plant 2 Hot Top Operation (P2-HT) emissions are included with the limited Plant 1 Hot Top Operation

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10[1]	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP

(P1-HT) emissions.
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.
Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the table.

(a) FESOP Status
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

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

Unit Description	Control ID	PM10 Emission Limit (lb/hr)	PM2.5 Emission Limit (lb/hr)
Plant 1			
Dip Manufacturing Operation (P1-DMO)	FARR GS10	0.45[1]	0.45[1]
Twenty-two (22) Sanding Towers (P1-ST)	DUST-COLL-MONO-FARR	0.93[2]	0.93[2]
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	KNOCKOUT DUST COLLECTOR	1.30[2]	1.30[2]
Post-Cast Operations (P1-PCO)	Post-Cast	0.50[2]	0.50[2]
Finishing Operations (P1-FO)	Carter Day	2.02[2]	2.02[2]
Finishing Operations (P1-FO)	West Metals	0.44[2]	0.44[2]
Plant 2			
Dip Slurry Preparation Process (P2-DSP)	DC-101	0.68[3]	0.68[3]
Shell Formation Process (P2-SFP) - High Volume Sanding	DC-103	1.22[3]	1.22[3]
Shell Formation Process (P2-SFP) - Low Volume Sanding	DC-102	1.22[3]	1.22[3]
Pneumatic Shell Removal (P2-KO)	DC-105	0.64[3]	0.64[3]
Manual Machining & Grinding (P2-MMG)	DC-100	1.71[3]	1.71[3]
Finishing Department (P2-FD)	DC-106	0.57[3]	0.57[3]
	DC-107	0.57[3]	0.57[3]
	DC-108	0.57[3]	0.57[3]

[1] This is a new limit for an existing unit.
[2] This is a revised limit for an existing unit.
[3] This is a new limit for a new unit.

(2) The Nickel, Chromium, and Cobalt emissions from the following units shall be limited to less than the values listed in the table below:

Unit Description	Control ID	Nickel Emission Limit (lb/hr)	Chromium Emission Limit (lb/hr)	Cobalt Emission Limit (lb/hr)
Plant 1				
Post-Cast Operations (P1-PCO)	Post-Cast	0.082[1]	0.321[1]	0.027[1]
Finishing Operations (P1-FO)	Carter Day	0.042[1]	0.146[1]	0.021[1]
Finishing Operations (P1-FO)	West Metals	0.021[1]	0.065[1]	0.005[1]
Plant 2				
Manual Machining & Grinding (P2-MMG)	DC-100	0.079[2]	0.287[2]	0.024[2]
Finishing Department (P2-FD)	DC-106	0.053[2]	0.192[2]	0.016[2]
	DC-107	0.053[2]	0.192[2]	0.016[2]
	DC-108	0.053[2]	0.192[2]	0.016[2]

[1] This is a revised limit for an existing unit.
[2] This is a new limit for a new unit.

(3) The HF emissions from the Plant 1 and Plant 2 Hot Top Operations shall be limited as follows:

(1) The total Ferrux usage rate for the Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT) shall not exceed 450,000 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) The HF emissions shall not exceed 0.0338 pound HF per pound Ferrux.

The emission factor was determined as follows:

(0.053 lb F_6Na_2Si/lb Ferrux) x (1 lbmol F_6Na_2Si/188.05594 lb) x
(6 lbmol HF/lbmol F_6Na_2Si) x (20.0063 lb HF/lbmol)

(4) Emissions from natural gas combustion shall be limited as follows:

(A) The total natural gas usage at Plant 1 shall be less than 584 MMCF per twelve (12) consecutive month period, with compliance determined at the end of each month.

(B) The total natural gas usage at Plant 2 shall be less than 1061.7 MMCF per twelve (12) consecutive month period, with compliance determined at the end of each month.

(C) Carbon Dioxide (CO2) emissions from natural gas combustion shall not exceed 120,000 pounds per million cubic foot (lb/MMCF).

(D) Methane (CH4) emissions from natural gas combustion shall not exceed 2.3 pounds per million cubic foot (lb/MMCF).

(E) Nitrous oxide (N2O) emissions from natural gas combustion shall not exceed 2.2. pounds per million cubic foot (lb/MMCF).

(F) The Global Warming Potential (GWP) for carbon dioxide (CO2) shall not exceed 1.0.

(G) The Global Warming Potential (GWP) for methane (CH4) shall not exceed 25.

(H) The Global Warming Potential (GWP) for nitrous oxide (N2O) shall not exceed 298.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, greenhouse gases (GHGs), nickel, chromium, and cobalt from all other emission units at this source, shall limit the source-wide total potential to emit of PM and PM10 to less than 100 tons per twelve (12) consecutive month period, each, of single HAP emissions to less than ten (10) tons per twelve (12) consecutive month period, of total HAP emissions to less than twenty-five (25) tons per twelve (12) consecutive month period, and of GHGs to less than 100,000 tons of CO2 equivalent (CO2e) emissions per twelve (12) consecutive month period, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

(b) PSD Minor Source
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control ID	PM Emission Limit (lb/hr)
Plant 1		
Dip Manufacturing Operation (P1-DMO)	FARR GS10	0.45[1]
Twenty-two (22) Sanding Towers (P1-ST)	DUST-COLL-MONO-FARR	0.93[2]
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	KNOCKOUT DUST COLLECTOR	1.30[2]
Post-Cast Operations (P1-PCO)	Post-Cast	0.50[2]
Finishing Operations (P1-FO)	Carter Day	2.02[2]
Finishing Operations (P1-FO)	West Metals	0.44[2]
Plant 2		
Dip Slurry Preparation Process (P2-DSP)	DC-101	0.68[3]
Shell Formation Process (P2-SFP) - High Volume Sanding	DC-103	1.22[3]
Shell Formation Process (P2-SFP) - Low Volume Sanding	DC-102	1.22[3]
Pneumatic Shell Removal (P2-KO)	DC-105	0.64[3]
Manual Machining & Grinding (P2-MMG)	DC-100	1.71[3]
Finishing Department (P2-FD)	DC-106	0.57[3]
	DC-107	0.57[3]
	DC-108	0.57[3]

Unit Description	Control ID	PM Emission Limit (lb/hr)
[1] This is a new limit for an existing unit. [2] This is a revised limit for an existing unit. [3] This is a new limit for a new unit.		

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) 40 CFR 60.40, Subpart D: Standards of Performance for Fossil-Fuel-Fired Steam Generators
The requirements of 40 CFR 60, Subpart D are not included in the permit for the three (3) Plant 2 natural gas-fired boilers (P2-B1 - P2-B3) because they do not have heat input rates of greater than 250 MMBtu/hr.

(b) 40 CFR 60.40b, Subpart Db: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
The requirements of 40 CFR 60, Subpart Db are not included in the permit for the three (3) Plant 2 natural gas-fired boilers (P2-B1 - P2-B3) because they do not have heat input capacities of greater than 100 MMBtu/hr.

(c) 40 CFR 60.40c, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
The three (3) Plant 2 natural gas-fired boilers (P2-B1 - P2-B3) are subject to the requirements of 40 CFR 60, Subpart Dc, which are incorporated by reference as 326 IAC 12, because construction will be commenced after June 9, 1989 and they each have heat input capacities of less than 100 MMBtu/hr and greater than ten (10) MMBtu/hr. The following boilers are considered affected facilities under 40 CFR 60, Subpart Dc:

- Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

The entire rule is included as Attachment C to the permit. Boilers P2-B1 - P2-B3 are subject to the following portions of NSPS, Subpart Dc:

(1) 40 CFR 60.40c(a), (b), (c), (d)
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a), (g)(2), (i), (j)

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to boilers P2-B1 - P2-B3 except as otherwise specified in 40 CFR 60, Subpart Dc.

(d) 40 CFR 60.50, Subpart E: Standards of Performance for Incinerators
The requirements of 40 CFR 60, Subpart E are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because the furnace does not meet the definition of an incinerator in Subpart E because it does not burn solid waste and it will charge less than 50 tons per day.

(e) 40 CFR 60.50b, Subpart Eb: Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996
The requirements of 40 CFR 60, Subpart Eb are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because the furnace does not meet the definition of a municipal waste combustor in Subpart Eb because it does not combust municipal solid waste.

(f) 40 CFR 60.1000, Subpart AAAA: Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001
The requirements of 40 CFR 60, Subpart AAAA are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because the furnace does not meet the definition of a municipal waste combustion unit, as defined in Subpart AAAA, because it does not combust municipal solid waste.

(g) 40 CFR 60.2000, Subpart CCCC: Standards of Performance for Commercial and Industrial Solid Waste Incineration Units (CISWI)
The requirements of 40 CFR 60, Subpart CCCC are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because pursuant to 40 CFR 60.2265, the Dewax Furance does not meet the definition of an incinerator for purposes of Subpart CCCC because it meets the definition of a burn-off oven. The Dewax Burnout Furnace is used to burn off the wax forms from the ceramic shells in order to reclaim the shells to make castings.

(h) 40 CFR 60.2500, Subpart DDDD: Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units
The requirements of 40 CFR 60, Subpart DDDD are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because the furnace is not operated by a state program or United States protectorate.

(i) 40 CFR 60.2880, Subpart EEEE: Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006
The requirements of 40 CFR 60, Subpart EEEE are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because the furnace is not a very small municipal waste combustion unit since it does not combust municipal solid waste or refuse-derived fuel and it is not an institutional waste incineration unit.

(j) 40 CFR 60.4200, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
The two (2) Plant 2 diesel-fired emergency generators (P2-EG1 and P2-EG2) are subject to the provisions of 40 CFR 60, Subpart IIII, which are incorporated by reference as 326 IAC 12, because they are compression ignition internal combustion engines in which construction will commence after July 11, 2005 and they will be manufactured after April 1, 2006. The affected facilities are described as follows:

- Two (2) Diesel Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

The entire rule is included as Attachment D to the permit. Emergency generators P2-EG1 and P2-EG2 are subject to the following portions of NSPS, Subpart IIII:

(1) 40 CFR 60.4200(a)(2)(i), (c)
(2) 40 CFR 60.4202(a)(2)
(3) 40 CFR 60.4205(b), (e)
(4) 40 CFR 60.4206

(5) 40 CFR 60.4207(b)
(6) 40 CFR 60.4208(a), (h), (i)
(7) 40 CFR 60.4209(a)
(8) 40 CFR 60.4211(a), (c), (f), (g)
(9) 40 CFR 60.4212
(10) 40 CFR 60.4214(b), (d)
(11) 40 CFR 60.4218
(12) 40 CFR 60.4219
(13) Table 5 to Subpart IIII of Part 60
(14) 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 emergency generators P2-EG1 and P2-EG2 except as otherwise specified in 40 CFR 60, Subpart IIII.

(k) 40 CFR 60.4230, Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
The requirements of 40 CFR 60, Subpart JJJJ are not included in the permit for the two (2) Plant 2 diesel-fired emergency generators (P2-EG1 and P2-EG2) because these units are compression ignition internal combustion engines.

(l) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this proposed revision.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(m) 40 CFR 63.400, Subpart Q: National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers
The requirements of 40 CFR 63, Subpart Q are not included in the permit for the Plant 2 cooling tower (P2-CT) because the cooling tower is not operated with chromium-based water treatment chemicals and it is not a major source of HAPs or part of a major source of HAPs.

(n) 40 CFR 63.1200, Subpart EEE: National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors
The requirements of 40 CFR 63, Subpart EEE are not included in the permit for the Plant 2 Dewax Burnout Furnace (P2-DBF) because it is not a hazardous waste incinerator since it does not burn hazardous waste.

(o) 40 CFR 63.1500, Subpart RRR: National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production
The requirements of 40 CFR 63, Subpart RRR are not included in the permit for the source because it is not a secondary aluminum production facility as defined in Subpart RRR and it is not located at a major source of HAPs.

(p) 40 CFR 63.6580, Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
The two (2) Plant 2 diesel-fired emergency generators (P2-EG1 and P2-EG2) are subject to the provisions of 40 CFR 63, Subpart ZZZZ, which are incorporated by reference as 326 IAC 20-82, because they are stationary reciprocating internal combustion engines located at an area source of HAPs. Pursuant to 40 CFR 63.6590(a)(2)(iii), the emergency generators are considered new affected sources because construction will commence after June 12, 2006. The emergency generators are described as follows:

- Two (2) Diesel Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Pursuant to 40 CFR 63.6590(c)(1), P2-EG1 and P2-EG2 must meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII.

The entire rule is included as Attachment B to the permit. Emergency generators P2-EG1 and P2-EG2 are subject to the following portions of NESHAP, Subpart ZZZZ:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), (d)
(3) 40 CFR 63.6590(a)(2)(iii), (c)(1)
(4) 40 CFR 63.6595(a)(7)
(5) 40 CFR 63.6665
(6) 40 CFR 63.6670
(7) 40 CFR 63.6675

Pursuant to 40 CFR 63.6665, the emergency generators P2-EG1 and P2-EG2 do not have to meet the requirements of 40 CRF 63, Subpart A (General Provisions), since they are considered new stationary RICE located at an area source of HAP emissions.

(q) 40 CFR 63.7480, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
The requirements of 40 CFR 63, Subpart DDDDD are not included in the permit for the three (3) Plant 2 natural gas-fired boilers (P2-B1 - P2-B3) because they are not part of a major source of HAPs.

(r) 40 CFR 63.7680, Subpart EEEEE: National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries
The requirements of 40 CFR 63, Subpart EEEEE are not included in the permit because the source is a metal alloy casting plant and is not an iron and steel foundry as defined in Subpart EEEEE. Additionally, the source is not a major source of HAPs.

(s) 40 CFR 63.10880, Subpart ZZZZZ: National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources
The requirements of 40 CFR 63, Subpart ZZZZZ are not included in the permit because the source is a metal alloy casting plant and is not an iron and steel foundry as defined in Subpart ZZZZZ.

(t) 40 CFR 63.11193, Subpart JJJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources
The requirements of 40 CFR 63, Subpart JJJJJJ are not included in the permit for the Plant 2 natural gas-fired boilers (P2-B1 - P2-B3) because pursuant to 40 CFR 63.11195(e), gas-fired boilers are not subject to NESHAP, Subpart JJJJJJ.

(u) 40 CFR 63.11462, Subpart TTTTTT: National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources
The requirements of 40 CFR 63, Subpart TTTTTT are not included in the permit because the source does not meet the definition of a secondary nonferrous metals processing facility as defined in Subpart TTTTTT (i.e. it is not a brass and bronze ingot making plant, a secondary magnesium processing plant, or a secondary zinc processing plant).

(v) 40 CFR 63.11514, Subpart XXXXXX: National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
The requirements of 40 CFR 63, Subpart XXXXXX are not included in the permit because the source is not primarily engaged in one of the nine source categories listed in Subpart XXXXXX.

(w) 40 CFR 63.11524, Subpart YYYYYY: National Emission Standards for Hazardous Air Pollutants for Area Sources: Ferroalloys Production Facilities

The requirements of 40 CFR 63, Subpart YYYYYY are not included in the permit because the source is not a ferroalloys production facility because it does not manufacture the items indicated in 40 CFR 63.11524(a).

(x) 40 CFR 63.11544, Subpart ZZZZZZ: National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries

(1) The four (4) Plant 2 induction ovens (P2-EIO1 - P2-EIO4) are subject to the requirements of 40 CFR 63, Subpart ZZZZZZ because the source meets the definition of "other nonferrous foundry" in Subpart ZZZZZZ, since it melts nonferrous metals for complex metal castings and uses material containing "other nonferrous foundry HAP" (chromium and nickel), has an annual metal melt capacity of greater than 600 tons per year, and the source is an area source of HAP emissions. Pursuant to 40 CFR 63.11544(b), the affected source is the collection of all melting operations located at an aluminum, copper, or other nonferrous foundry. The units subject to Subpart ZZZZZZ are described as follows:

- Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, each with a maximum capacity of 0.89 ton per hour, and with emissions uncontrolled.

Pursuant to 40 CFR 63.11544(d), ovens P2-EIO1 - P2-EIO4 are considered new affected sources because construction will commence after February 9, 2009. Pursuant to 40 CFR 63.11545, the source must achieve compliance with Subpart ZZZZZZ upon startup of the affected sources.

The entire rule is included as Attachment A to the permit. Electric induction ovens P2-EIO1 - P2-EIO4 are subject to the following portions of NESHAP, Subpart ZZZZZZ:

(1) 40 CFR 63.11544(a)(3), (a)(4), (b), (d), (f)
(2) 40 CFR 63.11545(c)
(3) 40 CFR 63.11550(a), (b)(2), (d)
(4) 40 CFR 63.11551(a), (c)
(5) 40 CFR 63.11552(a)
(6) 40 CFR 63.11553
(7) 40 CFR 63.11555
(8) 40 CFR 63.11556
(9) 40 CFR 63.11557
(10) Table 1 to Subpart ZZZZZZ of Part 63

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the induction ovens P2-EIO1 - P2-EIO4 except as otherwise specified in 40 CFR 63, Subpart ZZZZZZ.

(2) The six (6) existing Plant 1 induction ovens are currently subject to the requirements of 40 CFR 63, Subpart ZZZZZZ. Due to the addition of the four (4) Plant 2 induction ovens, the source will now be classified as a large foundry since the annual metal melt capacity will exceed 6,000 tons per year. The requirements for the existing induction ovens, due to this change, are indicated in 40 CFR 63.11550(c). The six (6) Electric Induction Ovens, identified as P1-EIO2, 5, 6, 8, 9, and 10, are now subject to the following provisions of NESHAP, Subpart ZZZZZZ:

(1) 40 CFR 63.11544(a)(3), (a)(4), (b), (c), (f)
(2) 40 CFR 63.11545(a)
(3) 40 CFR 63.11550(a), (b)(1), (c), (d)
(4) 40 CFR 63.11551
(5) 40 CFR 63.11552(a), (b)
(6) 40 CFR 63.11553

(7) 40 CFR 63.11555
(8) 40 CFR 63.11556
(9) 40 CFR 63.11557
(10) Table 1 to Subpart ZZZZZZ of Part 63

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the induction ovens P1-EIO2, 5, 6, 8, 9, and 10 except as otherwise specified in 40 CFR 63, Subpart ZZZZZZ.

(y) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included for this proposed revision.

Compliance Assurance Monitoring (CAM)

(z) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following is a discussion of the state rule applicability due to the proposed revision:

Entire Source

326 IAC 2-8-4 (FESOP)
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit of HAPs from the new units is greater than ten (10) tons per year for any single HAP and greater than twenty-five (25) tons per year of a combination of HAPs. However, the source shall limit the potential to emit of HAPs from the entire source to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the proposed revision is not subject to the requirements of 326 IAC 2-4.1. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1(a)(2), this rule applies to source all source located in Lake, Porter, and LaPorte Counties that emit VOC or NOx into the ambient air at levels equal to or greater than twenty-five (25) tons per year. Since this source is located in LaPorte County, and has the potential to emit greater than or equal to twenty-five (25) tons of NOx per year, an emission statement covering the previous calendar year must be submitted by July 1 of each year when actual NOx emissions are equal to or greater than twenty-five (25) tons per year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

Note: If actual NOx emissions are less than twenty-five tons per year the source does not have to

submit an emission statement.

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

(1) 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.

(2) 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.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5 because the source does not have potential fugitive particulate matter emissions of twenty-five (25) tons per year or more.

326 IAC 7-4-5 (LaPorte County Sulfur Dioxide Emission Limitations)
The requirements of 326 IAC 7-4-5 are not applicable to this source because it is not one of the specifically listed sources.

326 IAC 11-1 (Existing Foundries)
This rule establishes specific emission limitations for particulate matter from foundries in operation on or before December 6, 1968. Foundries beginning operation after December 6, 1968 are required to comply with the emission limits specified in 362 IAC 6-3. This rule is not applicable to this source since the foundry was not in existence prior to December 6, 1968.

326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

<u>Plant 1: Mold Wrapping, Spray Application Insulation Booth, Finishing Booth, and Fluorescent Penetrant Inspection Operation</u>

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
(a) Pursuant to 326 IAC 6-3-1(b)(14), the Plant 1 Mold Wrap Operation (P1-MW), the Finishing Booth, and the Fluorescent Penetrant Inspection Operation (P1-FPI) are exempt from 326 IAC 6-3 because the potential emissions are less than 0.551 pound per hour for each.

(c) Pursuant to 326 IAC 6-3-1(b)(15) and 326 IAC 6-3-2(d)(4), the Plant 1 Spray Application Insulation Booth (P1-SAB) is exempt from 326 IAC 6-3 because it uses less than five (5) gallons of coating per day.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)
(a) The Plant 1 Spray Application Insulation Booth (P1-SAB) and Fluorescent Penetrant Inspection Operation (P1-FPI) are new facilities; however the potential VOC emissions

are less than twenty-five (25) tons per year each. Therefore, P1-SAB and P1-FPI are not subject to the requirements of 326 IAC 8-1-6.

(b) The Plant 1 Mold Wrap Operation (P1-MW) does not have potential VOC emissions. Therefore, this unit is not subject to the requirements of 326 IAC 8-1-6.

326 IAC 8-2 (Surface Coating Emission Limitations)
The Plant 1 Spray Application Insulation Booth (P1-SAB) does not have potential VOC emissions greater than fifteen (15) pounds per day. Additionally the operation does not involve any of the types of surface coating activities described in sections 2 through 13 of this rule. The Plant 1 Spray Insulation Booth is used to spray insulation and a binder on ceramic shells. Therefore, no requirements of 326 IAC 8-2 are included in this permit for P1-SAB.

Plant 2: Wax Pattern Assemby Operation (P2-WPA)

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(5) and (8), the Wax Pattern Assembly Operation (P2-WPA) is exempt from the requirements of 326 IAC 6-3 when applying coatings using dip or brush application methods.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)
The Wax Pattern Assembly Operation (P2-WPA) is a new facility; however, the potential VOC emissions are less than twenty-five (25) tons per year. Therefore, the Wax Pattern Assembly Operation is not subject to the requirements of 326 IAC 8-1-6.

326 IAC 8-2 (Surface Coating Emission Limitations)
The Wax Pattern Assembly Operation (P2-WPA) has potential VOC emissions greater than fifteen (15) pounds per day, but the operation does not involve any of the types of surface coating activities described in sections 2 through 13 of this rule. The Wax Pattern Assembly Operation applies various solvents to wax patterns and ceramic cores. Therefore, no requirements of 326 IAC 8-2 are included in this permit for P2-WPA.

Plant 2: Ceramic Mold Operation

326 IAC 4-2 (Incinerators)
The natural gas-fired Dewax Burnout Furnace (P2-DBF) is used to destroy any wax pattern cluster components trapped inside the ceramic shell assembly. The residual wax pattern cluster components are considered a waste. Therefore, P2-DBF is considered an incinerator, as defined in 326 IAC 1-2-34, and is subject to the requirements of 326 IAC 4-2 because it is not subject to any of the rules identified in 326 IAC 4-2-1(b)(2).

Pursuant to 326 IAC 4-2-2(a), the Dewax Burnout Furnace (P2-DBF) shall comply with the following requirements:

(1) Consist of primary and secondary chambers or the equivalent.

(2) Be equipped with a primary burner unless burning wood products.

(3) Comply with 326 IAC 5-1 and 326 IAC 2.

(4) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in 326 IAC 4-2-2(c).

(5) Not emit particulate matter in excess of one (1) of the following:

(A) Three-tenths (0.3) pounds of particulate matter per one thousand (1,000) pounds

of dry exhaust gas under standard conditions correct to fifty percent (50%) excess air for incinerators with solid waste capacity of greater than or equal to two hundred (200) pounds per hour.

(B) Five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity of less than two hundred (200) pounds per hour.

(6) If any requirements of 326 IAC 4-2-2(a)(1) through 326 IAC 4-2-2(a)(5) above are not met, the source shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

(a) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from each of the following operations shall not exceed the pounds per hour limits listed in the table below when operating at the respective process weight rates:

Unit	Max Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Rate (lb/hr)	Uncontrolled PTE PM (lb/hr)	Controlled PTE PM (lb/hr)	Capable of complying with 326 IAC 6-3-2?
Dip Slurry Preparation Process (P2-DSP)	2.12	6.78	2.26	0.002	Yes - without control
Shell Formation Process (P2-SFP)	0.99	4.07	812.0	0.81	Yes - with control

The pound per hour limitations were calculated with the following equation:

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

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

Based on calculations, the Dip Slurry Preparation Process (P2-DSP) is capable of complying with the 326 IAC 6-3-2 limit without the use of a control device. The Shell Formation Process (P2-SFP) is capable of complying with the 326 IAC 6-3-2 limit with the use of a control device. Therefore, the Monoshell Dust Collectors (DC-102 and DC-103) shall be in operation at all times the respective Shell Formation Processes are in operation.

(b) Pursuant to 326 IAC 6-3-1(b)(15) and 326 IAC 6-3-2(d)(4), the Sticky Latex Coating Booth (P2-SLC) is exempt from 326 IAC 6-3 because it uses less than five (5) gallons of coating per day.

(c) Pursuant to 326 IAC 6-3-1(b)(2), the natural gas-fired Dewax Burnout Furnace (P2-DBF) is not subject to the requirements of 326 IAC 6-3 because incineration is exempt from the rule.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)

(a) The Sticky Latex Coating Booth (P2-SLC) and the Dewax Burnout Furnace (P2-DBF) are new facilities; however the potential VOC emissions are less than twenty-five (25) tons per year for both facilities. Therefore, the Sticky Latex Coating Booth and Dewax Burnout

Furnace are not subject to the requirements of 326 IAC 8-1-6.

(b) The Dip Slurry Preparation Process (P2-DSP) and Shell Formation Process (P2-SFP) do not have potential VOC emissions. Therefore, these units are not subject to the requirements of 326 IAC 8-1-6.

326 IAC 8-2 (Surface Coating Emission Limitations)
The Sticky Latex Coating Booth (P2-SLC) does not have potential VOC emissions greater than fifteen (15) pounds per day. Additionally the operation does not involve any of the types of surface coating activities described in sections 2 through 13 of this rule. The Sticky Latex Coating Operation is used to spray coat wax forms with latex. Therefore, no requirements of 326 IAC 8-2 are included in this permit for P2-SLC.

326 IAC 9-1 (Carbon Monoxide Emission Limits)
Pursuant to 326 IAC 9-1-1(a), the requirements of 326 IAC 9-1 are applicable to all stationary sources of carbon monoxide emissions commencing operation after March 21, 1972 and for which an emission limit has been established in 326 IAC 9-1-2. Requirements for refuse incineration and refuse burning equipment is included in 326 IAC 9-1-2; therefore, the Dewax Burnout Furnace (P2-DBF) is subject to the requirements of 326 IAC 9-1.

Pursuant to 326 IAC 9-1-2(a)(3), the Dewax Burnout Furnace (P2-DBF) shall not be in operation unless the waste gas stream is burned in one (1) of the following:

(a) Direct-flame afterburner.

(b) Secondary chamber.

The Dewax Burnout Furnace (P2-DBF) shall be equipped with an afterburner. Therefore, the unit will be capable of complying with 326 IAC 9-1.

<u>Plant 2: Metal Melting and Auxiliary Operations</u>

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
(a) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the four (4) Electric Induction Ovens (P2-EIO1 - P2-EIO4) shall not exceed 3.79 pounds per hour when operating at a process weight rate of 0.89 ton per hour

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

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

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

Based on calculations, the four (4) Electric Induction Ovens (P2-EIO1 - P2-EIO4) are capable of complying with the 326 IAC 6-3-2 limit without the use of a control device.

(b) Pursuant to 326 IAC 6-3-1(b)(14), the Hot Top Operation (P2-HT) and Mold Wrap Operation (P2-MW) are exempt from 326 IAC 6-3 because they each have potential emissions less than 0.551 pound per hour.

