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

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: August 29, 2008

RE: Metal Technologies / 033-21760-00042

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

Notice of Decision: Approval – Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) 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.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

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:

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(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.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impractible to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

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

Enclosures
FNTVOP.dot12/3/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

PREVENTION OF SIGNIFICANT DETERIORATION (PSD)
PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY

Metal Technologies Auburn, LLC
1537 West Auburn Drive
Auburn, Indiana 46706

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

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

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

Operation Permit No.: T033-21760-00042	
Original signed by: Matthew Stuckey, Chief Permits Branch Office of Air Quality	Issuance Date: August 29, 2008 Expiration Date: August 29, 2013

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Attachment A – NESHAP Subpart EEEEE

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary gray iron foundry.

Source Address:	1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address:	1537 West Auburn Drive, Auburn, Indiana 46706
General Source Phone Number:	(260) 925-4717
SIC Code:	3321
County Location:	DeKalb
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major Source, Section 112 of the Clean Air Act 1 of 28 PSD Source Categories

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

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

(a) One (1) gray iron charging, melting, ladle metallurgy, holding and transfer system; identified collectively as EU-2; constructed in 1995; a nominal capacity of 36 tons of metal per hour; a maximum capacity of 45 tons of metal per hour; emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. The transfer operations refer to the transfer of metal from the holding furnace to the ladle. The system consists of the following equipment/operations:

(1) One (1) furnace charging operation;

(2) Three (3) electric induction furnaces;

(3) One (1) ladle metallurgical station; and

(4) One (1) electric holding furnace.

The three (3) electric induction furnaces are considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(b) One (1) Line 1 pouring and casting operation; identified as EU-3a1; constructed in 1995 and modified in 2008; a nominal capacity of 10 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a1 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(c) One (1) Line 2 pouring and casting operation; identified as EU-3a2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a2 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(d) One (1) Line 3 pouring and casting operation; identified as EU-3a3; constructed in 1995

and to be modified in 2008; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a3 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(e) One (1) Line 4 pouring and casting operation; identified as EU-3a4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a4 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(f) One (1) Line 1 casting cooling operation; identified as EU-3b1; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3b.

(g) One (1) Line 2 casting cooling operation; identified as EU-3b2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3b.

(h) One (1) Line 3 casting cooling operation; identified as EU-3b3; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3d.

(i) One (1) Line 4 casting cooling operation; identified as EU-3b4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3d.

(j) One (1) Line 3 and Line 4 shakeout operation; identified as EU-4; constructed in 1995; a nominal capacity of 18 tons of metal and 110 tons of sand per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand per hour; particulate emissions controlled by baghouse DC-4; emissions exhaust to stack S-4.

(k) One (1) Line 1 and Line 2 shakeout operation; identified as EU-5a; constructed in 1995; a nominal capacity of 19 tons of metal and 110 tons of sand per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand per hour; particulate emissions controlled by baghouse DC-5; emissions exhaust to stack S-5.

(l) One (1) return sand/waste sand system; identified as EU-5bc; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-5 which exhausts to stack S-5.

(m) One (1) shot reblast unit; identified as EU-6; constructed in 1997; a nominal capacity of 1.12 tons of iron castings per hour; a maximum capacity of 5 tons of iron castings per hour; emissions controlled by baghouse DC-6 which exhausts to stack S-6.

(n) One (1) shot blast system; consisting of four (4) shot blast units; identified as EU-16 through EU-19; constructed in 1999; a total nominal capacity of 27 tons of iron castings per hour; a total maximum capacity of 32 tons of iron castings per hour; with emissions controlled by baghouse DC-3 which exhausts to stack S-15.

(o) Eight (8) grinders; identified together as EU-7; constructed in 1999; a combined nominal capacity of 25 tons of iron castings per hour; a combined maximum capacity of 32 tons of iron castings per hour; emissions controlled by individual dust collectors which exhausts indoors.

(p) One (1) sand handling system; identified as EU-1a; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-1 which exhausts to stack S-1.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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

(a) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment cutting torches, soldering equipment, welding equipment [326 IAC 6-3-2].