(c) Pursuant to 326 IAC 6-3-1(b)(15) and 326 IAC 6-3-2(d)(4), the Spray Application Insulation Booth (P2-SAB) is exempt from 326 IAC 6-3 because it uses less than five (5) gallons of coating per day.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)

(a) The Spray Application Insulation Booth (P2-SAB) is a new facility; however the potential VOC emissions are less than twenty-five (25) tons per year. Therefore, the Spray Application Insulation Booth (P2-SAB) is not subject to the requirements of 326 IAC 8-1-6.

(b) The Electric Induction Ovens (P2-EIO1 - P2-EIO4), the Hot Top Operation (P2-HT), and the Mold Wrap Operation (P2-MW) do not have potential VOC emissions. Therefore, these units are not subject to the requirements of 326 IAC 8-1-6.

326 IAC 8-2 (Surface Coating Emission Limitations)

The Spray Application Insulation Booth (P2-SAB) does not have potential VOC emissions greater than fifteen (15) pounds per day. Additionally the operation does not involve any of the types of surface coating activities described in sections 2 through 13 of this rule. The Spray Application Insulation Booth is used to spray insulation and a binder on ceramic shells. Therefore, no requirements of 326 IAC 8-2 are included in this permit for P2-SAB.

Plant 2: Pneumatic Shell Removal

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the Pneumatic Shell Removal (Knockout) Operation (P2-KO) shall not exceed 3.79 pounds per hour when operating at a process weight rate of 0.89 ton per hour

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

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

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

Based on calculations, the Knockout Operation (P2-KO) is capable of complying with the 326 IAC 6-3-2 limit with the use of a control device. Therefore, the Knockout Dust Collector (DC-105) shall be in operation at all times the Knockout Operation is in operation.

326 IAC 8 (VOC Rules)

The Knockout Operation (P2-KO) does not have potential VOC emissions. Therefore, no rules in 326 IAC 8 are applicable to this process.

Plant 2: Manual Machining & Grinding and Finishing Department

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from each of the following operations shall not exceed the pounds per hour limits listed in the table below when operating at the respective process weight rates:

Unit	Max Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Rate (lb/hr)	Uncontrolled PTE PM (lb/hr)	Controlled PTE PM (lb/hr)	Capable of complying with 326 IAC 6-3-2?
Manual Machining & Grinding (P2-MMG)	0.89	3.79	572.6	0.57	Yes - with control

Unit	Max Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Rate (lb/hr)	Uncontrolled PTE PM (lb/hr)	Controlled PTE PM (lb/hr)	Capable of complying with 326 IAC 6-3-2?
Finishing Department (P2-FD)	0.89	3.79	572.6	0.57	Yes - with control

The pound per hour limitations were calculated with the following equation:

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

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

Based on calculations, the Manual Machining & Grinding (P2-MMG) and Finishing Department (P2-FD) are capable of complying with the 326 IAC 6-3-2 limits with the use of a control device. Therefore, the Manual Machining & Grinding Dust Collector (DC-100) and the Finishing Dust Collectors (DC-106, DC-107, and DC-108) shall be in operation at all times the respective processes are in operation.

326 IAC 8 (VOC Rules)
The Manual Machining & Grinding (P2-MMG) and Finishing Department (P2-FD) operations do not have potential VOC emissions. Therefore, no rules in 326 IAC 8 are applicable to these processes.

Plant 2: Fluorescent Penetrant Inspection Operation

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The Fluorescent Penetrant Inspection Operation (P2-FPI) is not subject to the requirements of 326 IAC 6-3 because the operation does not generate potential particulate emissions.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)
The Fluorescent Penetrant Inspection Operation (P2-FPI) is a new facility; however the potential VOC emissions are less than twenty-five (25) tons per year. Therefore, P2-FPI is not subject to the requirements of 326 IAC 8-1-6.

Plant 2: Natural Gas-Fired Boilers

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
Pursuant to 326 IAC 6-2-1(d), particulate emissions from the combustion of fuel for indirect heating from all facilities receiving permits to construct on or after September 21, 1983, shall be limited by 326 IAC 6-2-4.

Pursuant to 326 IAC 6-2-4(a), particulate emissions from the three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) shall be limited to 0.36 pound per MMBtu heat input, each.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Pt = Pounds of particulate matter emitted per million Btu heat input.

Q = Total source maximum operating capacity rating in MMBtu/hr heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

Q was determined as follows:

Unit	Capacity (MMBtu/hr)	Year Installed	Q
Boiler (P1-Superior Boiler #3)	13.4	1957	13.4
Hot Water Heater	0.65	1989	14.05
Boiler (P1-BOILER-EAST)	4.2	1991	20.55
Boiler (P1-BOILER-HUMIDITY)	2.3	1991	20.55
Boiler (P1-BOILER-DEGREASE)	1.4	1994	21.95
Boiler P2-B1	16	2014	69.95
Boiler P2-B2	16	2014	69.95
Boiler P2-B3	16	2014	69.95

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(1), combustion for indirect heating is exempt from the requirements of 326 IAC 6-3. Therefore, the three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) are not subject to 326 IAC 6-3-2.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
The three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) are not subject to the requirements of 326 IAC 7-1.1 because the potential to emit of each of the boilers is less than twenty-five (25) tons per year and ten (10) pounds per hour of sulfur dioxide.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)
The three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) are new facilities; however the potential VOC emissions are less than twenty-five (25) tons per year for each facility. Therefore, the Natural Gas-Fired Boilers (P2-B1 - P2-B3) are not subject to the requirements of 326 IAC 8-1-6.

326 IAC 9-1 (Carbon Monoxide Emission Limits)
Pursuant to 326 IAC 9-1-1(a), the requirements of 326 IAC 9-1 are applicable to all stationary sources of carbon monoxide emissions commencing operation after March 21, 1972 and for which an emission limit has been established in 326 IAC 9-1-2. There are no limits applicable to the three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) included in 326 IAC 9-1-2. Therefore, boilers P2-B1 - P2-B3 are not subject to 326 IAC 9-1.

Plant 2: Insignificant Activities

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The seven (7) Natural Gas-Fired Shell Preheat Ovens (P2-PHO1 - P2-PHO7) and the two (2) Natural Gas-Fired Post-Casting Ovens (P2-PCO1 and P2-PCO2) are direct-fired units. Therefore, P2-PHO1 - P2-PHO7, P2-PCO1, and P2-PCO2 are not subject to the requirements of 326 IAC 6-2.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

(a) Pursuant to 326 IAC 6-3-1(b)(14), the following units are exempt from the requirements of 326 IAC 6-3 because they each have potential particulate emissions less than 0.551 pound per hour:

- Seven (7) Natural Gas-Fired Shell Preheat Ovens (P2-PHO1 - P2-PHO7)
- Two (2) Natural Gas-Fired Post-Casting Ovens (P2-PCO1 and P2-PCO2)
- Two (2) Diesel-Fired Emergency Generators (P2-EG1 and P2-EG2)
- One (1) KOH Salt Bath Operation (P2-KOH)
- One (1) Autoclave Operation (P2-AC)
- One (1) Water Blasting Operation (P2-IWBO)
- Insignificant Grinding and Finishing Operations

(b) Pursuant to 326 IAC 6-3-1(b)(11), the Cooling Tower (P2-CT) is exempt from the requirements of 326 IAC 6-3 because it is a noncontact cooling tower.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The seven (7) Natural Gas-Fired Shell Preheat Ovens (P2-PHO1 - P2-PHO7), the two (2) Natural Gas-Fired Post-Casting Ovens (P2-PCO1 and P2-PCO2), and the two (2) Emergency Diesel-Fired Generators (P2-EG1 and P2-EG2) are not subject to the requirements of 326 IAC 7-1.1 because the potential to emit of each of the units is less than twenty-five (25) tons per year and ten (10) pounds per hour of sulfur dioxide.

326 IAC 8-1-6 (General Reduction Requirements for New Facilities)

The seven (7) Natural Gas-Fired Shell Preheat Ovens (P2-PHO1 - P2-PHO7), the two (2) Natural Gas-Fired Post-Casting Ovens (P2-PCO1 and P2-PCO2), and the two (2) Emergency Diesel-Fired Generators (P2-EG1 and P2-EG2) are new facilities; however the potential VOC emissions are less than twenty-five (25) tons per year for each facility. Therefore, the above listed units are not subject to the requirements of 326 IAC 8-1-6.

326 IAC 9-1 (Carbon Monoxide Emission Limits)

Pursuant to 326 IAC 9-1-1(a), the requirements of 326 IAC 9-1 are applicable to all stationary sources of carbon monoxide emissions commencing operation after March 21, 1972 and for which an emission limit has been established in 326 IAC 9-1-2. There are no limits applicable to the seven (7) Natural Gas-Fired Shell Preheat Ovens (P2-PHO1 - P2-PHO7), the two (2) Natural Gas-Fired Post-Casting Ovens (P2-PCO1 and P2-PCO2), or the two (2) Emergency Diesel-Fired Generators (P2-EG1 and P2-EG2) included in 326 IAC 9-1-2. Therefore, the above listed units are not subject to 326 IAC 9-1.

326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))

The requirements of 326 IAC 10-5 are not applicable to the two (2) Diesel-Fired Emergency Generators (P2-EG1 and P2-EG2) because these units are not large NOx SIP Call engines.

Compliance Determination, Monitoring and Testing Requirements

(a) The compliance determination and monitoring requirements applicable to this proposed revision are as follows:

Emission Unit/Control	Operating Parameters	Frequency	Range	Excursions and Exceedances
FARR GS10 Dust Collector	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Dip Dust Collector (DC-101)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps

Emission Unit/Control	Operating Parameters	Frequency	Range	Excursions and Exceedances
Monoshell Dust Collector (DC-103)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Monoshell Dust Collector (DC-102)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Knockout Dust Collector (DC-105)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Manual Machining & Grinding Dust Collector (DC-100)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Finishing Dust Collector (DC-106)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Finishing Dust Collector (DC-107)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps
Finishing Dust Collector (DC-108)	Pressure Drop	Once per day	0.2 - 8.0	Response Steps

These monitoring conditions are necessary because the dust collectors must operate properly to ensure compliance with 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) and 326 IAC 2-8 (FESOP) and in order to render 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-4.1 (Major Sources of HAPs) not applicable.

Note: A new compliance monitoring requirement is being included for the Plant 1 Dip Manufacturing Operation dust collector (FARR GS10) because the unit now has PM, PM10, and PM2.5 emission limits in order to render 326 IAC 2-2 (PSD) not applicable.

(b) The testing requirements applicable to this proposed revision are as follows:

Testing Requirements				
Emission Unit	**Control Device**	**Pollutant**	**Timeframe for Testing**	**Frequency of Testing**
Shell Formation Process (P2-SFP)	Monoshell Dust Collector (DC-102)	PM, PM10, PM2.5	180 days from startup	Once every 5 years
	Monoshell Dust Collector (DC-103)	PM, PM10, PM2.5	180 days from startup	Once every 5 years
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	PM, PM10, PM2.5	180 days from startup	Once every 5 years
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	PM, PM10, PM2.5, nickel, chromium, cobalt	180 days from startup	Once every 5 years
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	PM, PM10, PM2.5, nickel, chromium, cobalt	180 days from startup	Once every 5 years
	Finishing Dust Collector (DC-107)	PM, PM10, PM2.5, nickel, chromium, cobalt	180 days from startup	Once every 5 years
	Finishing Dust Collector (DC-108)	PM, PM10, PM2.5, nickel, chromium, cobalt	180 days from startup	Once every 5 years

Proposed Changes

The changes listed below have been made to FESOP No. F091-31556-00047. These corrections, changes, and removals may include Title I changes (e.g. changes that add or modify synthetic minor emission limits). Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

The following is a summary of changes that have been made throughout the permit:

Multiple Conditions - Typographical Errors, Language Clarification
Throughout the permit, typographical and grammatical errors have been corrected. Additionally, changes to language for clarification or to align with the current preferred permit language conventions have been made.

Changes Specific to Section A of the Permit

(a) A.2 - Source Definition has been added to the permit to describe that Plants 1 and 2 are considered as one (1) source. Subsequent A conditions have been renumbered.

(b) Some Plant 1 emission unit and insignificant activity descriptions have been revised for clarity.

(c) The new emission units and insignificant activities as part of this revision have been incorporated into A.3 and A.4 of the permit.

Section A of the permit has been revised as follows:

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

This source consists of the following plants:

(a) Plant 1 is located at 1110 East Lincolnway Avenue, LaPorte, IN 46350.
(b) Plant 2 is located adjacent to Plant 1.

These plants are located on adjacent properties, have the same SIC code of 3369 and are under common control, therefore they will be considered one (1) source, as defined by 326 IAC 2-7-1(22).

A.**3**~~2~~ Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

Plant 1:

(a) One (1) Wax Pattern Assembly Operation, **identified as P1-WPA,** constructed before 2000, consisting of hand application and dip coating of multiple VOC and HAP containing solvents to wax patterns, **with emissions** uncontrolled, and exhausting ~~to the~~ indoors.

(b) One (1) Ceramic Mold Operation, with a nominal capacity of 0.66 tons of metal and ceramic molds per hour, consisting of the following:

(1) One (1) ~~mono~~shell latex surface coating booth, identified as **P1-SLC**~~Monoshell~~, constructed in 2001, with a nominal capacity of 15 wax forms per hour, equipped with dry filters to control particulate, exhausting to stack MS1**.**~~;~~

(2) One (1) dip manufacturing operation, **identified as P1-DMO,** permitted in 2002, with a nominal capacity of 30 bags of Silica flour per hour (0.75 tons **of flour** per hour) **and 0.66 tons of molds per hour**, with particulate controlled by a FARR GS10 dust collector rated at 7,000 cfm, installed in 2014, and exhausting internally to stack DMBH-1~~;~~**.**

(3) Twenty-two (22) sanding towers, **identified as P1-ST,** constructed in 1991 and 2013, with a combined nominal capacity of 0.66 tons per hour of sand, with particulate controlled by a ~~baghouse~~ **dust collector** with High Efficiency Particulate Air (HEPA) filters, identified as DUST-COLL-MONO-FARR, and exhausting back into the ~~Monos~~**S**hell Department~~;~~**.**

(4) One (1) aluminum oxide barrel sander, **identified as P1-AOBS,** constructed in 2004, with a nominal capacity of 0.6 tons per year of aluminum oxide, with particulate emissions exhausting back into the ~~Monos~~**S**hell Department**.**~~; and~~

(5) One (1) dewax furnace, identified as **P1-DBO-Big Bertha**~~DEWAX-BIG-BERTHA~~, constructed in 1991, with a nominal capacity of 0.32 tons per hour of cores, and a nominal rated heat **input** capacity of ~~5.75~~**4.2** MMBtu/hr **(four (4) burners at 0.55 MMBtu/hr each)**, equipped with one (1) natural gas-fired afterburner, identified as **P1-DBOAB-Big Bertha Afterburner**~~DEWAX-BIG-BERTHA AFTERBURNER~~, with a nominal rated heat **input** capacity of 1.**55**~~2~~ MMBtu/hr **(one (1) burner rated at 1.0 MMBtu/hr and one (1) burner rated at 0.55 MMBtu/hr)** as a control, exhausting to stack DW1A.

(c) Metal Melting and Auxiliary Operations, with a source wide nominal combined capacity of 0.**59**~~6~~ tons per hour of metal, consisting of:

(1) **Six (6) Electric Induction Ovens, with a total maximum capacity of 0.59 tons per hour, including:**

(A) One (1) Electric Induction Oven, identified as P1-EIO10, constructed in 1988, uncontrolled, and exhausting indoors.

(B) One (1) Electric Induction Oven, identified as P1-EIO8, constructed in 1989, uncontrolled, and exhausting indoors.

(C) One (1) Electric Induction Oven, identified as P1-EIO5, constructed in 1990, uncontrolled, and exhausting indoors.

(D) Three (3) Electric Induction Ovens, identified as P1-EIO2, P1-EIO6, and P1-EIO9, constructed before 2000, uncontrolled, and exhausting indoors.

~~One (1) Electric Induction Oven, identified as VACUUM-CAST-02, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(2) One (1) Electric Induction Oven, identified as ROLLOVER-CAST-05, constructed in 1990, uncontrolled, and exhausting to the indoors.~~

~~(3) One (1) Electric Induction Oven, identified as VACUUM-CAST-06, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(4) One (1) Electric Induction Oven, identified as VACUUM-CAST-08, constructed in 1989, uncontrolled, and exhausting to the indoors.~~

~~(5) One (1) Electric Induction Oven, identified as VACUUM-CAST-09, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(6) One (1) Electric Induction Oven, identified as VACUUM-CAST-10, constructed in 1988, uncontrolled, and exhausting to the indoors.~~

Under 40 CFR 63, Subpart ZZZZZZ, the six (6) electric induction ovens are considered affected sources.

(~~7~~**2**) One (1) mold hot topping process, **identified as P1-HT,** constructed before 2000, with a **source-wide (Plant 1 and Plant 2) maximum** ~~nominal~~ ferrux usage rate of ~~2~~**4**50,000 pounds per year, uncontrolled, and exhausting ~~to the~~ indoors.

(3) One (1) Mold Wrap Operation, identified as P1-MW, approved in 2014 for construction, with a maximum ceramic fiber usage of 500,000 pounds per year, with emissions uncontrolled, and exhausting indoors.

(4) One (1) Spray Application Insulation Booth, identified as P1-SAB, approved in 2014 for construction, with a maximum throughput of 4,000 pounds per year of liquid binder, exhausting through a 16,000 acfm spray booth filter.

(d) Pneumatic Shell Removal, identified as **P1-KO-01**~~KNOCKOUT-01~~ and **P1-KO-02**~~KNOCKOUT-02~~, constructed in 1988, with a nominal capacity of 0.59 tons per hour each of casting shells, with particulate controlled by a common dust collector, identified as KNOCKOUT DUST COLLECTOR, and exhausting to stack KOBH-1.

(e) Acid etching process, **identified as P1-AEP,** constructed before 2000, equipped with a scrubber and demister for particulate control of HCl, exhausting to stack Scrubber 02.

(f) Post-Cast Operations, **identified as P1-PCO,** constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by a ~~baghouse~~**dust collector**, identified as Post-Cast, constructed in 2005, exhausting to stack ZK4, and consisting of the following:

(1) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders; and

(2) Enclosed aluminum oxide blasting cabinets.

(g) Finishing Operations, **identified as P1-FO,** constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by one (1) ~~baghouse~~**dust collector**, identified as Carter Day, which was constructed before 2000, and exhausting to stacks ZK1 and ZK2 and one (1) ~~baghouse~~**dust collector**, identified as West Metals, which was constructed in 2008, and exhausting to stack ZK5. The finishing operations consist of the following:

(1) Enclosed aluminum oxide blasting cabinets**.**~~;~~

(2) Enclosed aluminum oxide blasting booths utilizing hand held blasting pens**.**~~;~~

(3) Hand held grinding performed in booths**.**~~; and~~

(4) * * *

(h) One (1) Fluorescent Penetrant Inspection Operation, identified as P1-FPI, with a maximum capacity of 2,000 gallons per year of Zyglo Penetrant Emulsifier, with emissions uncontrolled.

(~~h~~**i**) One (1) natural gas-fired boiler, identified as **P1-**Superior Boiler #3, constructed in 1957, with a nominal rated heat input of 13.4 MMBtu/hr, exhausting to stack B2.

Plant 2:

(j) One (1) Wax Pattern Assembly Operation, identified as P2-WPA, approved in 2014 for construction, consisting of hand application and dip coating of multiple VOC and HAP containing solvents to wax patterns, with emissions uncontrolled, and exhausting indoors.

(k) One (1) Ceramic Mold Operation, consisting of the following:

(1) One (1) Dip Slurry Preparation Process, identified as P2-DSP, approved in 2014 for construction, with a maximum capacity of 1.13 tons per hour of ceramic flour and 0.99 tons of molds per hour, with particulate emissions controlled by the Dip Dust Collector (DC-101), and exhausting to Stack S-101.

(2) One (1) Sticky Latex Coating Booth, identified as P2-SLC, approved in 2014 for construction, with particulate emissions controlled by Spray Latex Filter Collector (DC-111), and exhausting to Stack S-111.

(3) One (1) Shell Formation Process, identified as P2-SFP, approved in 2014 for construction, with a maximum capacity of 0.99 ton per hour, consisting of:

(A) One (1) High Volume Sanding Operation, with twelve (12) high volume stucco towers and two (2) barrel sanders, with particulate emissions controlled by Monoshell Dust Collector (DC-103), and exhausting to Stack S-103.

(B) One (1) Low Volume Sanding Operation, with ten (10) low volume stucco towers and one (1) barrel sander, with particulate emissions controlled by Monoshell Dust Collector (DC-102), and exhausting to Stack S-102.

(4) One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

(l) Metal Melting and Auxiliary Operations, consisting of:

(1) Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

(2) One (1) Hot Top Operation, identified as P2-HT, approved in 2014 for construction, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, and exhausting to Stacks S-119 and S-120.

(3) One (1) Mold Wrap Operation, identified as P2-MW, approved in 2014 for construction, with a maximum ceramic fiber usage of 750,000 pounds per year, with emissions controlled by DC-112, and exhausting to Stack S-126.

(4) One (1) Spray Application Insulation Booth, identified as P2-SAB, approved in 2014 for construction, with a maximum throughput of 6,000 pounds per year of liquid binder, exhausting through a 16,000 acfm spray booth filter (DC-104).

(m) One (1) Pneumatic Shell Removal (Knockout) Operation, identified as P2-KO, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Knockout Dust Collector (DC-105), and exhausting to Stack S-105.

(n) Manual Machining & Grinding, identified as P2-MMG, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Manual Machining & Grinding Dust Collector (DC-100), and exhausting to Stack S-100.

(o) One (1) Finishing Department with grinding, blasting, and welding operations, identified as P2-FD, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by three (3) Finishing Dust Collectors (DC-106, DC-107, and DC-108), and exhausting to Stacks S-106, S-107, and S-108, respectively.

(p) One (1) Fluorescent Penetrant Inspection Operation, identified as P2-FPI, with a maximum capacity of 3,000 gallons per year of Zyglo Penetrant Emulsifier, with emissions uncontrolled.

(q) Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

A.~~3~~**4** Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

Plant 1:

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour:

(1) One (1) natural gas-fired hot water heater, constructed in 1989, with a nominal rated heat input of 0.65 MMBtu/hr, exhausting to stack HW01. This is a trivial emission unit~~;~~**.**

(2) One (1) natural gas-fired boiler, identified as **P1-**BOILER-EAST, constructed in

1991, with nominal rated heat input of 4.2 MMBtu/hr, exhausting to stacks B3.

(3) One (1) natural gas-fired boiler, identified as **P1-**BOILER-HUMIDITY, constructed in 1991, with nominal rated heat input of 2.3 MMBtu/hr, exhausting to stacks B1.

(4) One (1) natural gas-fired boiler, identified as **P1-**BOILER-DEGREASE, constructed in 1994, with nominal rated heat input of 1.4 MMBtu/hr, exhausting to stacks O4H.

(5) * * *

(6) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**PREHEAT-02, constructed in 1987, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 2P.

(7) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**JR PREHEAT-02, constructed in 1994, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 2P1.

(8) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**PREHEAT-08, constructed in 1988, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 4P.

(9) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**PREHEAT-05, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 5P.

(10) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**PREHEAT-06, constructed in 1990, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 6P.

(11) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**JR PREHEAT-06, constructed in 1991, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 6P1.

(12) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**PREHEAT-09, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 9P.

(13) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**PREHEAT-10, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 10P.

(14) One (1) Natural Gas-Fired Shell Preheater Oven, identified as **P1-**JR PREHEAT-10, constructed in 1988, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 10P1.

(b) Two (2) standby diesel generators, identified as **P1-**GEN-AUXPWR-01 & **P1-**GEN-AUXPWR-02, with nominal capacities of 315 hp and 375 hp, respectively. Each generator was manufactured before April 1, 2006 and constructed before June 12, 2006.

Under ~~These units are considered affected sources under~~ 40 CFR Part 63, Subpart ZZZZ**, P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02 are considered existing affected sources**.

(c) Three (3) potassium hydroxide storage tanks, constructed in 2007, identified as **P1-**Electric Low Temp 01, **P1-**Electric Low Temp 02 and **P1-**Electric Low Temp 03, equipped

with a wet scrubber to control particulate in an air stream with a volumetric flow rate of 2,800 acfm and an inlet grain loading of 0.01 gr/acf of particulate, exhausting to stacks T1 and T2, respectively.

(d) Grinding and ~~machining~~ **finishing** operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators, **with a maximum capacity of 3.0 tons of steel per hour,** including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.

(e) * * *
(f) * * *
(g) Nine (9) tungsten inert gas (TIG) welding stations, constructed before 2000, with a combined nominal capacity of 0.075 pounds of electrode and wire per hour, equipped with dust collectors, and exhausting ~~to the~~ indoors.
(h) * * *

(i) Paved roads.

<u>Plant 2:</u>

(j) Seven (7) Natural Gas-Fired Shell Preheat Ovens, identified as P2-PHO1 - P2-PHO7, approved in 2014 for construction, each with a maximum heat input capacity of 8.5 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-112 through S-118, respectively.

(k) Two (2) Natural Gas-Fired Post-Casting Ovens, identified as P2-PCO1 and P2-PCO2, approved in 2014 for construction, each with a maximum heat input capacity of 4.0 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-119 and S-120, respectively.

(l) Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

(m) One (1) KOH Salt Bath Operation, identified as P2-KOH, approved in 2014 for construction, with particulate emissions controlled by KOH Salt Bath Scrubber (DC-109), and exhausting to Stack S-109.

(n) One (1) Autoclave Operation, identified as P2-AC, approved in 2014 for construction, with particulate emissions controlled by Autoclave Scrubber (DC-110), and exhausting to Stack S-110.

(o) One (1) Water Blasting Operation (shell removal), identified as P2-IWBO, approved in 2014 for construction.

(p) One (1) noncontact Cooling Tower, identified as P2-CT, approved in 2014 for construction, with a maximum capacity of 15,600 gallons per minute.

(q) Grinding and finishing operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators, including the following:

deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.

(r) Paved roads.

(s) The following processes with no emissions:

(1) One (1) Hot Isostatic Pressing (HIP) Process.

(2) One (1) Solution Heat Treating Process, using electric induction heat treat ovens.

(3) One (1) CNC machining Process, using water soluble cutting oils.

(4) One (1) Heat Treating Process, using electric induction heat treat furnaces.

(5) One (1) Final Inspection Process, using X-Ray photography.

A.**54** FESOP Applicability [326 IAC 2-8-2]

* * *

Changes Specific to Sections B and C of the Permit

(a) *Section B - Emergency Provisions*
The phone and fax numbers for the Northwest Regional Office have been updated.

(b) *Section B - Permit Renewal*
On November 3, 2011, the Indiana Air Pollution Control Board issued a revision to 326 IAC 2. The revision resulted in a change to the rule citation of "trivial activity" definition.

(c) *Section C - Stack Height*
The last sentence was removed from Section C - Stack Height. The statement is accurate; however, IDEM, OAQ does not typically include this statement as part of the standard condition.

(d) *Section C - Compliance Monitoring*
The condition has been revised to clarify the compliance monitoring requirements for new verses existing units.

The permit has been revised as follows:

SECTION B GENERAL CONDITIONS

* * *

B.12 Emergency Provisions [326 IAC 2-8-12]

(a) * * *
(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or 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) * * *
(2) * * *

(3) * * *

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ ~~,~~ or Northwest Regional Office 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
Northwest Regional Office phone: (219) ~~757-0265~~**464-0233**; fax: (219) ~~757-0267~~**464-0553.**

* * *

* * *

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(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 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(~~40~~**42**). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

* * *

(b) * * *

(c) * * *

* * *

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

* * *

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. ~~Pursuant to 326 IAC 1-7-5(a), all source having less than twenty-five (25) tons per year of actual emissions (after controls) shall be exempt from the requirements specified in 326 IAC 1-7-3(a).~~

C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

(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 ~~or of initial start-up, whichever is later,~~ to begin such monitoring. If**,** due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance ~~or the date of initial startup, whichever is later~~, the Permittee may extend the

compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

* * *

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

* * *

Changes to the Section D.1 of the Permit

(a) Emission unit descriptions for the wax pattern assembly operation, the monoshell latex surface coating booth, and the aluminum oxide barrel sander were removed from D.1 of the permit because these units do not have applicable requirements. The emission unit description for the hot topping process was moved to a new D.7 section with the Plant 2 hot topping process. Some of the other emission unit descriptions have been revised for clarity.

(b) Conditions D.1.1 - Particulate Matter (PM) PSD Minor Limits and D.1.2 - FESOP Limits and PSD Minor Limits were revised to update the FESOP limits and PSD minor limits for the sanding towers and to add limits for the dip manufacturing operation as requested by the Permittee.

(c) Condition D.1.8 - Testing Requirements was revised to remove the language that testing shall occur 180 days after issuance of 091-31556-00047 since the initial testing was conducted. The Permittee must test at least once every five (5) years from the date of the most recent valid compliance demonstration.

(d) Condition D.1.9 - Parametric Monitoring was revised to add a monitoring requirement for the Dip Manufacturing Operation since a FESOP limit and PSD minor limits are now included in the permit for this unit and the unit requires the dust collector to be working properly in order to ensure compliance with the limits.

The permit has been revised as follows:

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

~~(a) One (1) Wax Pattern Assembly Operation, constructed before 2000, consisting of hand application and dip coating of multiple VOC and HAP containing solvents to wax patterns, uncontrolled, and exhausting to the indoors.~~

(b) One (1) Ceramic Mold Operation, with a nominal capacity of 0.66 tons of metal and ceramic molds per hour, consisting of the following:

~~(1) One (1) monoshell latex surface coating booth, identified as Monoshell, constructed in 2001, with a nominal capacity of 15 wax forms per hour, equipped with dry filters to control particulate, exhausting to stack MS1;~~

(2) One (1) dip manufacturing operation, **identified as P1-DMO,** permitted in 2002, with a nominal capacity of 30 bags of Silica flour per hour (0.75 tons **of flour** per hour) **and 0.66 tons of molds per hour**, with particulate controlled by a FARR GS10 dust collector rated at 7,000 cfm, installed in 2014, and exhausting internally to stack DMBH-1.~~;~~

(3) Twenty-two (22) sanding towers, **identified as P1-ST,** constructed in 1991 and 2013, with a combined nominal capacity of 0.66 tons per hour of sand, with particulate controlled by a ~~baghouse~~ **dust collector** with High Efficiency Particulate Air (HEPA) filters, identified as DUST-COLL-MONO-FARR, and exhausting back into the ~~Monos~~**S**hell Department.~~;~~

~~(4) One (1) aluminum oxide barrel sander, constructed in 2004, with a nominal capacity of 0.6 tons per year of aluminum oxide, with particulate emissions exhausting back into the Monoshell Department; and~~

(5) * * *

(c) Metal Melting and Auxiliary Operations, with a source wide nominal combined capacity of 0.**59**~~6~~ tons per hour of metal, consisting of:

(1) **Six (6) Electric Induction Ovens, with a total maximum capacity of 0.59 tons per hour, including:**

(A) One (1) Electric Induction Oven, identified as P1-EIO10, constructed in 1988, uncontrolled, and exhausting indoors.

(B) One (1) Electric Induction Oven, identified as P1-EIO8, constructed in 1989, uncontrolled, and exhausting indoors.

(C) One (1) Electric Induction Oven, identified as P1-EIO5, constructed in 1990, uncontrolled, and exhausting indoors.

(D) Three (3) Electric Induction Ovens, identified as P1-EIO2, P1-EIO6, and P1-EIO9, constructed before 2000, uncontrolled, and exhausting indoors.

~~One (1) Electric Induction Oven, identified as VACUUM-CAST-02, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(2) One (1) Electric Induction Oven, identified as ROLLOVER-CAST-05, constructed in 1990, uncontrolled, and exhausting to the indoors.~~

~~(3) One (1) Electric Induction Oven, identified as VACUUM-CAST-06, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(4) One (1) Electric Induction Oven, identified as VACUUM-CAST-08, constructed in 1989, uncontrolled, and exhausting to the indoors.~~

~~(5) One (1) Electric Induction Oven, identified as VACUUM-CAST-09, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(6) One (1) Electric Induction Oven, identified as VACUUM-CAST-10, constructed in 1988, uncontrolled, and exhausting to the indoors.~~

Under 40 CFR 63, Subpart ZZZZZZ, the six (6) electric induction ovens are considered

affected sources.

~~(7) One (1) mold hot topping process, constructed before 2000, with a nominal ferrux usage rate of 250,000 pounds per year, uncontrolled, and exhausting to the indoors.~~

(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 2-8-4(1)]

D.1.1 Particulate Matter (PM) **PSD Minor Limits** [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

(a) The combined PM emissions from the sanding towers **(P1-ST)** through the ~~baghouse~~ **dust collector** identified as DUST-COLL-MONO-FARR shall not exceed ~~3.10~~**0.93** pound~~s~~ per hour.

(b) The PM emissions from the Dip Manufacturing Operation (P1-DMO) shall not exceed 0.45 pound per hour.

Compliance with th~~i~~**e**se limit**s**, combined with the **limits in Conditions D.2.1, D.4.1, and D.5.1 and the** potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per **twelve (**12**)** consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.2 FESOP Limits **and PSD Minor Limits** [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 **and in order to render 326 IAC 2-2 not applicable**, the Permittee shall comply with the following:

The PM10 and PM2.5 emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control	PM10 Limit (lb/hr)	PM2.5 Limit (lb/hr)
Sanding Towers (P1-ST)	**Dust Collector (DUST-COLL-MONO-FARR)**	**0.93**	**0.93**
Dip Manufacturing Operation (P1-DMO)	**Dust Collector (FARR GS10)**	**0.45**	**0.45**

~~(a) The combined PM10 emissions from the sanding towers through the baghouse identified as DUST-COLL-MONO-FARR shall not exceed 2.57 pounds per hour.~~

~~(b) The combined PM2.5 emissions from the sanding towers through the baghouse identified as DUST-COLL-MONO-FARR shall not exceed 2.57 pounds per hour.~~

Compliance with these limits, combined with the **limits in Conditions D.2.2, D.4.2, and D.5.2 and the** potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per **twelve (**12**)** consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (ton~~s~~/hr)	Particulate Emission Limit (lb~~s~~/hr)
Dip Manufacturing Operation **(P1-DMO)**	**1.41**~~0.75~~	**5.16**~~3.38~~
Sanding Towers **(P1-ST)**	0.66 (total)	3.10 (total)
Electric Induction Ovens **(P1-EIO2, 5, 6, 8, 9, 10)**	0.59 (total)	2.88 (total)

* * *

D.1.4 Incinerators [326 IAC 4-2-2]

Pursuant to 326 IAC 4-2 (Incinerators), the dewax furnace, identified as **P1-DBO-Big Bertha**~~DEWAX-BIG-BERTHA~~ shall:

(a) Consist of primary and secondary chambers or the equivalent**.**~~;~~

(b) Be equipped with a primary burner unless burning **only** wood products**.**~~;~~

(c) Comply with 326 IAC 5-1 and 326 IAC 2**.**~~;~~

(d) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in 326 IAC 4-2-2(c)**.**~~; and~~

(e) * * *

(f) If any of the requirements of (a)~~)~~ through (e) above are not met, the Permittee shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

The Permittee operating the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

D.1.5 Carbon Monoxide Emission Limits [326 IAC 9-1-2]

Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the Permittee shall not operate the dewax furnace, identified as **P1-DBO-Big Bertha**~~DEWAX-BIG-BERTHA~~, unless the waste gas stream is burned in one of the following:

(a) Direct-flame afterburner**.**~~; or~~

(b) Secondary chamber.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.1.7 ~~Particulate~~ Control **Devices**

(a) In order to **ensure** compl~~y~~**iance** with Conditions D.1.1, D.1.2, and D.1.3 the ~~baghouses~~ **dust collectors (FARR GS10, DUST-COLL-MONO-FARR)** for particulate control shall be in operation and control emissions from the dip manufacturing operation **(P1-DMO)** and sanding towers **(P1-ST)** at all times when these processes are in operation.

(b) In order to ensure compliance with Conditions D.1.4 and D.1.5, the afterburner (P1-DBOAB-Big Bertha Afterburner) shall be in operation and control emissions from the dewax furnace (P1-DBO-Big Bertha) at all times the dewax furnace is in operation.

(~~b~~**c**) In the event that bag failure is observed in a multi-compartment ~~baghouse~~**dust collector**, 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.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1, D.1.2, and D.1.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the sanding towers **(P1-ST)** ~~baghouse~~ **dust collector (DUST-COLL-MONO-FARR)** ~~not later than one hundred and eighty (180) days after the issuance of this permit (091-31556-00047). This testing shall be conducted~~ utilizing methods approved by the Commissioner ~~and shall be repeated~~ at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.1.9 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the **FARR GS10 and DUST-COLL-MONO-FARR dust collectors**~~sanding tower baghouse~~ **,** used in conjunction with the **dip manufacturing operation (P1-DMO) and** sanding tower operation **(P1-ST)**~~s~~, at least once per day when the **respective** process**es** ~~is~~**are** in operation. When for any one reading, the pressure drop across ~~the baghouse~~ **a dust collector** is outside ~~the~~**its** normal range, the Permittee shall take **a** reasonable response. The normal range**s are indicated in the table below,** ~~is a pressure drop between 0.2 and 8.0 inches of water~~ unless a different upper-bound or lower-bound value for ~~this~~ **a** range is determined during the latest stack test.

Unit Description	**Control**	**Normal Pressure Drop Range (in water)**
Dip Manufacturing Operation (P1-DMO)	**Dust Collector (FARR GS10)**	**0.2 - 8.0**
Sanding Towers (P1-ST)	**Dust Collector (DUST-COLL-MONO-FARR)**	**0.2 - 8.0**

(b) 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 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.

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 every six (6) months.

D.1.10 Broken or Failed Bag Detection

(a) For a single compartment ~~baghouse~~ **dust collector** 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~~ **dust collector** 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~~ **dust collector's** pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] ~~[326 IAC 2-8-16]~~

D.1.11 Record Keeping Requirements

(a) To document **the** compliance **status** with Condition D.1.9, the Permittee shall maintain once per day records of the pressure drop **across the FARR GS10 and DUST-COLL-MONO-FARR dust collectors, used in conjunction with the Dip Manufacturing Operation (P1-DMO) and Sanding Towers (P1-ST)**. 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).

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

<u>Changes to the Section D.2 of the Permit</u>

(a) The emission unit description for the acid etching process was removed from D.2 of the permit because this unit does not have applicable requirements. Some of the other emission unit descriptions have been revised for clarity.

(b) Conditions D.2.1 - Particulate Matter (PM) PSD Minor Limits and D.2.2 - FESOP Limits and PSD Minor Limits were revised to update the FESOP limits as requested by the Permittee.

(c) Condition D.2.3 - Particulate was revised to combine the Pneumatic Shell Removal processes into one limit and the Finishing Operations into one limit for purposes of 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes). Limits for 326 IAC 6-3-2 are established for manufacturing processes, which might comprise several units.

(d) Condition D.2.6 - Testing Requirements was revised to remove the language that testing shall occur 180 days after issuance of 091-31556-00047 since the initial testing was conducted. The Permittee must test at least once every five (5) years from the date of the most recent valid compliance demonstration. Additionally, D.2.6(b) and (c) were combined into one testing requirement under D.2.6(b).

The permit has been revised as follows:

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(d) Pneumatic Shell Removal, identified as **P1-KO-01**~~KNOCKOUT-01~~ and **P1-KO-02**~~KNOCKOUT-02~~, constructed in 1988, with a nominal capacity of 0.59 tons per hour each of casting shells, with particulate controlled by a common dust collector, identified as KNOCKOUT DUST COLLECTOR, and exhausting to stack KOBH-1.

~~(e) Acid etching process, constructed before 2000, equipped with a scrubber and demister for particulate control of HCl, exhausting to stack Scrubber 02.~~

(f) Post-Cast Operations, **identified as P1-PCO,** constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by a ~~baghouse~~**dust collector**, identified as Post-Cast, constructed in 2005, exhausting to stack ZK4, and consisting of the following:

(1) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders; and

(2) Enclosed aluminum oxide blasting cabinets.

(g) Finishing Operations, **identified as P1-FO,** constructed before 2000 and approved for modification in 2012, with a nominal capacity of 0.59 tons per hour of unfinished castings and ceramic shells, with particulate controlled by one (1) ~~baghouse~~**dust collector**, identified as Carter Day, which was constructed before 2000, and exhausting to stacks ZK1 and ZK2 and one (1) ~~baghouse~~**dust collector**, identified as West Metals, which was constructed in 2008, and exhausting to stack ZK5. The finishing operations consists of the following:

(1) Enclosed aluminum oxide blasting cabinets.~~;~~

(2) Enclosed aluminum oxide blasting booths utilizing hand held blasting pens.~~;~~

(3) Hand held grinding performed in booths.~~; and~~

(4) Casting cutting performed in booths using several cutoff wheels, machining drill bits, and belt grinders.

(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 2-8-4(1)]

D.2.1 Particulate Matter (PM) **PSD Minor Limits** [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

~~(a)~~ The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	~~Baghouse~~**Dust collector** ID	PM Emission Limit (lb~~s~~/hr)
Pneumatic Shell Removal (**P1-KO-01**~~KNOCKOUT-01~~ and **P1-KO-02**~~KNOCKOUT-02~~)	KNOCKOUT DUST COLLECTOR	~~5.76~~**1.30**
Post-Cast Operations **(P1-PCO)**	Post-Cast	~~2.88~~**0.50**
Finishing Operations **(P1-FO)**	Carter Day	~~2.88~~**2.02**
Finishing Operations **(P1-FO)**	West Metals	~~2.88~~**0.44**

Compliance with these limits, combined with the **limits in Conditions D.1.1, D.4.1, and D.5.1 and the** potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per **twelve (**12**)** consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.2.2 FESOP Limits **and PSD Minor Limits** [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 **and in order to render 326 IAC 2-2 and 326 IAC 2-4.1 not applicable**, the Permittee shall comply with the following:

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

Unit Description	~~Baghouse~~**Dust collector** ID	PM10 Emission Limit (lb~~s~~/hr)	PM2.5 Emission Limit (lb~~s~~/hr)
Pneumatic Shell Removal (**P1-KO-01 and P1-KO-02**~~KNOCKOUT-01 and KNOCKOUT-02~~)	KNOCKOUT DUST COLLECTOR	~~2.44~~**1.30**	~~2.44~~**1.30**
Post-Cast Operations **(P1-PCO)**	Post-Cast	~~2.88~~**0.50**	~~2.88~~**0.50**
Finishing Operations **(P1-FO)**	Carter Day	~~2.88~~**2.02**	~~2.88~~**2.02**
Finishing Operations **(P1-FO)**	West Metals	~~2.88~~**0.44**	~~2.88~~**0.44**

(b) The Nickel, Chromium, **and** Cobalt~~, and Total~~ HAP~~s~~ emissions from the following units shall be limited to less than the emission limits listed in the table below:

~~Unit Description~~	~~Baghouse ID~~	~~Nickel Emission Limit (lbs/hr)~~	~~Chromium Emission Limit (lbs/hr)~~	~~Cobalt Emission Limit (lbs/hr)~~	~~Total HAPs Emission Limit (lbs/hr)~~
~~Post-Cast Operations~~	~~Post-Cast~~	~~1.74~~	~~0.42~~	~~0.17~~	~~2.32~~
~~Finishing Operations~~	~~Carter Day~~				
~~Finishing Operations~~	~~West Metals~~				

Unit Description	**Dust collector ID**	**Nickel Emission Limit (lb/hr)**	**Chromium Emission Limit (lb/hr)**	**Cobalt Emission Limit (lb/hr)**
Post-Cast Operations (P1-PCO)	**Post-Cast**	**0.082**	**0.321**	**0.027**
Finishing Operations (P1-FO)	**Carter Day**	**0.042**	**0.146**	**0.021**
Finishing Operations (P1-FO)	**West Metals**	**0.021**	**0.065**	**0.005**

Compliance with these limits, combined with the **limits in Conditions D.1.2, D.4.2, D.5.2, and D.7.1 and the** potential to emit PM10, PM2.5, **nickel, chromium, and cobalt**~~total HAPs, and any single HAP~~ from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per **twelve (**12**)** consecutive month period, each, **of** any single HAP to less than ten (10) tons per **twelve (**12**)** consecutive month period, **and of** total HAPs to less than twenty-five (25) tons per **twelve (**12**)** consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

D.2.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (ton~~s~~/hr)	Particulate Emission Limit (lb~~s~~/hr)
Pneumatic Shell Removal (**P1-KO-02 and P1-KO-02**~~KNOCKOUT-01~~)	~~0.59~~**1.18**	~~2.88~~**4.58**
~~Pneumatic Shell Removal (KNOCKOUT-02)~~	~~0.59~~	~~2.88~~
Post-Cast Operations/ Post-Cast **(P1-PCO)**	0.59	2.88
Finishing Operations **(P1-FO)**~~/Carter Day~~	0.59	2.88
~~Finishing Operations/West Metals~~	~~0.59~~	~~2.88~~

The above pounds per hour limitations were 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

D.2.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.2.5 Particulate Control

(a) In order to **ensure** compl~~y~~**iance** with Conditions D.2.1, D.2.2, and D.2.3, the ~~baghouse~~**dust collector**s **(KNOCKOUT, Post-Cast, Carter Day, and West Metals)** for particulate control shall be in operation and control emissions from the pneumatic shell removal **(P1-KO-01 and P1-KO-02)**, post-cast **(P1-PCO)**, and finishing operations **(P1-FO)** at all times that the pneumatic shell removal, post-cast, and finishing processes are in operation.

(b) In the event that bag failure is observed in a multi-compartment ~~baghouse~~**dust collector**, 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.2.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Conditions D.2.1, D.2.2, and D.2.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the pneumatic shell removal dust collector **(KNOCKOUT)** ~~not later than one hundred and eighty (180) days after the issuance of this permit (091-31556-00047). This testing shall be conducted~~ utilizing methods approved by the Commissioner ~~and shall be repeated~~ at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(b) In order to demonstrate compliance with Conditions D.2.1, D.2.2, and D.2.3, the Permittee shall perform PM, PM10, ~~and~~ PM2.5**, nickel, chromium, and cobalt** testing of the **Post-Cast and Finishing Operations** ~~post-cast, carter day, and west metals~~ ~~baghouse~~**dust collector**s **(Post-Cast, Carter Day, and West Metals)** ~~not later than one hundred and eighty (180) days after the issuance of this permit (091-31556-00047). This testing shall be conducted~~ utilizing methods approved by the Commissioner ~~and shall be repeated~~ at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

~~(c) In order to demonstrate compliance with Condition D.2.2, the Permittee shall perform nickel, chromium, and cobalt testing of the post-cast, carter day, and west metals baghouses not later than one hundred and eighty (180) days after the issuance of this permit (091-31556-00047). This testing shall be conducted utilizing methods approved by the Commissioner and shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.~~

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.2.7 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the ~~pneumatic shell removal~~**KNOCKOUT**, ~~p~~**P**ost-~~c~~**C**ast, ~~c~~**C**arter ~~d~~**D**ay, and ~~w~~**W**est ~~m~~**M**etals ~~baghouse~~**dust collector**s**,** used in conjunction with the pneumatic shell removal **(P1-KO-01 and P1-KO-02)**, post-cast **(P1-PCO)**, and finishing operations **(P1-FO)**, at least once per day when any of the processes are in operation. When for any one reading, the pressure drop across **a** ~~each baghouse~~**dust collector** is outside ~~the~~ **its** normal range, the Permittee shall take **a** reasonable response. The normal range**s are indicated in the table below,** ~~for each unit is a pressure drop between 0.2 and 8.0 inches of water~~ unless a different upper-bound or lower-bound value for ~~this~~ **a** range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	**Dust Collector KNOCKOUT**	**0.2 - 8.0**
Post-Cast Operations (P1-PCO)	**Dust Collector Post-Cast**	**0.2 - 8.0**
Finishing Operations (P1-FO)	**Dust Collector Carter Day**	**0.2 - 8.0**
Finishing Operations (P1-FO)	**Dust Collector West Metals**	**0.2 - 8.0**

(b) 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 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.

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 every six (6) months.

D.2.8 Broken or Failed Bag Detection

(a) For a single compartment ~~baghouse~~**dust collector** 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~~**dust collector** 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~~**dust collector**'s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] ~~[326 IAC 2-8-16]~~

D.2.9 Record Keeping Requirements

(a) To document **the** compliance **status** with Condition D.2.7, the Permittee shall maintain once per day records of the pressure drop **across the KNOCKOUT, Post-Cast, Carter Day, and West Metals dust collectors, used in conjunction with the Pneumatic Shell Removal (P1-KO-01 and P1-KO-02), Post-Cast (P1-PCO), and Finishing operations (P1-FO)**. 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).

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

Changes to the Section D.3 of the Permit

(a) All Plant 1 natural gas-fired units were included in Section D.3.

(b) Condition D.3.1 - Particulate was revised to remove the equations. These are shown in the technical support document to FESOP No. F091-31556-00047, issued on October 23, 2012. The applicable limits remain in the permit.

(c) Condition D.3.2 - FESOP Limit was added to Section D.3 to limit the natural gas usage at Plant 1 along with the appropriate GHG limits in order to limit the GHGs from the source to less than 100,000 tons of CO2e per year. Conditions D.3.3 - Record Keeping Requirements and D.3.4 - Reporting Requirements were added to document the compliance status with Condition D.3.2.

The permit has been revised as follows:

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1 - Natural Gas Usage Only

(b)(5) One (1) dewax furnace, identified as P1-DBO-Big Bertha, constructed in 1991, with a nominal capacity of 0.32 tons per hour of cores, and a nominal rated heat input capacity of 4.2 MMBtu/hr (four (4) burners at 0.55 MMBtu/hr each), equipped with one (1) natural gas-fired afterburner, identified as P1-DBOAB-Big Bertha Afterburner, with a nominal rated heat input capacity of 1.55 MMBtu/hr (one (1) burner rated at 1.0 MMBtu/hr and one

(1) burner rated at 0.55 MMBtu/hr) as a control, exhausting to stack DW1A.

(~~h~~**i**) One (1) natural gas-fired boiler, identified as **P1-**Superior Boiler #3, constructed in 1957, with a nominal rated heat input of 13.4 MMBtu/hr, exhausting to stack B2.

Insignificant Activities consisting of:

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour:

(1) One (1) natural gas-fired hot water heater, constructed in 1989, with a nominal rated heat input of 0.65 MMBtu/hr, exhausting to stack HW01~~;~~**.** This is a trivial emission unit**.**~~;~~

(2) One (1) natural gas-fired boiler, identified as **P1-**BOILER-EAST, constructed in 1991, with nominal rated heat input of 4.2 MMBtu/hr, exhausting to stacks B3.

(3) One (1) natural gas-fired boiler, identified as **P1-**BOILER-HUMIDITY, constructed in 1991, with nominal rated heat input of 2.3 MMBtu/hr, exhausting to stacks B1.

(4) One (1) natural gas-fired boiler, identified as **P1-**BOILER-DEGREASE, constructed in 1994, with nominal rated heat input of 1.4 MMBtu/hr, exhausting to stacks O4H.

(5) Miscellaneous natural gas-fired space heaters totaling a nominal of 0.10 MMBtu/hr heat input. These are trivial emission units.

(6) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-02, constructed in 1987, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 2P.

(7) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-02, constructed in 1994, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 2P1.

(8) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-08, constructed in 1988, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 4P.

(9) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-05, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 5P.

(10) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-06, constructed in 1990, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 6P.

(11) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-06, constructed in 1991, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 6P1.

(12) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-09, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 9P.

(13) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-PREHEAT-10, constructed before 2000, with a nominal rated heat input of 6.8 MMBtu/hr, and exhausting to stack 10P.

(14) One (1) Natural Gas-Fired Shell Preheater Oven, identified as P1-JR PREHEAT-10, constructed in 1988, with a nominal rated heat input of 0.75 MMBtu/hr, and exhausting to stack 10P1.

(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 2-8-4(1)]

D.3.1 Particulate [326 IAC 6-2-3] [326 IAC 6-2-4]

(a) Pursuant to 326 IAC 6-2-3(d) (Particulate Limitations for Sources of Indirect Heating), particulate emissions from **P1-**Superior Boiler #3 shall in no case exceed 0.8 pounds per MMBtu heat input.

(b) Pursuant to 326 IAC 6-2-4 (Particulate Limitations for Sources of Indirect Heating) the particulate emissions from the hot water heater shall be limited to 0.497 pounds per MMBtu heat input.

~~This limitation is based on the following equation:~~

$$\cancel{Pt = \frac{1.09}{Q^{0.26}}}$$

~~Where:~~

~~P_t = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)~~
~~Q = total source operating capacity (20.55 MMBtu/hr)~~

(c) Pursuant to 326 IAC 6-2-4 (Particulate Limitations for Sources of Indirect Heating) the particulate emissions from **P1-**BOILER-HUMIDITY and **P1-**BOILER-EAST shall each be limited to 0.462 pounds per MMBtu heat input.

~~This limitation is based on the following equation:~~

$$\cancel{Pt = \frac{1.09}{Q^{0.26}}}$$

~~Where:~~

~~Pt = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)~~
~~Q = total source operating capacity (27.05 MMBtu/hr)~~

(d) Pursuant to 326 IAC 6-2-4 (Particulate Limitations for Sources of Indirect Heating) the particulate emissions from **P1-**BOILER-DEGREASE shall be limited to 0.456 pounds per MMBtu heat input.

~~This limitation is based on the following equation:~~

$$\cancel{Pt = \frac{1.09}{Q^{0.26}}}$$

~~Where:~~

~~Pt = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)~~
~~Q = total source operating capacity (28.45 MMBtu/hr)~~

D.3.2 FESOP Limit [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) The total natural gas fuel usage at Plant 1 shall be less than 584 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Carbon Dioxide (CO2) emissions from natural gas combustion shall not exceed 120,000 pounds per million cubic foot (lb/MMCF).

(c) Methane (CH4) emissions from natural gas combustion shall not exceed 2.3 pounds per million cubic foot (lb/MMCF).

(d) Nitrous oxide (N2O) emissions from natural gas combustion shall not exceed 2.2. pounds per million cubic foot (lb/MMCF).

(e) The Global Warming Potential (GWP) for carbon dioxide (CO2) shall not exceed 1.0.

(f) The Global Warming Potential (GWP) for methane (CH4) shall not exceed 25.

(g) The Global Warming Potential (GWP) for nitrous oxide (N2O) shall not exceed 298.

Compliance with the above limit, combined with the limit in Condition D.6.2 and the potential to emit greenhouse gases (GHGs) from all other emission units at this source, shall limit the source-wide total potential to emit of GHGs to less than 100,000 tons of CO2 equivalent (CO2e) emissions per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) not applicable.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.3.3 Record Keeping Requirements

(a) To document the compliance status of Condition D.3.2, the Permittee shall maintain records of the total amount of natural gas burned (in MMCF) in all natural gas-fired units at Plant 1 each month and each compliance period.

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

D.3.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.3.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Sections D.4 - D.7 of the Permit

Sections D.4, D.5, and D.6 have been added to the permit to incorporate the Plant 2 units and their applicable requirements as described in this Technical Support Document. Section D.7 has been added to the permit to include a limit and corresponding record keeping and reporting requirements for the Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT).