(b) One (1) test sample blast machine; identified as EU-1b; constructed in 1995; a nominal capacity of 150 pounds of metal per hour; emissions controlled by baghouse DC-1; exhausting to stack S-1. [326 IAC 6-3-2]

(c) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO2; 5 lb/hr or 25 lb/day NOx; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs: Scrap receiving operations: All metal scrap is received via truck and deposited into scrap storage bins within a building. A source of fugitive emissions. [326 IAC 6-4]

(d) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

(e) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations, which include the following: Two (2) enclosed grinding units controlled by fabric filters and exhausting inside the building. [326 IAC 6-3-2]

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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

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

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

SECTION B GENERAL CONDITIONS

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

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

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

(a) This permit, T033-21760-00042, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

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

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

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

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

B.4 Enforceability [326 IAC 2-7-7]

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

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

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

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

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

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

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

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by the "responsible official" of truth, accuracy, and completeness. This

certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(34).

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

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. 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 Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1) and (6)][326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, 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 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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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 or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

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

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

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

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

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and Northern 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 Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865
Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

(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 Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

(A) A description of the emergency;

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

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

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

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.

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

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

(h) The Permittee shall include all emergencies lasting one (1) hour or more in the Quarterly Deviation and Compliance Monitoring Report unless the emergency report made pursuant to Condition B.11 (b)(5) included a certification by the "responsible official" as defined by 326 IAC 2-7-1 (34).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(a) All terms and conditions of permits established prior to T033-21760-00042 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

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

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

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

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

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

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

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

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. 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.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit.
[326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

(1) That this permit contains a material mistake.

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

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

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

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

B.17 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

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

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

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

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

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

B.18 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

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

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

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue

MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

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

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

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

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

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

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

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

(4) The Permittee notifies the:

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

and

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

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

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to

326 IAC 2-7-20(b),(c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

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

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

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

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

(3) Any change in emissions; and

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

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

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

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

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

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

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

(b) Any modification at an existing major source is governed by the requirements of 326 IAC 2-2 (for sources located in attainment areas).

B.22 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

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

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

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

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

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

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

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

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

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

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

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

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

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

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

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

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

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

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

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

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

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

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

C.6 Stack Height [326 IAC 1-7]

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

C.7 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
Asbestos Section, Office of Air Quality
100 North Senate Avenue
MC 61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

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

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

C.8 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere

in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, 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 certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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 certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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.

(d) The Permittee may request an extension of a deadline to conduct testing as provided by 40 CFR 60.8, 61.13 or 63.7.

(e) In addition to any other testing required by this permit if at any time the Permittee replaces a control device that is used to comply with an emission limitation listed in Section D, then the Permittee shall conduct a performance test no later than one hundred eighty (180) days after installation of the replacement control device in accordance with this condition.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

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

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

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, 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 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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.11 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

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

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

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

C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

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

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

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

within ninety (90) days after the date of issuance of this permit.

The ERP does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

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

C.14 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

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

C.15 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance, the Permittee shall 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 emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned 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 within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(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 maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) 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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.17 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

(a) In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2010 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

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

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

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

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement 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.18 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2][326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. 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, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

(c) If there is a reasonable possibility (as defined in 40 CFR 51.165 (a)(6)(vi)(A), 40 CFR 51.165 (a)(6)(vi)(B), 40 CFR 51.166 (r)(6)(vi)(a), and/or 40 CFR 51.166 (r)(6)(vi)(b)**)** that

a "project" (as defined in 326 IAC 2-2-1(qq)) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

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

(1) A description of the project.

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

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

(A) Baseline actual emissions;

(B) Projected actual emissions;

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

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

(d) If there is a reasonable possibility (as defined in 40 CFR 51.165 (a)(6)(vi)(A) and/or 40 CFR 51.166 (r)(6)(vi)(a)) that a “project” (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

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

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

C.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2][326 IAC 2-3]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, 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) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) The first report shall cover the period commencing on the date of issuance of this permit 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.

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

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

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

(g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

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

(2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C - General Record Keeping Requirements.

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

(4) Any other information that the Permittee deems fit to include in this report.

Reports required in this part shall be submitted to:

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

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

Stratospheric Ozone Protection

C.20 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 the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Melting, Pouring and Casting Operations

(a) One (1) gray iron charging, melting, ladle metallurgy, holding and transfer system; identified collectively as EU-2; constructed in 1995; a nominal capacity of 36 tons of metal per hour; a maximum capacity of 45 tons of metal per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. The transfer operations refer to the transfer of metal from the holding furnace to the ladle. The system consists of the following equipment/operations:

(1) One (1) furnace charging operation;

(2) Three (3) electric induction furnaces;

(3) One (1) ladle metallurgical station; and

(4) One (1) electric holding furnace.