The permit has been revised as follows:

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

<u>Plant 2</u>

(k) One (1) Ceramic Mold Operation, consisting of the following:

(1) One (1) Dip Slurry Preparation Process, identified as P2-DSP, approved in 2014 for construction, with a maximum capacity of 1.13 tons per hour of ceramic flour and 0.99 tons of molds per hour, with particulate emissions controlled by the Dip Dust Collector (DC-101), and exhausting to Stack S-101.

(3) One (1) Shell Formation Process, identified as P2-SFP, approved in 2014 for construction, with a maximum capacity of 0.99 ton per hour, consisting of:

(A) One (1) High Volume Sanding Operation, with twelve (12) high volume stucco towers and two (2) barrel sanders, with particulate emissions controlled by Monoshell Dust Collector (DC-103), and exhausting to Stack S-103.

(B) One (1) Low Volume Sanding Operation, with ten (10) low volume stucco towers and one (1) barrel sander, with particulate emissions controlled by Monoshell Dust Collector (DC-102), and exhausting to Stack S-102.

(4) One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

(l) Metal Melting and Auxiliary Operations, consisting of:

(1) Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

(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 2-8-4(1)]

D.4.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control	PM Limit (lb/hr)
Dip Slurry Preparation Process (P2-DSP)	Dip Dust Collector (DC-101)	0.68
Shell Formation Process (P2-SFP) - High Volume Sanding	Monoshell Dust Collector (DC-103)	1.22
Shell Formation Process (P2-SFP) - Low Volume Sanding	Monoshell Dust Collector (DC-102)	1.22

Compliance with these limits, combined with the limits in Conditions D.1.1, D.2.1, and D.5.1 and the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.4.2 FESOP Limits and PSD Minor Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM10 and PM2.5 emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Control	PM10 Limit (lb/hr)	PM2.5 Limit (lb/hr)
Dip Slurry Preparation Process (P2-DSP)	Dip Dust Collector (DC-101)	0.68	0.68
Shell Formation Process (P2-SFP) - High Volume Sanding	Monoshell Dust Collector (DC-103)	1.22	1.22
Shell Formation Process (P2-SFP) - Low Volume Sanding	Monoshell Dust Collector (DC-102)	1.22	1.22

Compliance with these limits, combined with the limits in Conditions D.1.2, D.2.2, and D.5.2 and the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.4.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (ton/hr)	Particulate Emission Limit (lb/hr)
Dip Slurry Preparation Process (P2-DSP)	2.12	6.78
Shell Formation Process (P2-SFP)	0.99 (total)	4.07 (total)
Electric Induction Ovens (P2-EIO1 - P2-EIO4)	0.89 (total)	3.79 (total)

The above pounds per hour limitations were 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

D.4.4 Incinerators [326 IAC 4-2-2]

Pursuant to 326 IAC 4-2 (Incinerators), the Dewax Burnout Furnace (P2-DBF) shall:

(a) Consist of primary and secondary chambers or the equivalent.

(b) Be equipped with a primary burner unless burning only wood products.

(c) Comply with 326 IAC 5-1 and 326 IAC 2.

(d) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in 326 IAC 4-2-2(c).

(e) Not emit particulate matter in excess of one (1) of the following:

(1) Three-tenths (0.3) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions correct to fifty percent (50%) excess air for incinerators with solid waste capacity of greater than or equal to two hundred (200) pounds per hour.

(2) Five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity of less than two hundred (200) pounds per hour.

(f) If any of the requirements of (a) through (e) above are not met, the Permittee shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

The Permittee operating the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

D.4.5 Carbon Monoxide Emission Limits [326 IAC 9-1-2]

Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the Permittee shall not operate the Dewax Burnout Furnace (P2-DBF) unless the waste gas stream is burned in one of the following:

(a) Direct-flame afterburner.

(b) Secondary chamber.

D.4.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

D.4.7 Control Devices

(a) In order to ensure compliance with Conditions D.4.1, D.4.2, and D.4.3, the dust collectors for particulate control shall be in operation and control emissions from the Dip Slurry Preparation Process (P2-DSP) and Shell Formation Process (P2-SFP) at all times when these processes are in operation.

(b) In order to ensure compliance with Conditions D.4.4 and D.4.5, the afterburner (DAB) shall be in operation and control emissions from the Dewax Burnout Furnace (P2-DBF) at all times the Dewax Burnout Furnace is in operation.

(c) In the event that bag failure is observed in a multi-compartment dust collector, 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.4.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

Not later than 180 days after the startup of the Shell Formation Process (P2-SFP), in order to demonstrate compliance with Conditions D.4.1, D.4.2, and D.4.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the High Volume Sanding and Low Volume Sanding dust collectors (DC-102 and DC-103) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.4.9 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the dust collectors DC-101, DC-102, and DC-103, used in conjunction with the Dip Slurry Preparation Process (P2-DSP) and Shell Formation Process (P2-SFP), at least once per day when the respective processes are in operation. When for any one reading, the pressure drop across a dust collector is outside its normal range, the Permittee shall take a reasonable response. The normal ranges are indicated in the table below, unless a

different upper-bound or lower-bound value for a range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Dip Slurry Preparation Process (P2-DSP)	Dip Dust Collector (DC-101)	0.2 - 8.0
Shell Formation Process (P2-SFP) - High Volume Sanding	Monoshell Dust Collector (DC-103)	0.2 - 8.0
Shell Formation Process (P2-SFP) - Low Volume Sanding	Monoshell Dust Collector (DC-102)	0.2 - 8.0

(b) 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 reading that is outside the above-mentioned ranges is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.4.10 Broken or Failed Bag Detection

(a) For a single compartment dust collector 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 dust collector 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 dust collector's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.4.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.4.9, the Permittee shall maintain once per day records of the pressure drop across the DC-101, DC-102, and DC-103 dust collectors, used in conjunction with the Dip Slurry Preparation Process (P2-DSP), the Low Volume Sanding operation, and the High Volume Sanding operation. The Permittee shall include in its daily record when a pressure

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

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

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 2

(m) One (1) Pneumatic Shell Removal (Knockout) Operation, identified as P2-KO, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Knockout Dust Collector (DC-105), and exhausting to Stack S-105.

(n) Manual Machining & Grinding, identified as P2-MMG, approved in 2014 for construction, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by Manual Machining & Grinding Dust Collector (DC-100), and exhausting to Stack S-100.

(o) One (1) Finishing Department with grinding, blasting, and welding operations, identified as P2-FD, with a maximum capacity of 0.89 ton per hour, with particulate emissions controlled by three (3) Finishing Dust Collectors (DC-106, DC-107, and DC-108), and exhausting to Stacks S-106, S-107, and S-108, respectively.

(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 2-8-4(1)]

D.5.1 Particulate Matter (PM) [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

The PM emissions from the following units shall not exceed the emission limits listed in the table below:

Unit Description	Dust collector ID	PM Emission Limit (lb/hr)
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	0.64
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	1.71
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.57
	Finishing Dust Collector (DC-107)	0.57

Unit Description	Dust collector ID	PM Emission Limit (lb/hr)
	Finishing Dust Collector (DC-108)	0.57

Compliance with these limits, combined with the limits in Conditions D.1.1, D.2.1, and D.4.1 and the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.5.2 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following:

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

Unit Description	Dust collector ID	PM10 Emission Limit (lb/hr)	PM2.5 Emission Limit (lb/hr)
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	0.64	0.64
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	1.71	1.71
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.57	0.57
	Finishing Dust Collector (DC-107)	0.57	0.57
	Finishing Dust Collector (DC-108)	0.57	0.57

(b) The Nickel, Chromium, and Cobalt HAP emissions from the following units shall be limited to less than the emission limits listed in the table below:

Unit Description	Dust collector ID	Nickel Emission Limit (lbs/hr)	Chromium Emission Limit (lbs/hr)	Cobalt Emission Limit (lbs/hr)
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	0.079	0.287	0.024
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.053	0.192	0.016
	Finishing Dust Collector (DC-107)	0.053	0.192	0.016
	Finishing Dust Collector (DC-108)	0.053	0.192	0.016

Compliance with these limits, combined with the limits in Conditions D.1.2, D.2.2, D.4.2, and D.7.1 and the potential to emit PM10, PM2.5, nickel, chromium, and cobalt from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per twelve (12) consecutive month period, each, of any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and of total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

D.5.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Pneumatic Shell Removal (P2-KO)	0.89	3.79
Manual Machining & Grinding (P2-MMG)	0.89	3.79
Finishing Department (P2-FD)	0.89	3.79

The above pounds per hour limitations were 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

D.5.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

D.5.5 Particulate Control

(a) In order to ensure compliance with Conditions D.5.1, D.5.2, and D.5.3, the dust collectors (DC-105, DC-100, DC-106, DC-107, and DC-108) for particulate control shall be in operation and control emissions from the Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations at all times that the processes are in operation.

(b) In the event that bag failure is observed in a multi-compartment dust collector, 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.5.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

(a) Not later than 180 days after the startup of the Pneumatic Shell Removal (P2-KO) operation, in order to demonstrate compliance with Conditions D.5.1, D.5.2, and D.5.3, the Permittee shall perform PM, PM10, and PM2.5 testing of the Knockout dust collector (DC-105) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(b) Not later than 180 days after the startup of the Manual Machining & Grinding (P2-MMG) Operations, in order to demonstrate compliance with Conditions D.5.1, D.5.2, and D.5.3, the Permittee shall perform PM, PM10, PM2.5, nickel, chromium, and cobalt testing of the Manual Machining & Grinding dust collector (DC-100) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(c) Not later than 180 days after the startup of the Finishing Department (P2-FD) Operations, in order to demonstrate compliance with Conditions D.5.1, D.5.2, and D.5.3, the Permittee shall perform PM, PM10, PM2.5, nickel, chromium, and cobalt testing of the Finishing dust collectors (DC-106, DC-107, and DC-108) utilizing methods approved by the Commissioner at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.5.7 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the DC-105, DC-100, DC-106,

DC-107, and DC-108 dust collectors, used in conjunction with the Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations, at least once per day when any of the processes are in operation. When for any one reading, the pressure drop across a dust collector is outside its normal range, the Permittee shall take a reasonable response. The normal ranges are indicated in the table below, unless a different upper-bound or lower-bound value for a range is determined during the latest stack test.

Unit Description	Control	Normal Pressure Drop Range (in water)
Pneumatic Shell Removal (P2-KO)	Knockout Dust Collector (DC-105)	0.2 - 8.0
Manual Machining & Grinding (P2-MMG)	Manual Machining & Grinding Dust Collector (DC-100)	0.2 - 8.0
Finishing Department (P2-FD)	Finishing Dust Collector (DC-106)	0.2 - 8.0
	Finishing Dust Collector (DC-107)	0.2 - 8.0
	Finishing Dust Collector (DC-108)	0.2 - 8.0

(b) 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 reading that is outside the above-mentioned ranges is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.5.8 Broken or Failed Bag Detection

(a) For a single compartment dust collector 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 dust collector 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 dust collector's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.5.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.7, the Permittee shall maintain once per day records of the pressure drop across the DC-105, DC-100, DC-106, DC-107, and DC-108 dust collectors, used in conjunction with the Pneumatic Shell Removal (P2-KO), Manual Machining & Grinding (P2-MMG), and Finishing Department (P2-FD) operations. 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).

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

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

<u>Plant 2 - Natural Gas Usage Only</u>

(k)(4) One (1) Natural Gas-Fired Dewax Burnout Furnace, identified as P2-DBF, approved in 2014 for construction, with a maximum heat input capacity of 11.0 MMBtu/hr, with emissions controlled by Dewax Afterburner (DAB), with a heat input capacity of 1.75 MMBtu/hr, and exhausting to Stack S-110.

(q) Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

Insignificant Activities consisting of:

(j) Seven (7) Natural Gas-Fired Shell Preheat Ovens, identified as P2-PHO1 - P2-PHO7, approved in 2014 for construction, each with a maximum heat input capacity of 8.5 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-112 through S-118, respectively.

(k) Two (2) Natural Gas-Fired Post-Casting Ovens, identified as P2-PCO1 and P2-PCO2, approved in 2014 for construction, each with a maximum heat input capacity of 4.0 MMBtu/hr, with emissions uncontrolled, and exhausting through Stacks S-119 and S-120, respectively.

(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 2-8-4(1)]

D.6.1 Particulate [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4(a) (Particulate Limitations for Sources of Indirect Heating), particulate emissions from the three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) shall be limited to 0.36 pound per MMBtu heat input, each.

D.6.2 FESOP Limit [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) The total natural gas fuel usage at Plant 2 shall be less than 1061.7 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Carbon Dioxide (CO2) emissions from natural gas combustion shall not exceed 120,000 pounds per million cubic foot (lb/MMCF).

(c) Methane (CH4) emissions from natural gas combustion shall not exceed 2.3 pounds per million cubic foot (lb/MMCF).

(d) Nitrous oxide (N2O) emissions from natural gas combustion shall not exceed 2.2. pounds per million cubic foot (lb/MMCF).

(e) The Global Warming Potential (GWP) for carbon dioxide (CO2) shall not exceed 1.0.

(f) The Global Warming Potential (GWP) for methane (CH4) shall not exceed 25.

(g) The Global Warming Potential (GWP) for nitrous oxide (N2O) shall not exceed 298.

Compliance with the above limit, combined with the limit in Condition D.3.2 and the potential to emit greenhouse gases (GHGs) from all other emission units at this source, shall limit the source-wide total potential to emit of GHGs to less than 100,000 tons of CO2 equivalent (CO2e) emissions per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) not applicable.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.6.3 Record Keeping Requirements

(a) To document the compliance status of Condition D.6.2, the Permittee shall maintain records of the total amount of natural gas burned (in MMCF) in all natural gas-fired units at Plant 2 each month and each compliance period.

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

D.6.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.6.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(c)(2) One (1) mold hot topping process, identified as P1-HT, constructed before 2000, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting indoors.

Plant 2

(l)(2) One (1) Hot Top Operation, identified as P2-HT, approved in 2014 for construction, with a source-wide (Plant 1 and Plant 2) maximum ferrux usage rate of 450,000 pounds per year, uncontrolled, and exhausting to Stacks S-119 and S-120.

(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 2-8-4(1)]

D.7.1 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-4.1 not applicable, the HF emissions from the Plant 1 and Plant 2 Hot Top Operations shall be limited as follows:

(a) The total Ferrux usage rate for the Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT) shall not exceed 450,000 pounds per twelve (12) consecutive month period combined, with compliance determined at the end of each month.

(b) The HF emissions shall not exceed 0.0338 pound HF per pound of Ferrux.

Compliance with these limits, combined with the limits in Conditions D.2.2(b) and D.5.2(b) and the potential to emit HAPs from other emission units at the source, shall limit the source-wide total potential to emit of HF to less than ten (10) tons per twelve (12) consecutive month period and of total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.7.2 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.1, the Permittee shall maintain records of the total Ferrux used for Plants 1 and 2 combined for each month.

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

D.7.3 Reporting Requirements

To document the compliance status with Condition D.7.1, the Permittee shall submit a quarterly report of the Ferrux usage for the Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT) combined 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 2-8-5(a)(1) by an "authorized individual", as defined by 326 IAC 2-1.1-1(1).

E Sections of the Permit

(a) Emission unit descriptions were clarified to be consistent with the A and D sections of the permit.

(b) The Plant 2 electric induction furnaces (EIO1 - EIO4) were added to Section E.1 of the permit for 40 CFR 63, Subpart ZZZZZZ. The applicable provisions for the six (6) existing Plant 1 ovens were clarified and the applicable provisions for the four (4) new Plant 2 ovens were added to E.1.2.

(c) The Plant 2 emergency generators (EG1 and EG2) were added to Section E.2 of the permit for 40 CFR 63, Subpart ZZZZ. The applicable provisions for the new generators were added to E.2.2.

(d) Section E.3 was added to the permit to incorporate the applicable provisions of 40 CFR 60, Subpart Dc for boilers B1 - B3. The entire rule is included as Attachment C of the permit.

(e) Section E.4 was added o the permit to incorporate the applicable provisions of 40 CFR 60, Subpart IIII for emergency generators EG1 and EG2. The entire rule is included as Attachment D of the permit.

The permit has been revised as follows:

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 1

(c) Metal Melting and Auxiliary Operations, with a source wide nominal combined capacity of 0.59 tons per hour of metal, consisting of:

(1) **Six (6) Electric Induction Ovens, with a total maximum capacity of 0.59 tons per hour, including:**

(A) One (1) Electric Induction Oven, identified as P1-EIO10, constructed in 1988, uncontrolled, and exhausting indoors.

(B) One (1) Electric Induction Oven, identified as P1-EIO8, constructed in 1989, uncontrolled, and exhausting indoors.

(C) One (1) Electric Induction Oven, identified as P1-EIO5, constructed in 1990, uncontrolled, and exhausting indoors.

(D) Three (3) Electric Induction Ovens, identified as P1-EIO2, P1-EIO6, and P1-EIO9, constructed before 2000, uncontrolled, and exhausting indoors.

~~One (1) Electric Induction Oven, identified as VACUUM-CAST-02, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(2) One (1) Electric Induction Oven, identified as ROLLOVER-CAST-05, constructed in 1990, uncontrolled, and exhausting to the indoors.~~

~~(3) One (1) Electric Induction Oven, identified as VACUUM-CAST-06, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(4) One (1) Electric Induction Oven, identified as VACUUM-CAST-08, constructed in 1989, uncontrolled, and exhausting to the indoors.~~

~~(5) One (1) Electric Induction Oven, identified as VACUUM-CAST-09, constructed before 2000, uncontrolled, and exhausting to the indoors.~~

~~(6) One (1) Electric Induction Oven, identified as VACUUM-CAST-10, constructed in 1988, uncontrolled, and exhausting to the indoors.~~

Under 40 CFR 63, Subpart ZZZZZZ, the six (6) electric induction ovens are considered **existing** affected sources.

Plant 2

(l) Metal Melting and Auxiliary Operations, consisting of:

(1) Four (4) Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4, approved in 2014 for construction, with a total maximum capacity of 0.90 ton per hour, and with emissions uncontrolled.

Under 40 CFR 63, Subpart ZZZZZZ, P2-EIO1 - P2-EIO4 are considered new affected sources.

(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 **2-8-4(1)**~~20~~] ~~[40 CFR 63]~~

E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries [326 IAC 20-1] [40 CFR Part 63]

Pursuant to 40 CFR 63**.11555**, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions as applicable, which are incorporated by reference as 326 IAC 20-1, **as specified in Table 1 of 40 CFR 63, Subpart ZZZZZZ in accordance with the schedule**~~except as otherwise specified~~ in 40 CFR 63, Subpart ZZZZZZ.

E.1.2 National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries] [40 CFR Part 63, Subpart ZZZZZZ]

The Permittee, which owns and operates an other nonferrous foundry that is an area source of hazardous air pollutant (HAP) emissions shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZZ (included as Attachment A of this permit):

(a) Six (6) Plant 1 Electric Induction Ovens, identified as P1-EIO2, P1-EIO5, P1-EIO6, P1-EIO8, P1-EIO9, and P1-EIO10:

(~~a~~**1**) 40 CFR 63.11544(a)**(3)**, **(a)(4),** (b), (c), ~~and~~ (f)
(~~b~~**2**) 40 CFR 63.11545(a)

(~~c~~**3**) 40 CFR 63.11550(a), **(b)(1),** (c), ~~and~~ (d)
(4) 40 CFR 63.11551
(~~d~~**5**) 40 CFR 63.11552(a)**, (b)**
(~~e~~**6**) 40 CFR 63.11553
(~~f~~**7**) 40 CFR 63.11555
(~~g~~**8**) 40 CFR 63.11556
(~~h~~**9**) 40 CFR 63.11557
(~~i~~**10**) Table 1 **to Subpart ZZZZZZ of Part 63**

(b) Four (4) Plant 2 Electric Induction Ovens, identified as P2-EIO1 - P2-EIO4:

(1) 40 CFR 63.11544(a)(3), (a)(4), (b), (d), (f)
(2) 40 CFR 63.11545(c)
(3) 40 CFR 63.11550(a), (b)(2), (d)
(4) 40 CFR 63.11551(a), (c)
(5) 40 CFR 63.11552(a)
(6) 40 CFR 63.11553
(7) 40 CFR 63.11555
(8) 40 CFR 63.11556
(9) 40 CFR 63.11557
(10) Table 1 to Subpart ZZZZZZ of Part 63

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities consisting of:

Plant 1

(b) Two (2) standby diesel generators, identified as **P1-**GEN-AUXPWR-01 & **P1-**GEN-AUXPWR-02, with nominal capacities of 315 hp and 375 hp, respectively. Each generator was manufactured before April 1, 2006 and constructed before June 12, 2006.

Under 40 CFR 63, Subpart ZZZZ, P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02~~These units~~ are considered **existing** affected sources ~~under 40 CFR Part 63, Subpart ZZZZ~~.

Plant 2

(l) Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

(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 **2-8-4(1)**~~20~~] ~~[40 CFR 63]~~

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-1] [40 CFR Part 63]

(a) Pursuant to 40 CFR 63**.6665**, 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 P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02, as specified in Table 8 of 40 CFR 63, Subpart ZZZZ in accordance with the schedule in** ~~except as otherwise specified in~~ 40 CFR 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.6665, the emergency generators P2-EG1 and P2-EG2 do not have to meet the requirements of 40 CRF 63, Subpart A (General Provisions),

E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82] [40 CFR Part 63, Subpart ZZZZ]

The Permittee, which owns and operates stationary reciprocating internal combustion engines shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ, which are incorporated by reference as 326 IAC 20-82~~The two (2) diesel fired generators are subject to the requirements of the 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engine (RICE), which are incorporated by reference as 326 IAC 20-82, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ~~ (included as Attachment B of this permit):

(a) Plant 1 - P1-GEN-AUXPWR-01 & P1-GEN-AUXPWR-02:

(a) 40 CFR 63.6580
(b) 40 CFR 63.6585
(c) 40 CFR 63.6590(a)(1)(iii) and (iv)
(d) 40 CFR 63.6595(a)(1), (b), and (c)
(e) 40 CFR 63.6603(a)
(f) 40 CFR 63.6605
(g) 40 CFR 63.6625(e)(3), (f), (h), and (i)
(h) 40 CFR 63.6635
(i) 40 CFR 63.6640(a), (b), (e), and (f)
(j) 40 CFR 63.6645(a)(5)
(k) 40 CFR 63.6650
(l) 40 CFR 63.6655
(m) 40 CFR 63.6660
(n) 40 CFR 63.6665
(o) 40 CFR 63.6670
(p) 40 CFR 63.6675
(q) Table 2d **to Subpart ZZZZ of Part 63** (item 4)
(r) Table 6 **to Subpart ZZZZ of Part 63** (item 9)
(s) Table 8 **to Subpart ZZZZ of Part 63**

(b) Plant 2 - P2-EG1 & P2-EG2:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), (d)
(3) 40 CFR 63.6590(a)(2)(iii), (c)(1)
(4) 40 CFR 63.6595(a)(7)
(5) 40 CFR 63.6665
(6) 40 CFR 63.6670
(7) 40 CFR 63.6675

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Plant 2

(q) Three (3) Natural Gas Fired Boilers, identified as P2-B1, P2-B2, and P2-B3, approved in 2014 for construction, each with a maximum heat input capacity of 16.0 MMBtu/hr, with emissions uncontrolled, and exhausting to Stacks S-121 - S-123, respectively.

Under 40 CFR 60, Subpart Dc, P2-B1, P2-B2, and P2-B3 are considered affected facilities.

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

New Source Performance Standard Requirements [326 IAC 2-8-4(1)]

E.3.1 General Provisions Relating to New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart A] [326 IAC 12-1]

The Permittee shall comply with the provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR 60, Subpart Dc.

E.3.2 Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Dc] [326 IAC 12]

The Permittee, which owns and operates three (3) Natural Gas-Fired Boilers (P2-B1 - P2-B3) shall comply with the following provisions of 40 CFR 60, Subpart Dc, which are incorporated by reference as 326 IAC 12 (included as Attachment C of this permit):

(1) 40 CFR 60.40c(a), (b), (c), (d)
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a), (g)(2), (i), (j)

SECTION E.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities consisting of:

Plant 2

(l) Two (2) Diesel-Fired Emergency Generators, identified as P2-EG1 and P2-EG2, approved in 2014 for construction, each with a maximum heat input capacity of 1.71 MMBtu/hr (a maximum site rating of 500 kW (670.51 HP)), with emissions uncontrolled, and exhausting to Stacks S-124 and S-125, respectively.

Under 40 CFR 60, Subpart IIII, P2-EG1 and P2-EG2 are considered affected facilities. Under 40 CFR 63, Subpart ZZZZ, P2-EG1 and P2-EG2 are considered new affected sources.

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

New Source Performance Standard Requirements [326 IAC 2-8-4(1)]

E.4.1 General Provisions Relating to New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart A] [326 IAC 12-1]

Pursuant to 40 CFR 60.4218, the Permittee shall comply with the provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, as specified in Table 8 of 40 CFR 60, Subpart IIII in accordance with the schedule in 40 CFR 60, Subpart IIII.

E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart IIII] [326 IAC 12]

The Permittee, which owns and operates two (2) Diesel-Fired Emergency Generators (P2-EG1 & P2-EG2) shall comply with the following provisions of 40 CFR 60, Subpart IIII, which are incorporated by reference as 326 IAC 12 (included as Attachment D of this permit):

(1) 40 CFR 60.4200(a)(2)(i), (c)
(2) 40 CFR 60.4202(a)(2)
(3) 40 CFR 60.4205(b), (e)
(4) 40 CFR 60.4206
(5) 40 CFR 60.4207(b)
(6) 40 CFR 60.4208(a), (h), (i)
(7) 40 CFR 60.4209(a)
(8) 40 CFR 60.4211(a), (c), (f), (g)
(9) 40 CFR 60.4212
(10) 40 CFR 60.4214(b), (d)
(11) 40 CFR 60.4218
(12) 40 CFR 60.4219
(13) Table 5 to Subpart IIII of Part 60
(14) Table 8 to Subpart IIII of Part 60

Permit Forms

Quarterly reporting forms were added to the permit for the Plant 1 and Plant 2 natural gas limits and the Plant 1 and Plant 2 Hot Top Operations limit.

The permit has been revised as follows:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FESOP Quarterly Report

Source Name: **Homet Castings and Services, Inc.**
Source Address: **1110 E. Lincolnway, LaPorte, Indiana 46350**
FESOP Permit No.: **F091-31556-00047**
Facility: **Plant 1 Fuel Combustion Units**
Parameter: **Natural gas fuel usage**
Limit: **Shall be less than 584 million cubic feet (MMCF) 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
	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)
	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

FESOP Quarterly Report

Source Name: **Homet Castings and Services, Inc.**
Source Address: **1110 E. Lincolnway, LaPorte, Indiana 46350**
FESOP Permit No.: **F091-31556-00047**
Facility: **Plant 2 Fuel Combustion Units**
Parameter: **Natural gas fuel usage**
Limit: **Shall be less than 1061.7 million cubic feet (MMCF) 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
	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)	Natural Gas Fuel Usage (MMCF)
	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

FESOP Quarterly Report

Source Name: **Homet Castings and Services, Inc.**
Source Address: **1110 E. Lincolnway, LaPorte, Indiana 46350**
FESOP Permit No.: **F091-31556-00047**
Facility: **Plant 1 and Plant 2 Hot Top Operations (P1-HT and P2-HT)**
Parameter: **Ferrux usage**
Limit: **Shall not exceed 450,000 pounds 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
	Ferrux Usage (lb)	Ferrux Usage (lb)	Ferrux Usage (lb)
	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: _____

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 February 21, 2014.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 091-34217-00047. The staff recommends to the Commissioner that this FESOP Significant Permit Revision be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Laura Spriggs Thompson at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-5693 or toll free at 1-800-451-6027 extension 3-5693.