The three (3) electric induction furnaces are considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(b) One (1) Line 1 pouring and casting operation; identified as EU-3a1; constructed in 1995 and modified in 2008; a nominal capacity of 10 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a1 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(c) One (1) Line 2 pouring and casting operation; identified as EU-3a2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a2 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(d) One (1) Line 3 pouring and casting operation; identified as EU-3a3; constructed in 1995 and to be modified in 2008; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a3 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(e) One (1) Line 4 pouring and casting operation; identified as EU-3a4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a4 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

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

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

D.1.1 Best Available Control Technology (BACT) for PM/PM10 Emissions [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD T033-21760-00042, the Permittee shall comply with the following:

(a) PM/PM10 emissions from the charging, melting, metallurgy, holding and transfer operations (EU-2) shall be controlled by a baghouse.

(b) PM/PM10 emissions from the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4) shall be controlled by a baghouse.

(c) The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-2: Charging, melting, metallurgy, holding and transfer operations (EU-2)	0.003	3.6	0.06
Stack S-2: Pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4)			

(d) The total iron production of the electric induction furnaces (comprising EU-2) shall not exceed 750 tons per day and 220,000 tons per twelve consecutive month period with compliance determined at the end of each month.

(e) Visible emissions of the fugitive emissions from building openings shall not exceed twenty percent (20%) opacity, as determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A); except for one 6-minute average per hour that does not exceed twenty seven percent (27%) opacity.

D.1.2 Best Available Control Technology (BACT) for VOC Emissions [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2-3 (PSD - BACT), 326 IAC 8-1-6, and PSD T033-21760-00042, VOC BACT for the pouring, cooling and shakeout operations (EU-3a1 through EU-3a4, EU-3b1 through EU-3b4, EU-4 and EU-5a) is as follows:

(a) The Permittee shall use low emitting greensand binding materials and core resin binders.

(b) The total VOC emissions from pouring, cooling and shakeout operations shall not exceed 0.8 pounds per ton of metal poured when using greensand molds without cores and 1.4 pounds per ton of metal poured when using greensand molds with cores as determined by validation testing in accordance with Condition D.1.6.

D.1.3 Best Available Control Technology (BACT) for CO Emissions [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD) and PSD T033-21760-00042, the CO emissions from the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4, stack S-2), casting cooling operations (EU-3b1 and EU-3b2, stack S-3b; EU-3b3 and EU-3b4, stack S-3d) and shakeout operations (EU-4, stack S-4 and EU-5a, stack S-5) shall not exceed 6.0 pounds per ton of metal.

D.1.4 PSD Minor Limit - Lead Emissions [326 IAC 2-2]

The total lead emissions from the charging, melting, metallurgy, holding and transfer operations (EU-2, stack S-2) and pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4, stack S-2) shall not exceed 0.003 pounds per ton of iron produced.

Compliance with these limits and Conditions D.1.1(d), D.2.4 and D.3.4 will limit the source-wide lead emissions to less than 0.6 tons per twelve consecutive month period and render the requirements of 326 IAC 2-2 not applicable to the source.

Compliance Determination Requirements

D.1.5 Particulate and VOC Control

(a) Pursuant to 326 IAC 2-2, and in order to comply with Conditions D.1.1 and D.1.4, baghouse DC-2, used to control particulate emissions, shall be in operation at all times EU-2, EU-3a1, EU-3a2, EU-3a3, and EU-3a4 are in operation.

(b) Pursuant to 326 IAC 2-2 and 326 IAC 8-1-6, and in order to comply with Condition D.1.2, the greensand molding materials, percent loss on ignition (%LOI), shell and phenolic urethane cold box core resins and percent resin in the cores shall be consistent with the respective characteristics used during validation testing.

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

(a) No later than November 3, 2010, in order to demonstrate compliance with Condition D.1.1, the Permittee shall perform PM/PM10 testing for EU-2, EU-3a1, EU-3a2, EU-3a3, and EU-3a4 utilizing methods approved by the Commissioner. PM10 includes filterable and condensable PM10. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

(b) No later than November 3, 2010, in order to demonstrate compliance with Condition D.1.3, the Permittee shall perform CO testing for EU-2, EU-3a1, EU-3a2, EU-3a3, EU-3a4, EU-3b1, EU-3b2, EU-3b3, EU-3b4, EU-4 and EU-5a utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

(c) Within 180 days after issuance of this permit, in order to demonstrate compliance with Condition D.1.4, the Permittee shall perform lead testing for EU-2, EU-3a1, EU-3a2, EU-3a3 and EU-3a4 utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

(d) The Permittee shall submit a testing protocol for the VOC validation testing of the greensand and core materials used in the casting process. The test protocol shall identify the specific resins and resin content of the cores to be tested and the resin content of the cores as a % of the total core weight. The test protocol shall also identify the %LOI of the greensand molds, the casting weight and specific test pattern used in the validation testing. The validation testing for VOCs shall be performed on individual molds for both greensand molds only and for greensand molds with cores.