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

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem

Appendix A: Emissions Calculations
Summary: Plants 1 and 2 Unrestricted PTE

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Unrestricted Potential to Emit

	Unrestricted PTE (ton/yr)										
Process/Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Single Worst HAP	HAP
Plant 1											
Wax Pattern Assembly Operation (P1-WPA)	--	--	--	--	--	4.75	--	--	1.15	0.85	Xylene
Dip Flour Manufacturing Operation (P1-DMO)	6.57	6.57	6.57	--	--	--	--	--	0	0	N/A
22 Sanding Towers (P1-ST)	2,371.03	2,371.03	2,371.03	--	--	--	--	--	0	0	N/A
Aluminum Oxide Barrel Sander (P1-AOBS)	0.01	0.01	0.01	--	--	--	--	--	0	0	N/A
Dewax Furnace (P1-DBO-Big Bertha) - Process and Combustion Emissions	3.60	3.75	3.75	0.01	2.47	0.54	2.07	2,981	0.05	0.04	Hexane
Shell Latex Surface Coating Booth (P1-SLC)	0.02	0.02	0.02	--	--	0.01	--	--	0	0	N/A
6 Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	2.33	2.33	2.33	--	--	--	--	--	1.00	0.75	Chromium
Hot Topping Process (P1-HT)	--	--	--	--	--	--	--	--	3.81	3.81	HF
Mold Wrap Operation (P1-MW)	0.25	0.25	0.25	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P1-SAB)	0.07	0.07	0.07	--	--	0.06	--	--	3.60E-04	3.60E-04	Methanol
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	124.42	124.42	124.42	--	--	--	--	--	0	0	N/A
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	1.40	1.40	HCl
Post-Cast Operations (P1-PCO)	126.09	126.09	126.09	--	--	--	--	--	54.22	40.47	Chromium
Finishing Operations (P1-FO) (Carter Day)	100.97	100.97	100.97	--	--	--	--	--	5.22	3.65	Chromium
Finishing Operations (P1-FO) (West Metals)	103.20	103.20	103.20	--	--	--	--	--	10.79	7.71	Chromium
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	3.74	--	--	0	0	N/A
P1-Superior Boiler #3	0.11	0.44	0.44	0.03	5.75	0.32	4.83	6,946	0.11	0.10	Hexane
Insignificant Activities											
Insignificant Natural Gas Combustion (small boilers, hot water heater, space heaters, casting ovens)	0.42	1.69	1.69	0.13	22.20	1.22	18.65	26,799	0.42	0.40	Hexane
2 Standby Diesel Generators	0.38	0.38	0.38	0.35	5.35	0.43	1.15	199.05	0.005	0.001	Formaldehyde
KOH Tanks	1.05	1.05	1.05	--	--	--	--	--	0	0	N/A
Grinding and Finishing	0.13	0.06	0.06	--	--	--	--	--	0.01	0.01	Chromium
Water Blast	0.64	0.64	0.64	--	--	--	--	--	0	0	N/A
Welding	0.33	0.33	0.33	--	--	--	--	--	0.28	0.15	Cobalt
Cooling Towers	8.88	7.28	7.28	--	--	--	--	--	0	0	N/A
Plant 1 Total	***2850.50***	***2850.56***	***2850.56***	***0.54***	***35.77***	***11.07***	***26.71***	***36,925***	***78.46***	***52.67***	***Chromium***
Plant 2											
Wax Pattern Assembly Operation (P2-WPA)	--	--	--	--	--	7.13	--	--	1.73	1.28	Xylene
Dip Slurry Preparation Process (P2-DSP)	9.90	9.90	9.90	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - High Volume Sanding	1,778.28	1,778.28	1,778.28	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - Low Volume Sanding	1,778.28	1,778.28	1,778.28	--	--	--	--	--	0	0	N/A
Dewax Burnout Furnace (P2-DBF) - Process and Combustion Emissions	5.44	5.75	5.75	0.03	5.48	0.90	4.60	6,609	0.10	0.10	Hexane
Sticky Latex Coating Booth (P2-SLC)	0.03	0.03	0.03	--	--	0.02	--	--	0	0	N/A
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	3.55	3.55	3.55	--	--	--	--	--	1.53	1.14	Chromium
Hot Top Operation (P2-HT)	--	--	--	--	--	--	--	--	3.81	3.81	HF
Mold Wrap Operation (P2-MW)	0.38	0.38	0.38	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P2-SAB)	0.10	0.10	0.10	--	--	0.09	--	--	5.40E-04	5.40E-04	Methanol
Pneumatic Shell Removal (P2-KO)	93.85	93.85	93.85	--	--	--	--	--	0	0	N/A
Manual Machining & Grinding (P2-MMG)	2507.81	2507.81	2507.81	--	--	--	--	--	571.77	421.59	Chromium
Finishing Department (P2-FD)	2507.81	2507.81	2507.81	--	--	--	--	--	571.77	421.59	Chromium
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	5.61	--	--	0	0	N/A
Boilers (P2-B1 - P2-B3)	0.39	1.57	1.57	0.12	20.61	1.13	17.31	24,881	0.39	0.37	Hexane
Insignificant Activities											
Insignificant Natural Gas Combustion (preheat ovens, post-casting ovens)	0.55	2.20	2.20	0.17	28.99	1.59	24.35	34,989	0.55	0.52	Hexane
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	0.23	0.13	0.13	1.36	8.05	0.24	1.84	390.36	0.004	0.002	Benzene
KOH Salt Bath (P2-KOH)	1.58	1.58	1.58	--	--	--	--	--	0	0	N/A
Autoclave Operation (P2-AC)	1.13	1.13	1.13	--	--	--	--	--	0	0	N/A
Water Blasting Operation (P2-IWBO)	0.75	0.75	0.75	--	--	--	--	--	0	0	N/A
Cooling Tower (P2-CT)	3.33	2.73	2.73	--	--	--	--	--	0	0	N/A
Grinding and Finishing	0.20	0.09	0.09	--	--	--	--	--	0.02	0.01	Chromium
Plant 2 Total	***8693.6***	***8695.9***	***8695.9***	***1.7***	***63.1***	***16.7***	***48.1***	***66,870***	***1151.7***	***844.3***	***Chromium***
Plants 1 and 2 Total	**11544.1**	**11546.5**	**11546.5**	**2.2**	**98.9**	**27.8**	**74.8**	**103,794**	**1230.1**	**897.0**	**Chromium**

Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the table.

Appendix A: Emissions Calculations
Summary: Plants 1 and 2 PTE After Controls

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Potential to Emit After Controls

	Controlled PTE (ton/yr)										
Process/Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Single Worst HAP	HAP
Plant 1											
Wax Pattern Assembly Operation (P1-WPA)	--	--	--	--	--	4.75	--	--	1.15	0.85	Xylene
Dip Flour Manufacturing Operation (P1-DMO)	0.01	0.01	0.01	--	--	--	--	--	0	0	N/A
22 Sanding Towers (P1-ST)	2.37	2.37	2.37	--	--	--	--	--	0	0	N/A
Aluminum Oxide Barrel Sander (P1-AOBS)	0.01	0.01	0.01	--	--	--	--	--	0	0	N/A
Dewax Furnace (P1-DBO-Big Bertha) - Process and Combustion Emissions	3.60	3.75	3.75	0.01	2.47	0.54	2.07	2,981	0.05	0.04	Hexane
Shell Latex Surface Coating Booth (P1-SLC)	0.02	0.02	0.02	--	--	0.01	--	--	0	0	N/A
6 Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	2.33	2.33	2.33	--	--	--	--	--	1.00	0.75	Chromium
Hot Topping Process (P1-HT)	--	--	--	--	--	--	--	--	3.81	3.81	HF
Mold Wrap Operation (P1-MW)	0.25	0.25	0.25	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P1-SAB)	0.07	0.07	0.07	--	--	0.06	--	--	3.60E-04	3.60E-04	Methanol
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	1.24	1.24	1.24	--	--	--	--	--	0	0	N/A
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	1.40	1.40	HCl
Post-Cast Operations (P1-PCO)	1.26	1.26	1.26	--	--	--	--	--	0.54	0.40	Chromium
Finishing Operations (P1-FO) (Carter Day)	5.05	5.05	5.05	--	--	--	--	--	0.26	0.18	Chromium
Finishing Operations (P1-FO) (West Metals)	1.03	1.03	1.03	--	--	--	--	--	0.11	0.08	Chromium
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	3.74	--	--	0	0	N/A
P1-Superior Boiler #3	0.11	0.44	0.44	0.03	5.75	0.32	4.83	6,946	0.11	0.10	Hexane
Insignificant Activities											
Insignificant Natural Gas Combustion (small boilers, hot water heater, space heaters, casting ovens)	0.42	1.69	1.69	0.13	22.20	1.22	18.65	26,799	0.42	0.40	Hexane
2 Standby Diesel Generators	0.38	0.38	0.38	0.35	5.35	0.43	1.15	199.1	0.005	0.001	Formaldehyde
KOH Tanks	1.05	1.05	1.05	--	--	--	--	--	0	0	N/A
Grinding and Finishing	0.13	0.06	0.06	--	--	--	--	--	0.01	0.01	Chromium
Water Blast	0.64	0.64	0.64	--	--	--	--	--	0	0	N/A
Welding	0.33	0.33	0.33	--	--	--	--	--	0.28	0.15	Cobalt
Cooling Towers	8.88	7.28	7.28	--	--	--	--	--	0	0	N/A
Plant 1 Total	***29.17***	***29.23***	***29.23***	***0.54***	***35.77***	***11.07***	***26.71***	***36,925***	***9.13***	***3.81***	***HF***
Plant 2											
Wax Pattern Assembly Operation (P2-WPA)	--	--	--	--	--	7.13	--	--	1.73	1.28	Xylene
Dip Slurry Preparation Process (P2-DSP)	0.01	0.01	0.01	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - High Volume Sanding	1.78	1.78	1.78	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - Low Volume Sanding	1.78	1.78	1.78	--	--	--	--	--	0	0	N/A
Dewax Burnout Furnace (P2-DBF) - Process and Combustion Emissions	5.44	5.75	5.75	0.03	5.48	0.90	4.60	6,609	0.10	0.10	Hexane
Sticky Latex Coating Booth (P2-SLC)	0.03	0.03	0.03	--	--	0.015	--	--	0	0	N/A
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	3.55	3.55	3.55	--	--	--	--	--	1.53	1.14	Chromium
Hot Top Operation (P2-HT)	--	--	--	--	--	--	--	--	3.81	3.81	HF
Mold Wrap Operation (P2-MW)	0.38	0.38	0.38	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P2-SAB)	0.10	0.10	0.10	--	--	0.09	--	--	5.40E-04	5.40E-04	Methanol
Pneumatic Shell Removal (P2-KO)	0.94	0.94	0.94	--	--	--	--	--	0	0	N/A
Manual Machining & Grinding (P2-MMG)	2.51	2.51	2.51	--	--	--	--	--	0.57	0.42	Chromium
Finishing Department (P2-FD)	2.51	2.51	2.51	--	--	--	--	--	0.57	0.42	Chromium
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	5.61	--	--	0	0	N/A
Boilers (P2-B1 - P2-B3)	0.39	1.57	1.57	0.12	20.61	1.13	17.31	24,881	0.39	0.37	Hexane
Insignificant Activities											
Insignificant Natural Gas Combustion (preheat ovens, post-casting ovens)	0.55	2.20	2.20	0.17	28.99	1.59	24.35	34,989	0.55	0.52	Hexane
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	0.23	0.13	0.13	1.36	8.05	0.24	1.84	390.4	0.004	0.002	Benzene
KOH Salt Bath (P2-KOH)	0.16	0.16	0.16	--	--	--	--	--	0	0	N/A
Autoclave Operation (P2-AC)	0.11	0.11	0.11	--	--	--	--	--	0	0	N/A
Water Blasting Operation (P2-IWBO)	0.75	0.75	0.75	--	--	--	--	--	0	0	N/A
Cooling Tower (P2-CT)	3.33	2.73	2.73	--	--	--	--	--	0	0	N/A
Grinding and Finishing	0.20	0.09	0.09	--	--	--	--	--	0.02	0.01	Chromium
Plant 2 Total	***24.74***	***27.07***	***27.07***	***1.69***	***63.12***	***16.71***	***48.10***	***66,870***	***9.26***	***3.81***	***HF***
Plants 1 and 2 Total	**53.91**	**56.31**	**56.30**	**2.22**	**98.89**	**27.78**	**74.81**	**103,794**	**18.40**	**7.61**	**HF**

Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the table.

Appendix A: Emissions Calculations
Summary: Plants 1 and 2 Limited PTE

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Potential to Emit After Limits

	Limited PTE (ton/yr)										
Process/Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Single Worst HAP	HAP
Plant 1											
Wax Pattern Assembly Operation (P1-WPA)	--	--	--	--	--	4.75	--	--	1.15	0.85	Xylene
Dip Flour Manufacturing Operation (P1-DMO)	1.97	1.97	1.97	--	--	--	--	--	0	0	N/A
22 Sanding Towers (P1-ST)	4.07	4.07	4.07	--	--	--	--	--	0	0	N/A
Aluminum Oxide Barrel Sander (P1-AOBS)	0.01	0.01	0.01	--	--	--	--	--	0	0	N/A
Dewax Furnace (P1-DBO-Big Bertha) - Process Emissions*	3.56	3.56	3.56	*	*	0.40	*	*	*	*	N/A
Shell Latex Surface Coating Booth (P1-SLC)	0.02	0.02	0.02	--	--	0.01	--	--	0	0	N/A
6 Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	2.33	2.33	2.33	--	--	--	--	--	1.00	0.75	Chromium
Hot Topping Processes (P1-HT and P2-HT)**	--	--	--	--	--	--	--	--	7.61	7.61	HF
Mold Wrap Operation (P1-MW)	0.25	0.25	0.25	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P1-SAB)	0.07	0.07	0.07	--	--	0.06	--	--	3.60E-04	3.60E-04	Methanol
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	5.69	5.69	5.69	--	--	--	--	--	0	0	N/A
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	1.40	1.40	HCl
Post-Cast Operations (P1-PCO)	2.19	2.19	2.19	--	--	--	--	--	1.88	1.41	Chromium
Finishing Operations (P1-FO) (Carter Day)	8.85	8.85	8.85	--	--	--	--	--	0.92	0.64	Chromium
Finishing Operations (P1-FO) (West Metals)	1.93	1.93	1.93	--	--	--	--	--	0.40	0.28	Chromium
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	3.74	--	--	0	0	N/A
P1-Superior Boiler #3*	*	*	*	*	*	*	*	*	*	*	N/A
*Plant 1 Limited Natural Gas Emissions	0.55	2.22	2.22	0.18	29.20	1.61	24.53	35,248	0.55	0.53	Hexane
Insignificant Activities											
Insignificant Natural Gas Combustion* (small boilers, hot water heater, space heaters, casting ovens)	*	*	*	*	*	*	*	*	*	*	N/A
2 Standby Diesel Generators	0.38	0.38	0.38	0.35	5.35	0.43	1.15	199.1	0.005	0.001	Formaldehyde
KOH Tanks	1.05	1.05	1.05	--	--	--	--	--	0	0	N/A
Grinding and Finishing	0.13	0.06	0.06	--	--	--	--	--	0.01	0.01	Chromium
Water Blast	0.64	0.64	0.64	--	--	--	--	--	0	0	N/A
Welding	0.33	0.33	0.33	--	--	--	--	--	0.28	0.15	Cobalt
Cooling Towers	8.88	7.28	7.28	--	--	--	--	--	0	0	N/A
Plant 1 Total	***42.89***	***42.88***	***42.88***	***0.53***	***34.55***	***11.00***	***25.68***	***35447.28***	***15.20***	***7.61***	***HF***
Plant 2											
Wax Pattern Assembly Operation (P2-WPA)	--	--	--	--	--	7.13	--	--	1.73	1.28	Xylene
Dip Slurry Preparation Process (P2-DSP)	2.98	2.98	2.98	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - High Volume Sanding	5.34	5.34	5.34	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - Low Volume Sanding	5.34	5.34	5.34	--	--	--	--	--	0	0	N/A
Dewax Burnout Furnace (P2-DBF) - Process Emissions*	5.34	5.34	5.34	*	*	0.60	*	*	*	*	N/A
Sticky Latex Coating Booth (P2-SLC)	0.03	0.03	0.03	--	--	0.015	--	--	0	0	N/A
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	3.55	3.55	3.55	--	--	--	--	--	1.53	1.14	Chromium
Hot Top Operation (P2-HT)**	--	--	--	--	--	--	--	--	**	**	HF
Mold Wrap Operation (P2-MW)	0.38	0.38	0.38	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P2-SAB)	0.10	0.10	0.10	--	--	0.09	--	--	5.40E-04	5.40E-04	Methanol
Pneumatic Shell Removal (P2-KO)	2.80	2.80	2.80	--	--	--	--	--	0	0	N/A
Manual Machining & Grinding (P2-MMG)	7.49	7.49	7.49	--	--	--	--	--	1.71	1.26	Chromium
Finishing Department (P2-FD)	7.49	7.49	7.49	--	--	--	--	--	3.43	2.52	Chromium
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	5.61	--	--	0	0	N/A
Boilers (P2-B1 - P2-B3)	*	*	*	*	*	*	*	*	*	*	N/A
*Plant 2 Limited Natural Gas Emissions	1.01	4.03	4.03	0.32	53.09	2.92	44.59	64080.55	1.00	0.96	Hexane
Insignificant Activities											
Insignificant Natural Gas Combustion (preheat ovens, post-casting ovens)	*	*	*	*	*	*	*	*	*	*	N/A
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	0.23	0.13	0.13	1.36	8.05	0.24	1.84	390.4	0.004	0.002	Benzene
KOH Salt Bath (P2-KOH)	1.58	1.58	1.58	--	--	--	--	--	0	0	N/A
Autoclave Operation (P2-AC)	1.13	1.13	1.13	--	--	--	--	--	0	0	N/A
Water Blasting Operation (P2-IWBO)	0.75	0.75	0.75	--	--	--	--	--	0	0	N/A
Cooling Tower (P2-CT)	3.33	2.73	2.73	--	--	--	--	--	0	0	N/A
Grinding and Finishing	0.20	0.09	0.09	--	--	--	--	--	0.02	0.01	Chromium
Plant 2 Total	***49.06***	***51.28***	***51.28***	***1.67***	***61.13***	***16.60***	***46.44***	***64470.91***	***9.41***	***4.93***	***Chromium***
Plants 1 and 2 Total	**91.95**	**94.16**	**94.16**	**2.20**	**95.68**	**27.60**	**72.12**	**99,918**	**24.62**	**8.10**	**Chromium**

*All natural gas combustion emissions are included under either a limit for Plant 1 or a limit for Plant 2.
**The limited Plant 2 Hot Top Operation (P2-HT) emissions are included with the limited Plant 1 Hot Top Operation (P1-HT) emissions.
Note: Shaded cells indicate limited emissions.
Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the table.

Appendix A: Emissions Calculations
HAP Summary: Plants 1 and 2 Unrestricted PTE

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Unrestricted Potential to Emit

	Unrestricted PTE (ton/yr)																							
Process/Unit	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Dichlorobenzene	Ethyl Benzene	Formaldehyde	Hexane	Methanol	PAH HAPs	Toluene	Xylene	o-Xylene	Cadmium	Chromium	Cobalt	Lead	Manganese	Nickel	HCl	HF	Total HAPs	Single Worst HAP	HAP
Plant 1																								
Wax Pattern Assembly Operation (P1-WPA)	--	--	0.000	--	--	0.17	--	--	--	--	0.004	0.85	0.13	--	--	--	--	--	--	--	--	1.15	0.85	Xylene
Dip Flour Manufacturing Operation (P1-DMO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
22 Sanding Towers (P1-ST)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Aluminum Oxide Barrel Sander (P1-AOBS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Dewax Furnace (P1-DBO-Big Bertha) - Process and Combustion Emissions	--	--	5.19E-05	--	2.96E-05	--	1.85E-03	4.44E-02	--	--	8.40E-05	--	--	2.72E-05	3.46E-05	2.07E-06	1.23E-05	9.38E-06	5.19E-05	--	--	0.05	0.04	Hexane
Shell Latex Surface Coating Booth (P1-SLC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
6 Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.75	0.06	--	--	0.19	--	--	1.00	0.75	Chromium
Hot Topping Process (P1-HT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.81	3.81	3.81	HF
Mold Wrap Operation (P1-MW)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P1-SAB)	--	--	--	--	--	--	--	--	3.60E-04	--	--	--	--	--	--	--	--	--	--	--	--	3.60E-04	3.60E-04	Methanol
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.40	--	1.40	1.40	HCl
Post-Cast Operations (P1-PCO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	40.47	3.40	--	--	10.34	--	--	54.22	40.47	Chromium
Finishing Operations (P1-FO) (Carter Day)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.65	0.52	--	--	1.05	--	--	5.22	3.65	Chromium
Finishing Operations (P1-FO) (West Metals)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.71	0.59	--	--	2.49	--	--	10.79	7.71	Chromium
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
P1-Superior Boiler #3	--	--	1.21E-04	--	6.90E-05	--	4.32E-03	1.04E-01	--	--	1.96E-04	--	--	6.33E-05	8.06E-05	4.83E-06	2.88E-05	2.19E-05	1.21E-04	--	--	0.11	0.10	Hexane
Insignificant Activities																						0	0	N/A
Insignificant Natural Gas Combustion (small boilers, hot water heater, space heaters, casting ovens)	--	--	4.66E-04	--	2.66E-04	--	1.67E-02	4.00E-01	--	--	7.55E-04	--	--	2.44E-04	3.11E-04	2.56E-05	1.11E-04	8.44E-05	4.66E-04	--	--	0.42	0.40	Hexane
2 Standby Diesel Generators	9.26E-04	1.12E-04	1.13E-03	4.72E-05	--	--	1.42E-03	--	--	2.03E-04	4.94E-04	3.44E-04	--	--	--	--	--	--	--	--	--	4.68E-03	1.42E-03	Formaldehyde
KOH Tanks	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Grinding and Finishing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.28E-03	7.19E-04	--	--	2.27E-03	--	--	1.03E-02	7.28E-03	Chromium
Water Blast	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Welding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.15	--	0.003	0.04	--	--	0.28	0.15	Cobalt
Cooling Towers	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Plant 1 Total	***9.26E-04***	***1.12E-04***	***1.85E-03***	***4.72E-05***	***3.65E-04***	***0.17***	***0.02***	***0.55***	***3.60E-04***	***2.03E-04***	***5.90E-03***	***0.85***	***0.13***	***3.35E-04***	***52.67***	***4.74***	***1.52E-04***	***3.21E-03***	***14.11***	***1.40***	***3.81***	***78.46***	***52.67***	***Chromium***
Plant 2																								
Wax Pattern Assembly Operation (P2-WPA)	--	--	0.000	--	--	0.25	--	--	--	--	0.01	1.28	0.20	--	--	--	--	--	--	--	--	1.73	1.28	Xylene
Dip Slurry Preparation Process (P2-DSP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - High Volume Sanding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - Low Volume Sanding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Dewax Burnout Furnace (P2-DBF) - Process and Combustion Emissions	--	--	1.15E-04	--	6.57E-05	--	4.11E-03	9.86E-02	--	--	1.86E-04	--	--	6.02E-05	7.67E-05	4.60E-06	2.74E-05	2.08E-05	1.15E-04	--	--	0.10	0.10	Hexane
Sticky Latex Coating Booth (P2-SLC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.14	0.10	--	--	0.29	--	--	1.53	1.14	Chromium
Hot Top Operation (P2-HT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.81	3.81	3.81	HF
Mold Wrap Operation (P2-MW)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P2-SAB)	--	--	--	--	--	--	--	--	5.40E-04	--	--	--	--	--	--	--	--	--	--	--	--	5.40E-04	5.40E-04	Methanol
Pneumatic Shell Removal (P2-KO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Manual Machining & Grinding (P2-MMG)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	421.59	34.62	--	--	115.56	--	--	571.77	421.59	Chromium
Finishing Department (P2-FD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	421.59	34.62	--	--	115.56	--	--	571.77	421.59	Chromium
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Boilers (P2-B1 - P2-B3)	--	--	4.33E-04	--	2.47E-04	--	1.55E-02	0.37	--	--	7.01E-04	--	--	2.27E-04	2.89E-04	1.73E-05	1.03E-04	7.83E-05	4.33E-04	--	--	0.39	0.37	Hexane
Insignificant Activities																								
Insignificant Natural Gas Combustion (preheat ovens, post-casting ovens)	--	--	6.09E-04	--	3.48E-04	--	2.17E-02	5.22E-01	--	--	9.86E-04	--	--	3.19E-04	4.06E-04	4.63E-05	1.45E-04	1.10E-04	6.09E-04	--	--	0.55	0.52	Hexane
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	5.91E-05	1.85E-05	1.82E-03	--	--	--	1.85E-04	--	--	4.98E-04	6.59E-04	4.53E-04	--	--	--	--	--	--	--	--	--	3.69E-03	1.82E-03	Benzene
KOH Salt Bath (P2-KOH)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Autoclave Operation (P2-AC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Water Blasting Operation (P2-IWBO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Cooling Tower (P2-CT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Grinding and Finishing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.09E-02	1.08E-03	--	--	3.40E-03	--	--	1.54E-02	1.09E-02	Chromium
Plant 2 Total	***5.91E-05***	***1.85E-05***	***3.11E-03***	***0***	***6.61E-04***	***0.25***	***0.04***	***0.99***	***5.40E-04***	***4.98E-04***	***9.09E-03***	***1.28***	***0.20***	***6.06E-04***	***844.33***	***69.35***	***2.75E-04***	***2.09E-04***	***231.42***	***0***	***3.81***	***1151.66***	***844.33***	***Chromium***
Plants 1 and 2 Total	**9.85E-04**	**1.30E-04**	**4.96E-03**	**4.72E-05**	**1.03E-03**	**0.42**	**0.07**	**1.54**	**9.00E-04**	**7.00E-04**	**0.01**	**2.13**	**0.33**	**9.40E-04**	**897.00**	**74.09**	**4.27E-04**	**3.42E-03**	**245.53**	**1.40**	**7.61**	**1230.12**	**897.00**	**Chromium**

Appendix A: Emissions Calculations
HAP Summary: Plants 1 and 2 PTE After Controls

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Potential to Emit After Controls

	Controlled PTE (ton/yr)																							
Process/Unit	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Dichlorobenzene	Ethyl Benzene	Formaldehyde	Hexane	Methanol	PAH HAPs	Toluene	Xylene	o-Xylene	Cadmium	Chromium	Cobalt	Lead	Manganese	Nickel	HCl	HF	Total HAPs	Single Worst HAP	HAP
Plant 1																								
Wax Pattern Assembly Operation (P1-WPA)	--	--	0.000	--	--	0.17	--	--	--	--	0.004	0.85	0.13	--	--	--	--	--	--	--	--	1.15	0.85	Xylene
Dip Flour Manufacturing Operation (P1-DMO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
22 Sanding Towers (P1-ST)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Aluminum Oxide Barrel Sander (P1-AOBS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Dewax Furnace (P1-DBO-Big Bertha) - Process and Combustion Emissions	--	--	5.19E-05	--	2.96E-05	--	1.85E-03	4.44E-02	--	--	8.40E-05	--	--	2.72E-05	3.46E-05	2.07E-06	1.23E-05	9.38E-06	5.19E-05	--	--	0.05	0.04	Hexane
Shell Latex Surface Coating Booth (P1-SLC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
6 Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.75	0.06	--	--	0.19	--	--	1.00	0.75	Chromium
Hot Topping Process (P1-HT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.81	3.81	3.81	HF
Mold Wrap Operation (P1-MW)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P1-SAB)	--	--	--	--	--	--	--	--	3.60E-04	--	--	--	--	--	--	--	--	--	--	--	--	3.60E-04	3.60E-04	Methanol
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.40	--	1.40	1.40	HCl
Post-Cast Operations (P1-PCO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.40	0.03	--	--	0.10	--	--	0.54	0.40	Chromium
Finishing Operations (P1-FO) (Carter Day)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.18	0.03	--	--	0.05	--	--	0.26	0.18	Chromium
Finishing Operations (P1-FO) (West Metals)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.01	--	--	0.02	--	--	0.11	0.08	Chromium
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
P1-Superior Boiler #3	--	--	1.21E-04	--	6.90E-05	--	4.32E-03	1.04E-01	--	--	1.96E-04	--	--	6.33E-05	8.06E-05	4.83E-06	2.88E-05	2.19E-05	1.21E-04	--	--	0.11	0.10	Hexane
Insignificant Activities																						0	0	N/A
Insignificant Natural Gas Combustion (small boilers, hot water heater, space heaters, casting ovens)	--	--	4.66E-04	--	2.66E-04	--	1.67E-02	4.00E-01	--	--	7.55E-04	--	--	2.44E-04	3.11E-04	2.56E-05	1.11E-04	8.44E-05	4.66E-04	--	--	0.42	0.40	Hexane
2 Standby Diesel Generators	9.26E-04	1.12E-04	1.13E-03	4.72E-05	--	--	1.42E-03	--	--	2.03E-04	4.94E-04	3.44E-04	--	--	--	--	--	--	--	--	--	4.68E-03	1.42E-03	Formaldehyde
KOH Tanks	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Grinding and Finishing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.28E-03	7.19E-04	--	--	2.27E-03	--	--	0.01	0.01	Chromium
Water Blast	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Welding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.19E-02	1.55E-01	--	3.09E-03	3.55E-02	--	--	0.28	0.15	Cobalt
Cooling Towers	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Plant 1 Total	***9.26E-04***	***1.12E-04***	***1.85E-03***	***4.72E-05***	***3.65E-04***	***0.17***	***2.42E-02***	***0.55***	***3.60E-04***	***2.03E-04***	***5.90E-03***	***0.85***	***0.13***	***3.35E-04***	***1.50***	***0.28***	***1.52E-04***	***3.21E-03***	***0.41***	***1.40***	***3.81***	***9.13***	***3.81***	***HF***
Plant 2																								
Wax Pattern Assembly Operation (P2-WPA)	--	--	0.000	--	--	0.25	--	--	--	--	0.007	1.28	0.20	--	--	--	--	--	--	--	--	1.73	1.28	Xylene
Dip Slurry Preparation Process (P2-DSP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - High Volume Sanding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - Low Volume Sanding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Dewax Burnout Furnace (P2-DBF) - Process and Combustion Emissions	--	--	1.15E-04	--	6.57E-05	--	4.11E-03	9.86E-02	--	--	1.86E-04	--	--	6.02E-05	7.67E-05	4.60E-06	2.74E-05	2.08E-05	1.15E-04	--	--	0.10	0.10	Hexane
Sticky Latex Coating Booth (P2-SLC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.14	0.10	--	--	0.29	--	--	1.53	1.14	Chromium
Hot Top Operation (P2-HT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.81	3.81	3.81	HF
Mold Wrap Operation (P2-MW)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P2-SAB)	--	--	--	--	--	--	--	--	5.40E-04	--	--	--	--	--	--	--	--	--	--	--	--	5.40E-04	5.40E-04	Methanol
Pneumatic Shell Removal (P2-KO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Manual Machining & Grinding (P2-MMG)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.42	0.03	--	--	0.12	--	--	0.57	0.42	Chromium
Finishing Department (P2-FD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.42	0.03	--	--	0.12	--	--	0.57	0.42	Chromium
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Boilers (P2-B1 - P2-B3)	--	--	4.33E-04	--	2.47E-04	--	1.55E-02	3.71E-01	--	--	7.01E-04	--	--	2.27E-04	2.89E-04	1.73E-05	1.03E-04	7.83E-05	4.33E-04	--	--	0.39	0.37	Hexane
Insignificant Activities																								
Insignificant Natural Gas Combustion (preheat ovens, post-casting ovens)	--	--	6.09E-04	--	3.48E-04	--	2.17E-02	5.22E-01	--	--	9.86E-04	--	--	3.19E-04	4.06E-04	4.63E-05	1.45E-04	1.10E-04	6.09E-04	--	--	0.55	0.52	Hexane
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	5.91E-05	1.85E-05	1.82E-03	--	--	--	1.85E-04	--	--	4.98E-04	6.59E-04	4.53E-04	--	--	--	--	--	--	--	--	--	3.69E-03	1.82E-03	Benzene
KOH Salt Bath (P2-KOH)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Autoclave Operation (P2-AC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Water Blasting Operation (P2-IWBO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Cooling Tower (P2-CT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Grinding and Finishing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.09E-02	1.08E-03	--	--	3.40E-03	--	--	1.54E-02	1.09E-02	Chromium
Plant 2 Total	***5.91E-05***	***1.85E-05***	***3.11E-03***	***0***	***6.61E-04***	***0.25***	***0.04***	***0.99***	***5.40E-04***	***4.98E-04***	***9.09E-03***	***1.28***	***0.20***	***6.06E-04***	***1.99***	***0.17***	***2.75E-04***	***2.09E-04***	***0.53***	***0***	***3.81***	***9.26***	***3.81***	***HF***
Plants 1 and 2 Total	**9.85E-04**	**1.30E-04**	**4.96E-03**	**4.72E-05**	**1.03E-03**	**0.42**	**0.07**	**1.54**	**9.00E-04**	**7.00E-04**	**1.50E-02**	**2.13**	**0.33**	**9.40E-04**	**3.49**	**0.45**	**4.27E-04**	**3.42E-03**	**0.94**	**1.40**	**7.61**	**18.40**	**7.61**	**HF**

Appendix A: Emissions Calculations
HAP Summary: Plants 1 and 2 Limited PTE

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Potential to Emit After Limits

	Limited PTE (ton/yr)																							
Process/Unit	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Dichlorobenzene	Ethyl Benzene	Formaldehyde	Hexane	Methanol	PAH HAPs	Toluene	Xylene	o-Xylene	Cadmium	Chromium	Cobalt	Lead	Manganese	Nickel	HCl	HF	Total HAPs	Single Worst HAP	HAP
Plant 1																								
Wax Pattern Assembly Operation (P1-WPA)	--	--	0.000	--	--	0.17	--	--	--	--	0.004	0.85	0.13	--	--	--	--	--	--	--	--	1.15	0.85	Xylene
Dip Flour Manufacturing Operation (P1-DMO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
22 Sanding Towers (P1-ST)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Aluminum Oxide Barrel Sander (P1-AOBS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Dewax Furnace (P1-DBO-Big Bertha) - Process Emissions*	--	--	*	--	*	--	*	*	--	--	*	--	--	*	*	*	*	*	*	--	--	*	*	N/A
Shell Latex Surface Coating Booth (P1-SLC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
6 Electric Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.75	0.06	--	--	0.19	--	--	1.00	0.75	Chromium
Hot Topping Processes (P1-HT and P2-HT)**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.61	7.61	7.61	HF
Mold Wrap Operation (P1-MW)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P1-SAB)	--	--	--	--	--	--	--	--	3.60E-04	--	--	--	--	--	--	--	--	--	--	--	--	3.60E-04	3.60E-04	Methanol
Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Acid Etching Process (P1-AEP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.40	--	1.40	1.40	HCl
Post-Cast Operations (P1-PCO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.41	0.12	--	--	0.36	--	--	1.88	1.41	Chromium
Finishing Operations (P1-FO) (Carter Day)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.64	0.09	--	--	0.18	--	--	0.92	0.64	Chromium
Finishing Operations (P1-FO) (West Metals)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.28	0.02	--	--	0.09	--	--	0.40	0.28	Chromium
Fluorescent Penetrant Inspection Operation (P1-FPI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
P1-Superior Boiler #3*	--	--	*	--	*	--	*	*	--	--	*	--	--	*	*	*	*	*	*	--	--	*	*	N/A
*Plant 1 Limited Natural Gas Emissions	--	--	6.13E-04	--	3.50E-04	--	0.02	0.53	--	--	9.93E-04	--	--	3.21E-04	4.09E-04	2.45E-05	1.46E-04	1.11E-04	6.13E-04	--	--	0.55	0.53	Hexane
Insignificant Activities																								
Insignificant Natural Gas Combustion* (small boilers, hot water heater, space heaters, casting ovens)	--	--	*	--	*	--	*	*	--	--	*	--	--	*	*	*	*	*	*	--	--	*	*	N/A
2 Standby Diesel Generators	9.26E-04	1.12E-04	1.13E-03	4.72E-05	--	--	1.42E-03	--	--	2.03E-04	4.94E-04	3.44E-04	--	--	--	--	--	--	--	--	--	4.68E-03	1.42E-03	Formaldehyde
KOH Tanks	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Grinding and Finishing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.28E-03	7.19E-04	--	--	2.27E-03	--	--	0.01	0.01	Chromium
Water Blast	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Welding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.15	--	3.09E-03	3.55E-02	--	--	0.28	0.15	Cobalt
Cooling Towers	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Plant 1 Total	***9.26E-04***	***1.12E-04***	***1.83E-03***	***4.72E-05***	***3.50E-04***	***0.17***	***2.33E-02***	***0.53***	***3.60E-04***	***2.03E-04***	***5.86E-03***	***0.85***	***0.13***	***3.21E-04***	***3.17***	***0.45***	***1.46E-04***	***3.20E-03***	***0.86***	***1.40***	***7.61***	***15.20***	***7.61***	***HF***
Plant 2																								
Wax Pattern Assembly Operation (P2-WPA)	--	--	0.000	--	--	0.25	--	--	--	--	0.007	1.28	0.20	--	--	--	--	--	--	--	--	1.73	1.28	Xylene
Dip Slurry Preparation Process (P2-DSP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - High Volume Sanding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Shell Formation Process (P2-SFP) - Low Volume Sanding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Dewax Burnout Furnace (P2-DBF) - Process Emissions*	--	--	*	--	*	--	*	*	--	--	*	--	--	*	*	*	*	*	*	--	--	*	*	N/A
Sticky Latex Coating Booth (P2-SLC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
4 Electric Induction Ovens (P2-EIO1 - P2-EIO4)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.14	0.10	--	--	0.29	--	--	1.53	1.14	Chromium
Hot Top Operation (P2-HT)**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**	**	**	HF
Mold Wrap Operation (P2-MW)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Spray Application Insulation Booth (P2-SAB)	--	--	--	--	--	--	--	--	5.40E-04	--	--	--	--	--	--	--	--	--	--	--	--	5.40E-04	5.40E-04	Methanol
Pneumatic Shell Removal (P2-KO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Manual Machining & Grinding (P2-MMG)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.26	0.11	--	--	0.35	--	--	1.71	1.26	Chromium
Finishing Department (P2-FD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.52	0.21	--	--	0.70	--	--	3.43	2.52	Chromium
Fluorescent Penetrant Inspection Operation (P2-FPI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Boilers (P2-B1 - P2-B3)	--	--	*	--	*	--	*	*	--	--	*	--	--	*	*	*	*	*	*	--	--	*	*	N/A
*Plant 2 Limited Natural Gas Emissions	--	--	1.11E-03	--	6.37E-04	--	3.98E-02	0.96	--	--	1.80E-03	--	--	5.84E-04	7.43E-04	4.46E-05	2.65E-04	2.02E-04	1.11E-03	--	--	1.00	0.96	Hexane
Insignificant Activities																								
Insignificant Natural Gas Combustion (preheat ovens, post-casting ovens)	--	--	*	--	*	--	*	*	--	--	*	--	--	*	*	*	*	*	*	--	--	*	*	N/A
2 Emergency Diesel Generators (P2-EG1 & P2-EG2)	5.91E-05	1.85E-05	1.82E-03	--	--	--	1.85E-04	--	--	4.98E-04	6.59E-04	4.53E-04	--	--	--	--	--	--	--	--	--	3.69E-03	1.82E-03	Benzene
KOH Salt Bath (P2-KOH)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Autoclave Operation (P2-AC)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Water Blasting Operation (P2-IWBO)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Cooling Tower (P2-CT)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	N/A
Grinding and Finishing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.09E-02	1.08E-03	--	--	3.40E-03	--	--	1.54E-02	1.09E-02	Chromium
Plant 2 Total	***5.91E-05***	***1.85E-05***	***3.07E-03***	***0***	***6.37E-04***	***0.25***	***4.00E-02***	***0.96***	***5.40E-04***	***4.98E-04***	***9.03E-03***	***1.28***	***0.20***	***5.84E-04***	***4.93***	***0.41***	***2.65E-04***	***2.02E-04***	***1.34***	***0***	***0.00***	***9.41***	***4.93***	***Chromium***
Plants 1 and 2 Total	**9.85E-04**	**1.30E-04**	**4.89E-03**	**4.72E-05**	**9.87E-04**	**0.42**	**6.33E-02**	**1.48**	**9.00E-04**	**7.00E-04**	**1.49E-02**	**2.13**	**0.33**	**9.05E-04**	**8.10**	**0.86**	**4.11E-04**	**3.40E-03**	**2.20**	**1.40**	**7.61**	**24.62**	**8.10**	**Chromium**

*All natural gas combustion emissions are included under either a limit for Plant 1 or a limit for Plant 2.
**The limited Plant 2 Hot Top Operation (P2-HT) emissions are included with the limited Plant 1 Hot Top Operation (P1-HT) emissions.
Note: Shaded cells indicate limited emissions.

Appendix A: Emissions Calculations
Plant 1: Wax Pattern Assembly Operation (P1-WPA)

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Wax Pattern Assembly Operation

Material	Density (lb/gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Maximum Usage (gal/hr)	lb VOC/ gallon of coating less water	lb VOC/ gallon of coating	Potential VOC (lb/hr)	Potential VOC (lb/day)	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Xylene	7.25	100.00%	0.0%	100.0%	0.0%	0.00%	0.028	7.25	7.25	0.20	4.79	0.88	0.00	N/A	100%
Wax Blue Seal	7.77	67.00%	0.0%	67.0%	0.0%	0.00%	0.012	5.21	5.21	0.06	1.47	0.27	0.00	N/A	100%
Mineral Spirits	6.32	100.00%	0.0%	100.0%	0.0%	0.00%	0.018	6.32	6.32	0.11	2.74	0.50	0.00	N/A	100%
Silquest A 1100	7.92	99.8%	0.0%	99.8%	0.0%	0.00%	0.022	7.90	7.90	0.17	4.10	0.75	0.00	N/A	100%
Nature Sol	7.19	91.95%	0.0%	92.0%	0.0%	0.00%	0.024	6.61	6.61	0.16	3.78	0.69	0.00	N/A	100%
Safety Kleen Solvent	6.70	100.00%	0.0%	100.0%	0.0%	0.00%	0.051	6.70	6.70	0.34	8.22	1.50	0.00	N/A	100%
Shellac	7.35	68.16%	0.0%	68.2%	0.0%	0.00%	0.008	5.01	5.01	0.04	0.92	0.17	0.00	N/A	100%
Total Potential Emissions							**0.16**			**1.08**	**26.02**	**4.75**			

Methodology:
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * * Maximum (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Maximum (gal/hr) * (24hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Maximum (gal/hr) * (8760 hr/yr) * (1 ton/2000lbs)
Particulate Potential Tons per Year = (gal/hr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) * (1 ton/2000lbs)
Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)

Material	Density (lb/gal)	Maximum (gal/hr)	Weight % Xylene	Weight % Ethyl Benzene	Weight % Toluene	Weight % O-XYLENE	Weight % Benzene	Potential Xylene (ton/yr)	Potential Ethyl Benzene (ton/yr)	Potential Toluene (ton/yr)	Potential O-XYLENE (ton/yr)	Potential Benzene (ton/yr)	Total HAPs (ton/yr)
Xylene	7.25	0.028	66.0%	19.0%	0.5%	15.0%	0.01%	0.58	0.17	0.004	0.13	0.0001	0.75
Wax Blue Seal	7.77	0.01	67.0%	0.0%	0.0%	0.0%	0.0%	0.27	0.00	0.00	0.00	0.00	0.27
Mineral Spirits	6.32	0.02	1.0%	0.0%	0.0%	0.0%	0.0%	0.01	0.00	0.00	0.00	0.00	0.01
Silquest A 1100	7.92	0.02	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
Nature Sol	7.19	0.02	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
Safety Kleen Solvent	6.70	0.05	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
Shellac	7.35	0.008	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.000	0.000	0.000	0.00
Total Potential Emissions								**0.85**	**0.17**	**0.004**	**0.13**	**0.0001**	**1.02**

Methodology:
MIBK = Methyl Isobutyl Ketone
Potential HAPs Tons per Year = Density (lb/gal) * Gal of Material (gal/hr) * Weight % HAP * (8760 hr/yr) * (1 ton/2000lbs)

Appendix A: Emissions Calculations
Plant 1: Ceramic Mold Operation
Dip Manufacturing Operation (P1-DMO), Sanding Towers (P1-ST), Barrel Sander (P1-AOBS), Dewax Furnace (P1-DBO-Big Bertha)

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Dip Manufacturing Operation (P1-DMO)

Process	Bag House Control Device Air Flow (cfm)	Maximum Silica Flour Material Processed (ton/hr)	Maximum Silica Flour Material Processed (lb/hr)	Zircon Dust Generation Rate (%)	Uncontrolled Zircon Dust (PM) (ton/yr)	Dust Collection Efficiency (%)	Bag House Control Efficiency (%)	Controlled PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions**		Proposed Limit Multiplier above Controlled Emissions
								(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Dip Manufacturing	7,000	0.75	1,500	0.10%	6.57	100.0%	99.9%	0.0015	0.0066	0.45	1.97	300

Methodology:
Uncontrolled Emissions (ton/yr) = Max Ziron Usage (ton/hr) * Zircon Dust Generation Rate % * (8760 hr/yr)
Controlled Emissions (lb/hr) = Max Dust Generation Rate (lb/hr) * Zircon Dust Generation Rate (%) * (1 - control efficiency)
Controlled Emissions (ton/yr) = Controlled Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
**Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited Emissions/Controlled Potential Emissions

Twenty-two (22) Sanding Towers (P1-ST) - Shell Sand Baghouse

Controlled PM Emissions (lb/hr) Based on Testing	Controlled Emission Rate (lb PM/1000 lb Shell)	Maximum Capacity Sand (ton/hr)	Control Efficiency (%)	Controlled PM Emissions		Uncontrolled PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
				(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
0.185	0.4101	0.66	99.9%	0.54	2.37	541.33	2371.03	0.93	4.07	1.72

Methodology:
Controlled PM Emissions based on testing performed March 2013.
Emission Rate (lb PM/1000 lb Shell) based on testing.
Controlled PM Emissions (lb/hr) = Maximum Capacity Sand (ton/hr) * Controlled Emission Rate (lb PM/1000 lb Shell) * (2000 lb/ton) / 1000
Uncontrolled PM Emissions (lb/hr) = Controlled PM Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited Emissions/Controlled Potential Emissions

One (1) Aluminum Oxide Barrel Sander (P1-AOBS)

Strands Consumption Rate (lb/yr)	Silica Content (%)	VOC Content (%)	Particulate (ton/yr)	VOC (ton/yr)
1,200.0	0.98%	0.00%	0.01	0.00

Methodology:
PM emissions (ton/year) = strands consumption rate (lb/yr) * silica content (%) * 1/2000 (lbs/ton)
VOC emissions (ton/year) = strands consumption rate (lb/yr) * VOC content (%) * 1/2000 (lb/ton)

One (1) Dewax Furnace (P1-DBO-Big Bertha)

Maximum Capacity (ton of cores/hr)	PM Emission Factor (lb PM/ton of core)*	Uncontrolled PM Emissions (ton/yr)	VOC Emission Factor (lb VOC/ton of core)*	Uncontrolled VOC Emissions (ton/yr)
0.32	2.54	3.56	0.29	0.40

Methodology:
The following calculations for the wax burn out oven were submitted by the source:
*Although an AP-42 emission factor is not available, burning the wax and polystyrene core components from the ceramic shells could be compared to burning a heavy petroleum residual oil, such as #5 residual oil. Wax is a residual petroleum product.

An estimated emission factor for removing the core materials could be derived by converting the emission factor for #5 residual oil from a pounds PM/VOC per 1,000 gallons basis to a pounds PM/VOC per ton basis. The following calculation demonstrates this:

(10 lbs PM/1000 gallons oil) * (1 gallon oil/7.88 lbs oil) * (2000 lbs/ton) = 2.54 lbs PM/ton of cores

(1.13 lbs VOC/1,000 gallons oil) * (1 gallon oil/7.88 lbs oil) * (2,000 lbs/ton) = 0.29 lbs VOC/ton of cores

Potential Uncontrolled Emissions (ton/yr) = Maximum Capacity (ton of cores/hr) * EF (lb /ton of core) * (8,760 hr/yr) * (1 ton/2000 lb)

Appendix A: Emissions Calculations
Plant 1: Shell Latex Surface Coating Booth (P1-SLC) and Spray Application Insulation Booth (P1-SAB)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Shell Spraybooth (P1-SLC)

Material	Density (lb/gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	lb VOC/ gallon of coating less water	lb VOC/ gallon of coating	Potential VOC (lb/hr)	Potential VOC (lb/day)	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Spray Latex (Rohagit SD 9523)	8.5	64.50%	63.5%	1.0%	68.1%	33.00%	0.00063	42.2	0.27	0.09	0.0023	0.05	0.010	0.02	0.26	95%
							234.19	gal/yr								
							2,000.00	lbs/yr								

Spray Application Insulation Booth (P1-SAB)

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Weight % Methanol (of the 3% organics)	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	lb VOC/ gallon of coating less water	lb VOC/ gallon of coating	Potential VOC (lb/hr)	Potential VOC (lb/day)	VOC Potential (ton/yr)	Methanol Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Spray Insulation Binder	16.7	32.00%	29.0%	3.0%	0.6%	47.0%	47.00%	0.00063	43.1	0.95	0.50	0.0137	0.33	0.06	3.60E-04	0.07	1.07	95%
								239.5	gal/yr									
								4,000	lbs/yr									

Methodology:
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lb/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) * (1 ton/2000lbs)
Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)

Notes:
The Spray Latex does not contain HAPs.
The Spray Insulation Binder contains 3% latex. As a conservative assumption, all of the latex is assumed to be VOC. The latex contains 0.6% methanol.

Appendix A: Emissions Calculations
Plant 1: Induction Ovens (P1-EIO2, 5, 6, 8, 9, 10) - Process Emissions

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Six (6) Electric Induction Ovens (SCC 30400303)

Maximum Capacity (tons of steel/hr)	PM Emission Factor (lb PM/ton of steel)*	Unlimited PM Emissions (ton/yr)	Unlimited Nickel Emissions (ton/yr)	Unlimited Chromium Emissions (ton/yr)	Unlimited Cobalt Emissions (ton/yr)	Total Metal HAP Emissions (ton/yr)
0.59	0.9	2.33	0.19	0.75	0.06	1.00

Alloy Composition

HAP to PM Ratio (lb HAP per lb PM Emissions)		
Ni (lb Ni per lb PM)	Cr (lb Cr per lb PM)	Co (lb Co per lb PM)
0.0820	0.3210	0.0270

Methodology:
*The PM emission factor is based on SCC# 3-04-003-03 for grey iron foundry induction furnaces, AP-42, Chapter 12.10, Table 12.1(
HAP mass fractions were determined based on stack testing for PM and HAP metals conducted in March 2013 from the Post-Cast
dust collector.
Stack testing results for PM and HAP metals were used to develop the ratio of HAP lbs/hr to PM lbs/hr based on

Unlimited PM Emissions (tons/yr) = Maximum Capacity (tons of steel/hr) * EF (lb/ton of steel) * 8,760 (hrs/yr) * 1/2,000 (ton/lb)
Unlimited Metal HAPs Emissions (ton/yr) = Unlimited PM Emissions (ton/yr) * Metal HAP Ratio (tons HAP per ton of PM)

Appendix A: Emissions Calculations
Plant 1: Hot Topping (P1-HT) and Mold Wrapping (P1-MW)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Hot Topping (P1-HT)	Ferrux Usage (lb/yr)	Concentration of F_6Na_2Si in Ferrux (%)	Hydrogen Fluoride Emission Factor (lb HF/ lb F_6Na_2Si)	HF Emissions (ton/yr)
	225,000	5.30%	0.03383	3.81

Methodology:
Emissions factor for HF generated from F_6Na_2Si based on material balance and assumes 100% conversion.

$F_6Na_2Si + H_2O = 6HF$ + other non HAP products

Emission Factor (lb HF/lb Ferrux) = 6*(20.0063 lb HF/lbmol)/(188.05594 lb F6Na2Si/lbmol) * 5.3 lb F6Na2Si/100 lb Ferrux = 0.03383
HF Emissions (ton/yr) = Ferrux Usage (lb/yr) x HF Emission Factor (lb/lb) x 1/2,000 (ton/lb)

Mold Wrapping (P1-MW)	Kaowool Usage (lb/yr)	Percent released as particulate (%)	PM Emissions (ton/yr)
	500,000	0.100%	0.25

Methodology:
Emissions (ton/yr) = Kaowool Usage (lb/yr) * Percent released as particulate * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM

Appendix A: Emissions Calculations
Plant 1: Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Pneumatic Shell Removal (P1-KO-01 and P1-KO-02)

Controlled PM Emissions (lb/hr) Based on Testing	Throughput During Testing (lb/hr)	Controlled Emission Rate (lb PM/1000 lb Material Processed)	Maximum Capacity Sand (ton/hr)	Control Efficiency (%)	Controlled PM Emissions		Uncontrolled PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
					(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
0.260	2160.000	0.1204	1.18	99.0%	0.28	1.24	28.41	124.42	1.30	5.69	4.58

Methodology:
Controlled PM Emissions based on testing performed March 2013.
Controlled Emission Rate (lb PM/1000 lb Material Processed) = Controlled PM Emissions (lb/hr) from Testing * 1000 / Throughput During Testing (lb/hr)
Controlled PM Emissions (lb/hr) = Maximum Capacity Sand (ton/hr) * Controlled Emission Rate (lb PM/1000 lb Material Processed) * (2000 lb/ton) / 1000
Uncontrolled PM Emissions (lb/hr) = Controlled PM Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.

Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited Emissions/Controlled Potential Emissions

Appendix A: Emissions Calculations
Plant 1: Acid Etching Process (P1-AEP)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

***Acid Etch**	Vapor Press. (psia)	Tank Area (ft^2)	Gas-Mass Transfer Coefficient for HCl (ft/sec)	Temperature (^oR)	HCl Emissions (tons/yr)
Tank 1	0.042	6.25	0.00346	560	0.0869
Tank 2	0.042	6.25	0.00346	560	0.0869
Tank 3	0.588	6.25	0.00346	560	1.2172
Tank 4	0.003	4.17	0.00346	530	0.0044
Tank 5	0.003	4.00	0.00346	530	0.0042
				Total HCl Emissions =	**1.40**

Methodology:

Gas Constant = 10.73 psia ft^3/^oR lb-mole
Molecular weight of HCl = 36.461 lb/lb-mole

HCl emissions (tons/yr) = M (lb/lbmole) * A (ft^2) * P (psia) * K (ft/sec) * 3600 (sec/hr) * 8760 (hrs/yr) / R (psia ft^3/^oR lbmole) * T1 (^oR) * 2000 (lbs/ton)

Where: M = molecular weight of compound; K = gas-mass transfer coefficient; R = gas constant
A = area of tank; P = vapor pressure of compound in solution; T1 = absolute temperature of solution

Appendix A: Emissions Calculations
Plant 1: Post-Cast Operations (P1-PCO) and Finishing Operations (P1-FO)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Post-Cast and Finishing Operations - Particulate Emissions

Process	Control Device	Controlled PM Emissions (lb/hr) Based on Testing	Throughput During Testing (lb/hr)	Controlled Emission Rate (lb PM/1000 lb Material Processed)	Maximum Capacity (ton/hr)	Control Efficiency (%)	Controlled Potential PM Emissions		Uncontrolled Potential PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
							(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Post-Cast	Post-Cast Dust Collector	0.100	409.900	0.2440	0.59	99.0%	0.29	1.26	28.79	126.09	0.50	2.19	1.74
Finishing	Carter Day Dust Collector	0.404	206.790	1.9537	0.295	95.0%	1.15	5.05	23.05	100.97	2.02	8.85	1.75
Finishing	West Metals Dust Collector	0.087	217.850	0.3994	0.295	99.0%	0.24	1.03	23.56	103.20	0.44	1.93	1.87

Post-Cast and Finishing Operations - HAP Emissions

Process	Controlled Emissions (lb/hr) Based on Testing			Controlled Emission Rate (lb HAP/1000 lb Material Processed)			Controlled Potential Emissions						Uncontrolled Potential Emissions (ton/yr)			Proposed Limited HAP Emissions*					
							Cr		Ni		Co					Cr		Ni		Co	
	Cr	Ni	Co	Cr	Ni	Co	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	Cr	Ni	Co	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Post-Cast	0.032	0.008	0.003	0.0783	0.0200	0.0066	0.09	0.40	0.02	0.10	0.01	0.03	40.47	10.34	3.40	0.321	1.41	0.082	0.36	0.027	0.12
Finishing (Carter Day)	0.015	0.004	0.002	0.0706	0.0203	0.0102	0.04	0.18	0.01	0.05	0.01	0.03	3.65	1.05	0.52	0.146	0.64	0.042	0.18	0.021	0.09
Finishing (West Metals)	0.007	0.002	0.001	0.0298	0.0096	0.0023	0.02	0.08	0.01	0.02	0.001	0.01	7.71	2.49	0.59	0.065	0.28	0.021	0.09	0.005	0.02

Methodology:
Controlled PM, Cr, Ni, and Co Emissions based on testing performed March 2013.
Controlled Emission Rate (lb pollutant/1000 lb Material Processed) = Controlled Pollutant Emissions (lb/hr) from Testing * 1000 / Throughput During Testing (lb/hr)
Controlled Emissions (lb/hr) = Maximum Capacity (ton/hr) * Controlled Emission Rate (lb Pollutant/1000 lb Material Processed) * (2000 lb/ton) / 1000
Uncontrolled Emissions (lb/hr) = Controlled Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions =

Appendix A: Emissions Calculations
Plant 1: Natural Gas Combustion (<100 MMBtu/hr)

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

			Criteria Pollutants							GHGs				
			PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO	CO2	N2O***	CH4	GHG Mass-Based	CO2e
	Emission Factor in lb/MMCF		1.9	7.6	7.6	0.6	100.0	5.5	84.0	120000	2.2	2.3		
Emission Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential Emissions (tons/yr)											
Dewax Furnace (P1-DBO-Big Bertha)	4.2	36.07	0.034	0.137	0.137	0.011	1.804	0.099	1.515	2164.24	0.04	0.04	2164.32	2177.10
P1-DBOAB-Big Bertha Afterburner	1.55	13.31	0.013	0.051	0.051	0.004	0.666	0.037	0.559	798.71	0.01	0.02	798.74	803.45
Boiler (P1-Superior Boiler #3)	13.4	115.08	0.109	0.437	0.437	0.035	5.754	0.316	4.833	6904.94	0.13	0.13	6905.20	6945.97
Insignificant Activities														
Hot Water Heater	0.65	5.58	0.005	0.021	0.021	0.002	0.279	0.015	0.234	334.94	0.01	0.01	334.95	336.93
Boiler (P1-BOILER-EAST)	4.2	36.07	0.034	0.137	0.137	0.011	1.804	0.099	1.515	2164.24	0.04	0.04	2164.32	2177.10
Boiler (P1-BOILER-HUMIDITY)	2.3	19.75	0.019	0.075	0.075	0.006	0.988	0.054	0.830	1185.18	0.02	0.02	1185.22	1192.22
Boiler (P1-BOILER-DEGREASE)	1.4	12.02	0.011	0.046	0.046	0.004	0.601	0.033	0.505	721.41	0.01	0.01	721.44	725.70
Space Heaters	0.1	0.86	0.001	0.003	0.003	0.000	0.043	0.002	0.036	51.53	0.00	0.00	51.53	51.84
Casting Oven (P1-PREHEAT-02)	6.8	58.40	0.055	0.222	0.222	0.018	2.920	0.161	2.453	3504.00	0.06	0.07	3504.13	3524.82
Casting Oven (P1-JR PREHEAT-02)	0.75	6.44	0.006	0.024	0.024	0.002	0.322	0.018	0.271	386.47	0.01	0.01	386.49	388.77
Casting Oven (P1-PREHEAT-08)	6.8	58.40	0.055	0.222	0.222	0.018	2.920	0.161	2.453	3504.00	0.06	0.07	3504.13	3524.82
Casting Oven (P1-PREHEAT-05)	6.8	58.40	0.055	0.222	0.222	0.018	2.920	0.161	2.453	3504.00	0.06	0.07	3504.13	3524.82
Casting Oven (P1-PREHEAT-06)	6.8	58.40	0.055	0.222	0.222	0.018	2.920	0.161	2.453	3504.00	0.06	0.07	3504.13	3524.82
Casting Oven (P1-JR PREHEAT-06)	0.75	6.44	0.006	0.024	0.024	0.002	0.322	0.018	0.271	386.47	0.01	0.01	386.49	388.77
Casting Oven (P1-PREHEAT-09)	6.8	58.40	0.055	0.222	0.222	0.018	2.920	0.161	2.453	3504.00	0.06	0.07	3504.13	3524.82
Casting Oven (P1-PREHEAT-10)	6.8	58.40	0.055	0.222	0.222	0.018	2.920	0.161	2.453	3504.00	0.06	0.07	3504.13	3524.82
Casting Oven (P1-JR PREHEAT-10)	0.75	6.44	0.006	0.024	0.024	0.002	0.322	0.018	0.271	386.47	0.01	0.01	386.49	388.77
TOTAL INSIGNIFICANT ACTIVITIES			0.42	1.69	1.69	0.13	22.20	1.22	18.65	26640.71	0.49	0.51	26641.70	26799.02
Plant 1 Limited Natural Gas Usage		584	0.555	2.219	2.219	0.175	29.200	1.606	24.528	35040.00	0.64	0.67	35041.31	35248.23

Emission Factors are from AP-42, Tables 1.4-1 and 1.4-2.
*PM emission factor is filterable PM only. PM10 emission factor is filterable PM10 and condensable PM combined. PM2.5 emission factor is filterable PM2.5 and condensable PM combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
***Emission Factors for N2O: Uncontrolled = 2.2, Low NOx Burner = 0.64

			HAPs - Organics					HAPs - Metals					Total HAPs
			Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel	
	Emission Factor in lb/MMCF		2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	1.8880
Emission Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential Emissions (tons/yr)										
Dewax Furnace (P1-DBO-Big Bertha)	4.2	36.071	3.8E-05	2.2E-05	1.4E-03	3.2E-02	6.1E-05	9.0E-06	2.0E-05	2.5E-05	6.9E-06	3.8E-05	3.4E-02
P1-DBOAB-Big Bertha Afterburner	1.55	13.312	1.4E-05	8.0E-06	5.0E-04	1.2E-02	2.3E-05	3.3E-06	7.3E-06	9.3E-06	2.5E-06	1.4E-05	1.3E-02
Boiler (P1-Superior Boiler #3)	13.4	115.082	1.2E-04	6.9E-05	4.3E-03	1.0E-01	2.0E-04	2.9E-05	6.3E-05	8.1E-05	2.2E-05	1.2E-04	1.1E-01
Insignificant Activities													
Hot Water Heater	0.65	5.582	5.9E-06	3.3E-06	2.1E-04	5.0E-03	9.5E-06	1.4E-06	3.1E-06	3.9E-06	1.1E-06	5.9E-06	5.3E-03
Boiler (P1-BOILER-EAST)	4.2	36.071	3.8E-05	2.2E-05	1.4E-03	3.2E-02	6.1E-05	9.0E-06	2.0E-05	2.5E-05	6.9E-06	3.8E-05	3.4E-02
Boiler (P1-BOILER-HUMIDITY)	2.3	19.753	2.1E-05	1.2E-05	7.4E-04	1.8E-02	3.4E-05	4.9E-06	1.1E-05	1.4E-05	3.8E-06	2.1E-05	1.9E-02
Boiler (P1-BOILER-DEGREASE)	1.4	12.024	1.3E-05	7.2E-06	4.5E-04	1.1E-02	2.0E-05	3.0E-06	6.6E-06	8.4E-06	2.3E-06	1.3E-05	1.1E-02
Space Heaters	0.1	0.859	9.0E-07	5.2E-07	3.2E-05	7.7E-04	1.5E-06	2.1E-07	4.7E-07	6.0E-07	1.6E-07	9.0E-07	8.1E-04
Casting Oven (P1-PREHEAT-02)	6.8	58.400	6.1E-05	3.5E-05	2.2E-03	5.3E-02	9.9E-05	1.5E-05	3.2E-05	4.1E-05	1.1E-05	6.1E-05	5.5E-02
Casting Oven (P1-JR PREHEAT-02)	0.75	6.441	6.8E-06	3.9E-06	2.4E-04	5.8E-03	1.1E-05	1.6E-06	3.5E-06	4.5E-06	1.2E-06	6.8E-06	6.1E-03
Casting Oven (P1-PREHEAT-08)	6.8	58.400	6.1E-05	3.5E-05	2.2E-03	5.3E-02	9.9E-05	1.5E-05	3.2E-05	4.1E-05	1.1E-05	6.1E-05	5.5E-02
Casting Oven (P1-PREHEAT-05)	6.8	58.400	6.1E-05	3.5E-05	2.2E-03	5.3E-02	9.9E-05	1.5E-05	3.2E-05	4.1E-05	1.1E-05	6.1E-05	5.5E-02
Casting Oven (P1-PREHEAT-06)	6.8	58.400	6.1E-05	3.5E-05	2.2E-03	5.3E-02	9.9E-05	1.5E-05	3.2E-05	4.1E-05	1.1E-05	6.1E-05	5.5E-02
Casting Oven (P1-JR PREHEAT-06)	0.75	6.441	6.8E-06	3.9E-06	2.4E-04	5.8E-03	1.1E-05	1.6E-06	3.5E-06	4.5E-06	1.2E-06	6.8E-06	6.1E-03
Casting Oven (P1-PREHEAT-09)	6.8	58.400	6.1E-05	3.5E-05	2.2E-03	5.3E-02	9.9E-05	1.5E-05	3.2E-05	4.1E-05	1.1E-05	6.1E-05	5.5E-02
Casting Oven (P1-PREHEAT-10)	6.8	58.400	6.1E-05	3.5E-05	2.2E-03	5.3E-02	9.9E-05	1.5E-05	3.2E-05	4.1E-05	1.1E-05	6.1E-05	5.5E-02
Casting Oven (P1-JR PREHEAT-10)	0.75	6.441	6.8E-06	3.9E-06	2.4E-04	5.8E-03	1.1E-05	1.6E-06	3.5E-06	4.5E-06	1.2E-06	6.8E-06	6.1E-03
TOTAL INSIGNIFICANT ACTIVITIES			4.7E-04	2.7E-04	1.7E-02	4.0E-01	7.5E-04	1.1E-04	2.4E-04	3.1E-04	8.4E-05	4.7E-04	4.2E-01
Plant 1 Limited Natural Gas Usage		584	6.1E-04	3.5E-04	2.2E-02	5.3E-01	9.9E-04	1.5E-04	3.2E-04	4.1E-04	1.1E-04	6.1E-04	5.5E-01

Emission Factors are from AP-42, Tables 1.4-3 and 1.4-4.
The five highest organic and metal HAPs emission factors are provided above. The total HAPs is the sum of all HAPs listed in AP-42, Tables 1.4-3 and 1.4-4.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Heating Value of Natural Gas is assumed to be 1020 MMBtu/MMCF
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMCF/1,020 MMBtu
Potential Emission (tons/yr) = Throughput (MMCF/yr) * Emission Factor (lb/MMCF) * (1 ton/2,000 lb)
GHG Mass-Based (ton/yr) = CO2 (ton/yr) + N2O (ton/yr) + CH4 (ton/yr)

Appendix A: Emission Calculations
Plant 1: Standby Diesel Generators
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Output Horsepower Rating (hp)	690.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	345,000

Unit Description	HP
P1-GEN-AUXPWR-01	315
P1-GEN-AUXPWR-02	375

	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	0.38	0.38	0.38	0.35	5.35	0.43	1.15

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	1.13E-03	4.94E-04	3.44E-04	4.72E-05	1.42E-03	9.26E-04	1.12E-04	2.03E-04

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**4.68E-03**
Potential Emission of Highest Single HAP (tons/yr)	**1.42E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	198.38	7.99E-03	1.60E-03

Summed Potential Emissions in tons/yr	**198.38**
CO2e Total in tons/yr	**199.05**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) 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) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Plant 1: Potassium Hydroxide Storage Tanks and Water Blast

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Low Temp Chemical Shell Removal

Process	Grain Loading per Actual Cubic Foot of Inlet Air (gr/acfm)	Air Flow Rate (acfm)	Uncontrolled PM Emissions (ton/yr)
KOH Tanks	0.01	2800	1.05
Water Blast Vent Emissions	0.01	1700	0.64

Methodology
Uncontrolled Emissions (ton/yr) = Loading (grains/acfm) * Air Flow Rate (acfm) * 1 lb/7,000 grains * 60 min/hr * 8,760 hr/yr * 1 ton/2,000 lbs

Appendix A: Emissions Calculations
Plant 1: Grinding/Finishing Operations

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Grinding Booths

Maximum Capacity (tons of steel/hr)	PM Emission Factor (lb PM/ton of steel)*	PM10 Emission Factor (lb PM10/ton of steel)*	Uncontrolled PM Emissions (ton/yr)	Uncontrolled PM10 Emissions (ton/yr)	HAP to PM Ratio (lb HAP/lb PM)			PTE (ton/yr)		
					Ni	Cr	Co	Ni	Cr	Co
3.0	0.01	0.0045	0.13	0.06	0.0173	0.0554	0.0055	0.002	0.007	0.001

Methodology
*The particulate emission factors above are from FIRE (Factor Information Retrieval), SCC 30400360.
Potential (uncontrolled) = Maximum Capacity (tons of steel/hr) * EF (lb/ton of steel) * 8,760 (hrs/yr) * 1/2,000 (ton/lbs)
Assumes PM2.5 = PM10
HAP ratios based on testing for the Carter Day and West Metals Dust Collectors Finishing Operations.
PTE HAPs (ton/yr) = PTE PM (ton/yr) * HAP to PM Ratio

Proposed Plant 1 Finishing Booth

Maximum Capacity (tons of steel/hr)	PM Emission Factor (lb PM/ton of steel)*	PM10 Emission Factor (lb PM10/ton of steel)*	Uncontrolled PM Emissions (ton/yr)	Uncontrolled PM10 Emissions (ton/yr)	HAP to PM Ratio (lb HAP/lb PM)			PTE (ton/yr)		
					Ni	Cr	Co	Ni	Cr	Co
0.5	0.01	0.0045	0.02	0.01	0.0173	0.0554	0.0055	0.0004	0.001	0.0001

Methodology is the same as above.
The maximum anticipated capacity of the proposed grinding booth is estimated at 1,000 lb/hr.
The proposed grinding booth will be included in the 3.0 ton/hr overall maximum capacity for the Plant 1 insignificant grinding and finishing operations.

Appendix A: Emissions Calculations
Plant 1: Welding Emissions

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)
WELDING				PM/PM10/PM2.5	Mn	Ni	Co	Cr	PM/PM10/PM2.5	Mn	Ni	Co	Cr	
Tungsten Inert Gas (TIG)(Turbaloy 31 Wire)	9	7.84E-03		1.0	0.01	0.12	0.50	0.27	0.071	0.001	0.008	0.035	0.019	0.063
Tungsten Inert Gas (TIG)(Tungsten Electrode)	9	4.90E-04		1.0	0.00	0.00	0.00	0.00	0.004	0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS														
Potential Emissions lbs/hr									0.075	0.001	0.008	0.035	0.019	0.06
Potential Emissions lbs/day									1.80	0.02	0.19	0.85	0.45	1.51
Potential Emissions tons/year									**0.33**	**0.003**	**0.04**	**0.15**	**0.08**	**0.28**

Methodology:
*Emission Factors were provided by the source.
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

Appendix A: Emissions Calculations
Plant 1: Cooling Towers

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Process	Evapco Towers	Main Cooling Tower	Roof Cooling Tower #1	Roof Cooling Tower #2
Density of Water (lb/gal)	8.34	8.34	8.34	8.34
Recirculation Flow Rate (gal/min)	3,400	2,000	10,000	10,000
Cooing Tower Drift (% of recirculation rate)	0.005%	0.005%	0.005%	0.005%
Cooling Tower Drift (gal/day)	245	144	720	720
Cooling Tower Drift (lbs/day)	2,042	1,201	6,005	6,005
Cooling Tower Drift (million lbs/day)	0.0020	0.0012	0.0060	0.0060
Recirculating Water Conductivity (micro-mho	1,500	2,600	2,600	2,600
Conductivity to TDS Ratio	65%	65%	65%	65%
Total Dissolved Solids (mg/l)	975	1690	1690	1690
Cooling Tower Cycles of Concentration	2.00	2.00	2.00	2.00
PM Drift Emissions Rate (lbs/hr)	0.17	0.17	0.85	0.85
PM Drift Emissions Rate (tons/yr)	0.73	0.74	3.70	3.70
Percentage of PM-10 in PM emissions	82%	82%	82%	82%
PM-10 Drift Emissions Rate (lbs/hr)*	0.14	0.14	0.69	0.69
PM-10 Drift Emissions Rate (tons/yr)*	0.60	0.61	3.04	3.04

Total PM Emissions (tons/yr) =	**8.88**
Total PM-10 Emissions (tons/yr)* =	**7.28**

Methodology
The cooling tower calculations were provided by the source and have been verified by IDEM.
Cooling Tower Drift (gal/day) = Recirculation Flow Rate (gal/min) x Cooling Tower Drift (% of reciruclation rate) x 60 (min./hr) x 24 (hr/day)
Cooling Tower Drift (lbs/day) = Cooling Tower Drift (gal/day) x Density of Water (lb/gal)
Cooling Tower Drift (million lbs/day) = Cooling Tower Drift (lbs/day) x 10^6
Total Dissolved Solids (mg/l) = Recirculating Water Conductivity (micro-mho) x Conductivity to TDS Ratio (%)
PM Drift Emissions Rate (lbs/hr) = Cooling Tower Cycles of Concentration x Cooling Tower Drift (million lbs/day) x Total Dissolved Solids (mg/l) / 24 (hrs/day)
PM Drift Emissions Rate (tons/yr) = PM Drift Emissions Rate (lbs/hr) x 8,760 (hr/yr) x 1/2,000 (ton/lb)
PM-10 Drift Emissions Rate (lbs/hr) = PM Drift Emissions Rate (lbs/hr) x PM-10 in PM Emissions (%)
PM-10 Drift Emissions Rate (tons/yr) = PM-10 Drift Emissions Rate (lbs/hr) x 8,760 (hr/yr) x 1/2,000 (ton/lb)
*PM-2.5 = PM-10

Appendix A: Emissions Calculations
Plant 2: Wax Pattern Assembly Operation (P2-WPA)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Wax Pattern Assembly Operation (P2-WPA)

Material	Density (lb/gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Maximum Usage (gal/hr)	lb VOC/ gallon of coating less water	lb VOC/ gallon of coating	Potential VOC (lb/hr)	Potential VOC (lb/day)	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Xylene	7.25	100.00%	0.0%	100.0%	0.0%	0.00%	0.041	7.25	7.25	0.30	7.19	1.31	0.00	N/A	100%
Wax Blue Seal	7.77	67.00%	0.0%	67.0%	0.0%	0.00%	0.018	5.21	5.21	0.09	2.20	0.40	0.00	N/A	100%
Mineral Spirits	6.32	100.00%	0.0%	100.0%	0.0%	0.00%	0.027	6.32	6.32	0.17	4.11	0.75	0.00	N/A	100%
Silquest A 1100	7.92	99.8%	0.0%	99.8%	0.0%	0.00%	0.032	7.90	7.90	0.26	6.15	1.12	0.00	N/A	100%
Nature Sol	7.19	91.95%	0.0%	92.0%	0.0%	0.00%	0.036	6.61	6.61	0.24	5.67	1.03	0.00	N/A	100%
Safety Kleen Solvent	6.70	100.00%	0.0%	100.0%	0.0%	0.00%	0.077	6.70	6.70	0.51	12.33	2.25	0.00	N/A	100%
Shellac	7.35	68.16%	0.0%	68.2%	0.0%	0.00%	0.012	5.01	5.01	0.06	1.40	0.26	0.00	N/A	100%
Total Potential Emissions										**1.63**	**39.05**	**7.13**			

Methodology:
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * * Maximum (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Maximum (gal/hr) * (24hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Maximum (gal/hr) * (8760 hr/yr) * (1 ton/2000lbs)
Particulate Potential Tons per Year = (gal/hr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) * (1 ton/2000lbs)
Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)

Material	Density (lb/gal)	Maximum (gal/hr)	Weight % Xylene	Weight % Ethyl Benzene	Weight % Toluene	Weight % O-XYLENE	Weight % Benzene	Potential Xylene (ton/yr)	Potential Ethyl Benzene (ton/yr)	Potential Toluene (ton/yr)	Potential O-XYLENE (ton/yr)	Potential Benzene (ton/yr)	Total HAPs (ton/yr)
Xylene	7.25	0.041	66.0%	19.0%	0.5%	15.0%	0.01%	0.87	0.25	0.01	0.20	0.0001	1.12
Wax Blue Seal	7.77	0.02	67.0%	0.0%	0.0%	0.0%	0.0%	0.40	0.00	0.00	0.00	0.00	0.40
Mineral Spirits	6.32	0.03	1.0%	0.0%	0.0%	0.0%	0.0%	0.01	0.00	0.00	0.00	0.00	0.01
Silquest A 1100	7.92	0.03	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
Nature Sol	7.19	0.04	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
Safety Kleen Solvent	6.70	0.08	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
Shellac	7.35	0.012	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.000	0.000	0.000	0.00
Total Potential Emissions								**1.28**	**0.25**	**0.01**	**0.20**	**0.0001**	**1.53**

Methodology:
MIBK = Methyl Isobutyl Ketone
Potential HAPs Tons per Year = Density (lb/gal) * Gal of Material (gal/hr) * Weight % HAP * (8760 hr/yr) * (1 ton/2000lbs)

Appendix A: Emissions Calculations
Plant 2: Ceramic Mold Operation
Dip Slurry Preparation Process (P2-DSP), Shell Formation Process (P2-SFP), and Dewax Burnout Furnace (P2-DBF)

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Dip Slurry Preparation Process (P2-DSP)

Process	Bag House Control Device Air Flow (cfm)	Maximum Silica Flour Material Processed (ton/hr)	Maximum Silica Flour Material Processed (lb/hr)	Zircon Dust Generation Rate (%)	Uncontrolled Zircon Dust (PM) (ton/yr)	Dust Collection Efficiency (%)	Bag House Control Efficiency (%)	Controlled PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions**		Proposed Limit Multiplier above Controlled Emissions
								(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Dip Manufacturing	10,000	1.13	2,260	0.10%	9.90	100.0%	99.9%	0.00226	0.0099	0.68	2.98	301

Methodology:
Uncontrolled Emissions (ton/yr) = Max Ziron Usage (ton/hr) * Zircon Dust Generation Rate % * (8760 hr/yr)
Controlled Emissions (lb/hr) = Max Dust Generation Rate (lb/hr) * Zircon Dust Generation Rate (%) * (1 - control efficiency)
Controlled Emissions (ton/yr) = Controlled Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
**Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited Emissions/Controlled Potential Emissions

Shell Formation Process (P2-SFP)

Process	Control	Controlled Emission Rate (lb PM/1000 lb Shell)	Maximum Capacity Sand (ton/hr)	Control Efficiency (%)	Controlled PM Emissions		Uncontrolled PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
					(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
High Volume Sanding Operation	Monoshell Dust Collector DC-103	0.4101	0.495	99.9%	0.41	1.78	406.00	1778.28	1.22	5.34	3.00
Low Volume Sanding Operation	Monoshell Dust Collector DC-102	0.4101	0.495	99.9%	0.41	1.78	406.00	1778.28	1.22	5.34	3.00

Methodology:
Emission Rate (lb PM/1000 lb Shell) based on testing for the Plant 1 Sanding Towers.
Controlled PM Emissions (lb/hr) = Maximum Capacity Sand (ton/hr) * Controlled Emission Rate (lb PM/1000 lb Shell) * (2000 lb/ton) / 1000
Uncontrolled PM Emissions (lb/hr) = Controlled PM Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited Emissions/Controlled Potential Emissions

Three (3) Aluminum Oxide Barrel Sanders

Strands Consumption Rate (lbs/yr)	Silica Content (%)	VOC Content (%)	Particulate (ton/yr)	VOC (ton/yr)
5,400	0.98%	0.00%	0.03	0.000

Methodology
PM emissions (tons/year) = strands consumption rate (lbs/yr) * silica content (%) * 1/2000 (lbs/ton)
VOC emissions (tons/year) = strands consumption rate (lbs/yr) * VOC content (%) * 1/2000 (lbs/ton)

One (1) Dewax Burnout Furnace (P2-DBF)

Maximum Capacity (tons of cores/hr)	PM Emission Factor (lb PM/ton of core)*	Uncontrolled PM Emissions (ton/yr)	VOC Emission Factor (lb VOC/ton of core)*	Uncontrolled VOC Emissions (ton/yr)
0.48	2.54	5.34	0.29	0.60

Methodology:
The following calculations for the wax burn out oven were submitted by the source:
*Although an AP-42 emission factor is not available, burning the wax and polystyrene core components from the ceramic shells could be compared to burning a heavy petroleum residual oil, such as #5 residual oil. Wax is a residual petroleum product.

An estimated emission factor for removing the core materials could be derived by converting the emission factor for #5 residual oil from a pounds PM/VOC per 1,000 gallons basis to a pounds PM/VOC per ton basis. The following calculation demonstrates this:

(10 lbs PM/1000 gallons oil) * (1 gallon oil/7.88 lbs oil) * (2000 lbs/ton) = 2.54 lbs PM/ton of cores

(1.13 lbs VOC/1,000 gallons oil) * (1 gallon oil/7.88 lbs oil) * (2,000 lbs/ton) 0.29 lbs VOC/ton of cores

Potential Uncontrolled Emissions (ton/yr) = Maximum Capacity (ton of cores/hr) * EF (lb /ton of core) * (8,760 hr/yr) * (1 ton/2000 lb)

Appendix A: Emissions Calculations
Plant 2: Sticky Latex Coating Booth (P2-SLC) and Spray Application Insulation Booth (P2-SAB)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Sticky Latex Coating Booth (P2-SLC)

Material	Density (lb/gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	lb VOC/ gallon of coating less water	lb VOC/ gallon of coating	Potential VOC (lb/hr)	Potential VOC (lb/day)	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Spray Latex (Rohagit SD 9523)	8.5	64.50%	63.5%	1.0%	68.1%	33.00%	0.00063	63.3	0.27	0.09	0.0034	0.08	0.015	0.03	0.26	95%
							351.29	gal/yr								
							3,000.00	lbs/yr								

Spray Application Insulation Booth (P2-SAB)

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Weight % Methanol (of the 3% organics)	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	lb VOC/ gallon of coating less water	lb VOC/ gallon of coating	Potential VOC (lb/hr)	Potential VOC (lb/day)	VOC Potential (ton/yr)	Methanol Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Spray Insulation Binder	16.7	32.00%	29.0%	3.0%	0.6%	47.0%	47.00%	0.00063	64.7	0.95	0.50	0.0205	0.49	0.09	5.40E-04	0.10	1.07	95%
								359.3	gal/yr									
								6,000	lbs/yr									

Methodology:
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lb/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) * (1 ton/2000lbs)
Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)
Notes:
The Spray Latex does not contain HAPs.
The Spray Insulation Binder contains 3% latex. As a conservative assumption, all of the latex is assumed to be VOC. The latex contains 0.6% methanol.

Appendix A: Emissions Calculations
Plant 2: Induction Ovens (Process Emissions) (P2-EIO1 - P2-EIO4)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Four (4) Electric Induction Ovens (SCC 30400303)

Maximum Capacity (tons of steel/hr)	PM Emission Factor (lb PM/ton of steel)*	Unlimited PM Emissions (ton/yr)	Unlimited Nickel Emissions (ton/yr)	Unlimited Chromium Emissions (ton/yr)	Unlimited Cobalt Emissions (ton/yr)	Total Metal HAP Emissions (ton/yr)
0.90	0.9	3.55	0.29	1.14	0.10	1.53

Alloy Composition

HAP to PM Ratio		
Ni (lb Ni per lb PM)	Cr (lb Cr per lb PM)	Co (lb Co per lb PM)
0.0820	0.3210	0.0270

Methodology:
*The PM emission factor is based on SCC# 3-04-003-03 for grey iron foundry induction furnaces, AP-42, Chapter 12.10, Table 12.10
HAP mass fraction was determined based on stack testing for PM and HAP metals conducted in March 2013 for the Plant 1 Post-Cast dust collector.
Stack testing results for PM and HAP metals were used to develop the ratio of HAP lbs/hr to PM lbs/hr.

Unlimited PM Emissions (tons/yr) = Maximum Capacity (tons of steel/hr) * EF (lb/ton of steel) * 8,760 (hrs/yr) * 1/2,000 (ton/lb)
Unlimited Metal HAPs Emissions (ton/yr) = Unlimited PM Emissions (ton/yr) * Metal HAP Ratio (tons HAP per ton of PM)

Appendix A: Emissions Calculations
Plant 2: Hot Topping (P2-HT) and Mold Wrapping (P2-MW)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Hot Topping (P2-HT)	Ferrux Usage (lb/yr)	Concentration of F_6Na_2Si in Ferrux (%)	Hydrogen Fluoride Emission Factor (lb HF/ lb F_6Na_2Si)	HF Emissions (ton/yr)
	225,000	5.30%	0.03383	3.81

Methodology:
Emissions factor for HF generated from F_6Na_2Si based on material balance and assumes 100% conversion.

$F_6Na_2Si + H_2O = 6HF$ + other non HAP products

Emission Factor (lb HF/lb Ferrux) = 6*(20.0063 lb HF/lbmol)/(188.05594 lb F6Na2Si/lbmol) * 5.3 lb F6Na2Si/100 lb Ferrux = 0.03383
HF Emissions (ton/yr) = Ferrux Usage (lb/yr) x HF Emission Factor (lb/lb) x 1/2,000 (ton/lbs)

Mold Wrapping (P2-MW)	Kaowool Usage (lb/yr)	Percent released as particulate (%)	PM Emissions (ton/yr)
	750,000	0.100%	0.38

Methodology:
Emissions (ton/yr) = Kaowool Usage (lb/yr) * Percent released as particulate * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM

Appendix A: Emissions Calculations
Plant 2: Pneumatic Shell Removal (P2-KO)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Pneumatic Shell Removal (P2-KO)

Controlled PM Emissions (lb/hr) Based on Testing	Throughput During Testing (lb/hr)	Controlled Emission Rate (lb PM/1000 lb Material Processed)	Maximum Capacity Sand (ton/hr)	Control Efficiency (%)	Controlled PM Emissions		Uncontrolled PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
					(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
0.260	2160.0	0.1204	0.89	99.0%	0.21	0.94	21.43	93.85	0.64	2.80	2.99

Methodology:
Controlled PM Emissions based on testing performed March 2013 for Plant 1 Pneumatic Shell Removal.
Controlled Emission Rate (lb PM/1000 lb Material Processed) = Controlled PM Emissions (lb/hr) from Testing * 1000 / Throughput During Testing (lb/hr)
Controlled PM Emissions (lb/hr) = Maximum Capacity Sand (ton/hr) * Controlled Emission Rate (lb PM/1000 lb Material Processed) * (2000 lb/ton) / 1000
Uncontrolled PM Emissions (lb/hr) = Controlled PM Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited

Appendix A: Emissions Calculations
Plant 2: Manual Machining and Grinding (P2-MMG)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Manual Machining & Grinding (P2-MMG) - Particulate Emissions

Process	Control Device	Controlled PM Emission Rate (lb/1000 lb processed)	Maximum Capacity (ton/hr)	Control Efficiency (%)	Controlled Potential PM Emissions		Uncontrolled Potential PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
					(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Post Cast Hermle Manual Machining & Grinding	DC-100	0.322	0.89	99.9%	0.57	2.51	572.56	2507.81	1.71	7.49	2.99

Manual Machining & Grinding (P2-MMG) - HAP Emissions

Process	Controlled Emission Rate (lb HAP/1000 lb Material Processed)			Controlled Potential Emissions						Uncontrolled Potential Emissions (ton/yr)			Proposed Limited HAP Emissions*					
				Cr		Ni		Co					Cr		Ni		Co	
	Cr	Ni	Co	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	Cr	Ni	Co	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Post Cast Hermle Manual Machining & Grinding	0.054	0.015	0.004	0.096	0.422	0.026	0.116	0.008	0.035	421.587	115.561	34.624	0.287	1.26	0.079	0.35	0.024	0.11

Methodology:
Controlled Emission Rates (lb Pollutant/1000 lb Processed) based on testing for the Plant 1 Post-Cast and West Metals dust collectors.
Controlled Emissions (lb/hr) = Maximum Capacity (ton/hr) * Controlled Emission Rate (lb Pollutant/1000 lb Material Processed) * (2000 lb/ton) / 1000
Uncontrolled Emissions (lb/hr) = Controlled Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited

Appendix A: Emissions Calculations
Plant 2: Finishing Department (P2-FD)

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

Finishing Department (P2-FD) - Particulate Emissions

Process	Control Device	Controlled PM Emission Rate (lb/1000 lb processed)	Maximum Capacity (ton/hr)	Control Efficiency (%)	Controlled Potential PM Emissions		Uncontrolled Potential PM Emissions		Proposed Limited PM/PM10/PM2.5 Emissions*		Proposed Limit Multiplier above Controlled Emissions
					(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Post Cast (Grinding, Blasting & Welding)	DC-106	0.322	0.297	99.9%	0.19	0.84	190.85	835.94	0.57	2.50	2.99
	DC-107	0.322	0.297	99.9%	0.19	0.84	190.85	835.94	0.57	2.50	2.99
	DC-108	0.322	0.297	99.9%	0.19	0.84	190.85	835.94	0.57	2.50	2.99

Finishing Department (P2-FD) - HAP Emissions

Process	Controlled Emission Rate (lb HAP/1000 lb Material Processed)			Controlled Potential Emissions						Uncontrolled Potential Emissions (ton/yr)			Proposed Limited HAP Emissions*					
				Cr		Ni		Co					Cr		Ni		Co	
	Cr	Ni	Co	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	Cr	Ni	Co	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Post Cast (Grinding, Blasting & Welding)	0.054	0.015	0.004	0.032	0.141	0.009	0.039	0.003	0.012	140.529	38.520	11.541	0.192	0.84	0.053	0.23	0.016	0.07
	0.054	0.015	0.004	0.032	0.141	0.009	0.039	0.003	0.012	140.529	38.520	11.541	0.192	0.84	0.053	0.23	0.016	0.07
	0.054	0.015	0.004	0.032	0.141	0.009	0.039	0.003	0.012	140.529	38.520	11.541	0.192	0.84	0.053	0.23	0.016	0.07

Methodology:
Controlled Emission Rates (lb Pollutant/1000 lb Processed) based on testing for the Plant 1 Post-Cast and West Metals dust collectors.
Controlled Emissions (lb/hr) = Maximum Capacity (ton/hr) * Controlled Emission Rate (lb Pollutant/1000 lb Material Processed) * (2000 lb/ton) / 1000
Uncontrolled Emissions (lb/hr) = Controlled Emissions (lb/hr) / (1 - Control Efficiency)
Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Assumes PM10 and PM2.5 = PM
*Emission limits proposed by the Permittee.
Proposed Limit Multiplier Above Controlled Emissions = The amount multiplied by the controlled potential emissions to equal the proposed limited emissions = Proposed Limited

Appendix A: Emissions Calculations
Plant 2: Natural Gas Combustion (<100 MMBtu/hr)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

			Criteria Pollutants							GHGs				
			PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO	CO2	N2O***	CH4	GHG Mass-Based	CO2e
	Emission Factor in lb/MMCF		1.9	7.6	7.6	0.6	100.0	5.5	84.0	120000	2.2	2.3		
Emission Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential Emissions (tons/yr)											
Dewax Burnout Furnace (P2-DBF)	11.00	94.47	0.090	0.359	0.359	0.028	4.724	0.260	3.968	5668.24	0.10	0.11	5668.45	5701.92
Dewax Afterburner (DAB)	1.75	15.03	0.014	0.057	0.057	0.005	0.751	0.041	0.631	901.76	0.02	0.02	901.80	907.12
Boiler #1 (P2-B1)	16.00	137.41	0.131	0.522	0.522	0.041	6.871	0.378	5.771	8244.71	0.15	0.16	8245.02	8293.70
Boiler #2 (P2-B2)	16.00	137.41	0.131	0.522	0.522	0.041	6.871	0.378	5.771	8244.71	0.15	0.16	8245.02	8293.70
Boiler #3 (P2-B3)	16.00	137.41	0.131	0.522	0.522	0.041	6.871	0.378	5.771	8244.71	0.15	0.16	8245.02	8293.70
Insignificant Activities														
Preheat Oven #1 (P2-PHO1)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Preheat Oven #2 (P2-PHO2)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Preheat Oven #3 (P2-PHO3)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Preheat Oven #4 (P2-PHO4)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Preheat Oven #5 (P2-PHO5)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Preheat Oven #6 (P2-PHO6)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Preheat Oven #7 (P2-PHO7)	8.50	73.00	0.069	0.277	0.277	0.022	3.650	0.201	3.066	4380.00	0.08	0.08	4380.16	4406.03
Post-Casting Oven #8 (P2-PCO1)	4.00	34.35	0.033	0.131	0.131	0.010	1.718	0.094	1.443	2061.18	0.04	0.04	2061.25	2073.43
Post-Casting Oven #9 (P2-PCO2)	4.00	34.35	0.033	0.131	0.131	0.010	1.718	0.094	1.443	2061.18	0.04	0.04	2061.25	2073.43
TOTAL INSIGNIFICANT ACTIVITIES			0.55	2.20	2.20	0.17	28.99	1.59	24.35	34782.35	0.64	0.67	34783.66	34989.05
Plant 2 Limited Natural Gas Usage		1061.7	1.01	4.03	4.03	0.32	53.09	2.92	44.59	63702.00	1.17	1.22	63704.39	64080.55

Emission Factors are from AP-42, Tables 1.4-1 and 1.4-2.
*PM emission factor is filterable PM only. PM10 emission factor is filterable PM10 and condensable PM combined. PM2.5 emission factor is filterable PM2.5 and condensable PM combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
***Emission Factors for N2O: Uncontrolled = 2.2, Low NOx Burner = 0.64

			HAPs - Organics					HAPs - Metals					Total HAPs
			Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel	
	Emission Factor in lb/MMCF		2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	1.8880
Emission Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential Emissions (tons/yr)										
Dewax Burnout Furnace (P2-DBF)	11.00	94.471	9.9E-05	5.7E-05	3.5E-03	8.5E-02	1.6E-04	2.4E-05	5.2E-05	6.6E-05	1.8E-05	9.9E-05	8.9E-02
Dewax Afterburner (DAB)	1.75	15.029	1.6E-05	9.0E-06	5.6E-04	1.4E-02	2.6E-05	3.8E-06	8.3E-06	1.1E-05	2.9E-06	1.6E-05	1.4E-02
Boiler #1 (P2-B1)	16.00	137.412	1.4E-04	8.2E-05	5.2E-03	1.2E-01	2.3E-04	3.4E-05	7.6E-05	9.6E-05	2.6E-05	1.4E-04	1.3E-01
Boiler #2 (P2-B2)	16.00	137.412	1.4E-04	8.2E-05	5.2E-03	1.2E-01	2.3E-04	3.4E-05	7.6E-05	9.6E-05	2.6E-05	1.4E-04	1.3E-01
Boiler #3 (P2-B3)	16.00	137.412	1.4E-04	8.2E-05	5.2E-03	1.2E-01	2.3E-04	3.4E-05	7.6E-05	9.6E-05	2.6E-05	1.4E-04	1.3E-01
Insignificant Activities													
Preheat Oven #1 (P2-PHO1)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Preheat Oven #2 (P2-PHO2)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Preheat Oven #3 (P2-PHO3)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Preheat Oven #4 (P2-PHO4)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Preheat Oven #5 (P2-PHO5)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Preheat Oven #6 (P2-PHO6)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Preheat Oven #7 (P2-PHO7)	8.50	73.000	7.7E-05	4.4E-05	2.7E-03	6.6E-02	1.2E-04	1.8E-05	4.0E-05	5.1E-05	1.4E-05	7.7E-05	6.9E-02
Post-Casting Oven #8 (P2-PCO1)	4.00	34.353	3.6E-05	2.1E-05	1.3E-03	3.1E-02	5.8E-05	8.6E-06	1.9E-05	2.4E-05	6.5E-06	3.6E-05	3.2E-02
Post-Casting Oven #9 (P2-PCO2)	4.00	34.353	3.6E-05	2.1E-05	1.3E-03	3.1E-02	5.8E-05	8.6E-06	1.9E-05	2.4E-05	6.5E-06	3.6E-05	3.2E-02
TOTAL INSIGNIFICANT ACTIVITIES			6.1E-04	3.5E-04	2.2E-02	5.2E-01	9.9E-04	1.4E-04	3.2E-04	4.1E-04	1.1E-04	6.1E-04	5.5E-01
Plant 2 Limited Natural Gas Usage		1061.7	1.1E-03	6.4E-04	4.0E-02	9.6E-01	1.8E-03	2.7E-04	5.8E-04	7.4E-04	2.0E-04	1.1E-03	1.0E+00

Emission Factors are from AP-42, Tables 1.4-3 and 1.4-4.
The five highest organic and metal HAPs emission factors are provided above. The total HAPs is the sum of all HAPs listed in AP-42, Tables 1.4-3 and 1.4-4.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Heating Value of Natural Gas is assumed to be 1020 MMBtu/MMCF
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMCF/1,020 MMBtu
Potential Emission (tons/yr) = Throughput (MMCF/yr) * Emission Factor (lb/MMCF) * (1 ton/2,000 lb)
GHG Mass-Based (ton/yr) = CO2 (ton/yr) + N2O (ton/yr) + CH4 (ton/yr)
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) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Plant 2: Emergency Diesel Fired Generators
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Output Horsepower Rating (hp)	1,341.02
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	670,511
Diesel Fuel Heating Value (BTU/gal)	138,500
Diesel Fuel Sulfur Content (%)	0.5

Unit Description	HP	KW	BTU/hr
P2-EG1	670.511	500	1,707,590
P2-EG2	670.511	500	1,707,590

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	3.89E-04	4.05E-03 *(.00809S)*	2.40E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.23	0.13	0.13	1.36	8.05	0.24	1.84

*PM10 and PM2.5 emission factors in lb/hp-hr were 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). PM is filterable particulate only. PM10 and PM2.5 are filterable and condensable particulate combined.

**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	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 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**3.69E-03**
Potential Emission of Highest Single HAP (tons/yr)	**1.82E-03**

Green House 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	388.90	2.13E-02	3.12E-03

Summed Potential Emissions in tons/yr	**389**
CO2e Total in tons/yr	**390**

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.
N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) 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) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Plant 2: Low Temp Chemical Shell Removal (KOH Salt Bath (P2-KOH), Autoclave (P2-AC), and Water Blast Units (P2-IWBO))

Company Name: **Howmet Castings and Services, Inc.**
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Reviewer: **Laura Spriggs Thompson**

Low Temp Chemical Shell Removal

Scrubber	Grain Loading per Actual Cubic Foot of Inlet Air (gr/acfm)	Air Flow Rate (acfm)	Uncontrolled PM Emissions (tons/yr)	Scrubber Efficiency	Controlled PM Emissions (tons/yr)
KOH Salt Bath (P2-KOH) Scrubber	0.01	4200	1.58	90%	0.16
Autoclave (P2-AC) Scrubber	0.01	3000	1.13	90%	0.11
Water Blast Units (P2-IWBO)	0.01	2000	0.75	0%	0.75
Total			**3.45**		**1.02**

Methodology
Uncontrolled Emissions (ton/yr) = Loading (grains/acfm) * Air Flow Rate (acfm) * 1 lb/7,000 grains * 60 min/hr * 8,760 hr/yr * 1 ton/2,000 lbs
Controlled Emissions (ton/yr) = Uncontrolled Emissions (ton/yr) * (1 - Control Efficiency)
Assumes PM10 and PM2.5 = PM

Appendix A: Emissions Calculations
Plant 2: Cooling Tower (P2-CT)

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Process	Plant 2 Cooling Tower
Density of Water (lb/gal)	8.34
Recirculation Flow Rate (gal/min)	15,600
Cooing Tower Drift (% of recirculation rate)	0.005%
Cooling Tower Drift (gal/day)	1123
Cooling Tower Drift (lbs/day)	9,367
Cooling Tower Drift (million lbs/day)	0.0094
Recirculating Water Conductivity (micro-mho)	1,500
Conductivity to TDS Ratio	65%
Total Dissolved Solids (mg/l)	975
Cooling Tower Cycles of Concentration	2.00
PM Drift Emissions Rate (lbs/hr)	0.76
PM Drift Emissions Rate (tons/yr)	3.33
Percentage of PM-10 in PM emissions	82%
PM-10 Drift Emissions Rate (lbs/hr)*	0.62
PM-10 Drift Emissions Rate (tons/yr)*	2.73

Total PM Emissions (tons/yr) =	**3.33**
Total PM-10 Emissions (tons/yr)* =	**2.73**

Methodology
The cooling tower calculations were provided by the source and have been verified by IDEM.
Cooling Tower Drift (gal/day) = Recirculation Flow Rate (gal/min) x Cooling Tower Drift (% of reciruclation rate) x 60 (min./hr) x 24 (hr/day)
Cooling Tower Drift (lbs/day) = Cooling Tower Drift (gal/day) x Density of Water (lb/gal)
Cooling Tower Drift (million lbs/day) = Cooling Tower Drift (lbs/day) x 10^6
Total Dissolved Solids (mg/l) = Recirculating Water Conductivity (micro-mho) x Conductivity to TDS Ratio (%)
PM Drift Emissions Rate (lbs/hr) = Cooling Tower Cycles of Concentration x Cooling Tower Drift (million lbs/day) x Total Dissolved Solids (mg/l) / 24 (hrs/day)
PM Drift Emissions Rate (tons/yr) = PM Drift Emissions Rate (lbs/hr) x 8,760 (hr/yr) x 1/2,000 (ton/lb)
PM-10 Drift Emissions Rate (lbs/hr) = PM Drift Emissions Rate (lbs/hr) x PM-10 in PM Emissions (%)
PM-10 Drift Emissions Rate (tons/yr) = PM-10 Drift Emissions Rate (lbs/hr) x 8,760 (hr/yr) x 1/2,000 (ton/lb)
*PM-2.5 = PM-10

Appendix A: Emissions Calculations
Plant 2: Grinding/Finishing Operations

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Grinding Booths

Maximum Capacity (tons of steel/hr)	PM Emission Factor (lb PM/ton of steel)*	PM10 Emission Factor (lb PM10/ton of steel)*	Uncontrolled PM Emissions (ton/yr)	Uncontrolled PM10 Emissions (ton/yr)	HAP to PM Ratio (lb HAP/lb PM)			PTE (ton/yr)		
					Ni	Cr	Co	Ni	Cr	Co
4.5	0.01	0.0045	0.20	0.09	0.0173	0.0554	0.0055	0.003	0.011	0.001

Methodology

*The particulate emission factors above are from FIRE (Factor Information Retrieval), SCC 30400360.
Potential (uncontrolled) = Maximum Capacity (tons of steel/hr) * EF (lb/ton of steel) * 8,760 (hrs/yr) * 1/2,000 (ton/lbs)
Assumes PM2.5 = PM10
HAP ratios based on testing for the Carter Day and West Metals Dust Collectors Finishing Operations.
PTE HAPs (ton/yr) = PTE PM (ton/yr) * HAP to PM Ratio

Appendix A: Emissions Calculations
Fluorescent Penetrant Inspection (FPI) Process

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

FPI Process

Plant	Material	Maximum Usage (gal/yr)	VOC Content (lb VOC/gal)	Potential VOC Emissions (lb/hr)	Potential VOC Emissions (ton/yr)
Plant 1 (P1-FPI)	Zyglo Penetrant Emulsifier (ZR-1-B)	2000	3.74	0.85	3.74
Plant 2 (P2-FPI)	Zyglo Penetrant Emulsifier (ZR-1-B)	3000	3.74	1.28	5.61

Methodology:
VOC Emissions (lb/hr) = Maximum Usage (gal/yr) * VOC Content (lb VOC/gal) * (1 yr/8760 hr)
VOC Emissions (ton/yr) = VOC Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Note: The Zyglo Penetrant Emulsifier does not contain HAPs.

Appendix A: Emissions Calculations
Summary: 326 IAC 6-3-2 Emission Limits

Company Name: **Howmet Castings and Services, Inc.**
Address City IN Zip: **1110 E. Lincolnway, LaPorte, IN 46350**
SPR No.: **091-34217-00047**
Reviewer: **Laura Spriggs Thompson**

Unit	Process Weight Rate (ton/hr)	Unrestricted PTE PM (lb/hr)	Controlled PTE PM (lb/hr)	326 IAC 6-3-2 Allowable PM Emissions (lb/hr)	Capable of Complying with 326 IAC 6-3-2?
Plant 1					
Plant 1 Dip Manufacturing Operation (P1-DMO)	1.41	1.5	0.0015	5.16	yes - without control
Plant 1 Sanding Towers (P1-ST)	0.66	541.33	0.54	3.10	yes - with control
Induction Melting (P1-EIO2, 5, 6, 8, 9, 10)	0.6	0.531	0.53	2.91	yes - without control
Pneumatic Shell Removal (P1-KO-01 and	1.18	28.41	0.28	4.58	yes - with control
Post-Cast Operations (P1-PCO)	0.59	28.79	0.29	2.88	yes - with control
Finishing Operations (P1-FO)	0.59	46.62	1.39	2.88	yes - with control
Plant 2					
Dip Slurry Preparation Process (P2-DSP)	2.12	2.26	0.002	6.78	yes - without control
Shell Formation Process (P2-SFP) (Hi-Vol and Low-Vol)	0.99	812.00	0.81	4.07	yes - with control
Induction Ovens (P2-EIO1 - P2-EIO4)	0.89	0.81	0.81	3.79	yes - without control
Pneumatic Shell Removal (P2-KO)	0.89	21.43	0.21	3.79	yes - with control
Manual Machining & Grinding (P2-MMG)	0.89	572.56	0.57	3.79	yes - with control
Finishing Department (P2-FD)	0.89	572.56	0.57	3.79	yes - with control

Appendix A: Emissions Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: Howmet Castings and Services, Inc.
Address City IN Zip: 1110 E. Lincolnway, LaPorte, IN 46350
SPR No.: 091-34217-00047
Reviewer: Laura Spriggs Thompson

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 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)
Plant 1: Semi-Truck (trips in and out of facility to make a delivery)	50.0	2.0	100.0	30.0	3000.0	780	0.148	14.8	5392.0
Plant 1: Trucks, Vans, Cars & Cubes (trips in and out of facility to make a delivery)	60.0	2.0	120.0	4.0	480.0	780	0.148	17.7	6470.5
Plant 2: Semi-Truck (trips in and out of facility to make a delivery)	75.0	2.0	150.0	30.0	4500.0	780	0.148	22.2	8088.1
Plant 2: Trucks, Vans, Cars & Cubes (trips in and out of facility to make a delivery)	90.0	2.0	180.0	4.0	720.0	780	0.148	26.6	9705.7
		Totals	**550.0**		**8700.0**			**81.3**	**29656.3**

Average Vehicle Weight Per Trip = 15.8 tons/trip
Average Miles Per Trip = 0.15 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 =	15.8	15.8	15.8	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 = 120 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 =	1.454	0.291	0.0714	lb/mile
Mitigated Emission Factor, Eext =	1.334	0.267	0.0655	lb/mile

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)
Plant 1: Semi-Truck (trips in and out of facility to make a delivery)	3.92	0.78	0.19	3.60	0.72	0.18
Plant 1: Trucks, Vans, Cars & Cubes (trips in and out of facility to make a delivery)	4.70	0.94	0.23	4.32	0.86	0.21
Plant 2: Semi-Truck (trips in and out of facility to make a delivery)	5.88	1.18	0.29	5.40	1.08	0.26
Plant 2: Trucks, Vans, Cars & Cubes (trips in and out of facility to make a delivery)	7.05	1.41	0.35	6.48	1.30	0.32
Totals	**21.56**	**4.31**	**1.06**	**19.78**	**3.96**	**0.97**

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)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit
Note: Fugitive emissions are not counted towards Part 70 or PSD applicability; therefore, they are not included in the summary tables.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
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Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Sean Chapple
Howmet Castings and Services, Inc.
1110 E. Lincolnway
LaPorte, IN 46350

DATE: July 16, 2014

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

SUBJECT: Final Decision
Federally Enforceable State Operating Permit (FESOP) Significant Permit Revision
091-34217-00047

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Chris Kraynak, Plant Manager
Patrick M. Gorman, Environmental Process Technologies, Inc.
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

July 16, 2014

TO: LaPorte County Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Howmet Castings and Services, Inc.
Permit Number: 091-34217-00047

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

Mail Code 61-53

IDEM Staff	VHAUN 7/16/2014 Howmet Castings and Services Incorporated 091-34217-00047 FINAL			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

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1		Sean Chapple Howmet Castings and Services Incorporated 1110 E Lincolnway LaPorte IN 46350-3954 (Source CAATS) CONFIRMED DELIVERY									
2		Chris Kraynak Plant Manager Howmet Castings and Services Incorporated 1110 E Lincolnway LaPorte IN 46350-3954 *(RO CAATS)*									
3		LaPorte Co Public Library - LaPorte Branch 904 Indiana Ave. LaPorte IN 46350-4307 *(Library)*									
4		LaPorte City Council/ Mayors Ofc. 801 Michigan Avenue LaPorte IN 46350 *(Local Official)*									
5		LaPorte County Commissioners 555 Michigan Avenue # 202 LaPorte IN 46350 *(Local Official)*									
6		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 *(Affected Party)*									
7		Mr. Scott Sanders Howmet Casting and Services, Inc 1110 E. Lincolnway LaPorte IN 46350 *(Affected Party)*									
8		LaPorte County Health Department County Complex, 4th Floor, 809 State St. LaPorte IN 46350-3329 *(Health Department)*									
9		Mr. Dick Paulen Barnes & Thornburg 121 W Franklin Street Elkhart IN 46216 *(Affected Party)*									
10		Mr. Patrick M Gorman Environmental Process Technologies Inc 9132 Indianapolis Boulevard Highland IN 46322 *(Consultant)*									
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