(e) Validation testing of the materials currently in use at the facility shall be completed by August 1, 2008 for casting in greensand molds with either shell or phenolic urethane cold box cores.

(f) Once the results of validation testing are available, the OAQ will evaluate those results and determine if the BACT requirements established in this condition must be revised. If revisions are needed, the OAQ will reopen this permit using the provisions of 326 IAC 2-7-9 (Permit Reopening) to include revised requirements necessary to comply with 326 IAC 2-2 (PSD).

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

D.1.7 Record Keeping Requirements

(a) To document compliance with Condition D.1.1(d), the Permittee shall maintain records of the total metal production of the electric induction furnaces (comprising EU-2).

(b) To document compliance with Condition D.1.2, the Permittee shall maintain records of the following:

(1) The resin content of the shell and phenolic urethane cold box cores, and

(2) The %LOI of the greensand mold system.

(c) To document compliance with Condition D.1.6, the Permittee shall maintain records of the results from testing required by that condition.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.8 Reporting Requirements

A quarterly summary of the information to document compliance with the twelve-month rolling limit in Condition D.1.1(d) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Casting cooling operations

(f) One (1) Line 1 casting cooling operation; identified as EU-3b1; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3b.

(g) One (1) Line 2 casting cooling operation; identified as EU-3b2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3b.

(h) One (1) Line 3 casting cooling operation; identified as EU-3b3; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3d.

(i) One (1) Line 4 casting cooling operation; identified as EU-3b4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3d.

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

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

D.2.1 Best Available Control Technology (BACT) for PM/PM10 Emissions [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD T033-21750-00042, the PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-3b: Line 1 and Line 2 casting cooling operations (EU-3b1 and EU-3b2)	0.01	2.14	0.09
Stack S-3d: Line 3 and Line 4 casting cooling operations (EU-3b3 and EU-3b4)	0.01	2.14	0.09

D.2.2 Best Available Control Technology (BACT) for VOC Emissions [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2-3 (PSD - BACT), 326 IAC 8-1-6 and PSD T033-21760-00042, the Permittee shall comply with VOC BACT for the casting cooling operations (EU-3b1 through EU-3b4) in Condition D.1.2.

D.2.3 Best Available Control Technology (BACT) for CO Emissions [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD T033-21760-00042, the Permittee shall comply with CO BACT for the casting cooling operations (EU-3b1 through EU-3b4) in Condition D.1.3.

D.2.4 PSD Minor Limit - Lead Emissions [326 IAC 2-2]

(a) The lead emissions from the Line 1 and Line 2 casting cooling operations (EU-3b1 and EU-3b2, stack S-3b) shall not exceed 0.0012 pounds per ton of iron processed.

(b) The lead emissions from the Line 3 and Line 4 casting cooling operations (EU-3b3 and EU-3b4, stack S-3d) shall not exceed 0.0012 pounds per ton of iron processed.

Compliance with these limits and Conditions D.1.1(d), D.1.4 and D.3.4 will limit the source-wide lead emissions to less than 0.6 tons per twelve consecutive month period and render the requirements of 326 IAC 2-2 not applicable.

D.2.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

Compliance Determination Requirements

D.2.6 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) No later than November 3, 2010, in order to demonstrate compliance with Condition D.2.1, the Permittee shall perform PM/PM10 testing for EU-3b1, EU-3b2, EU-3b3, and EU-3b4 utilizing methods approved by the Commissioner. PM10 includes filterable and condensable PM10. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

(b) In order to demonstrate compliance with Condition D.2.2, the Permittee shall perform the VOC testing for EU-3b1, EU-3b2, EU-3b3, and EU-3b4 required by Condition D.1.6(d).

(c) In order to demonstrate compliance with Condition D.2.3, the Permittee shall perform the CO testing for EU-3b1, EU-3b2, EU-3b3, and EU-3b4 required by Condition D.1.6(b).

(d) Within 180 days after issuance of this permit, in order to demonstrate compliance with Condition D.2.4, the Permittee shall perform lead testing for EU-3b1, EU-3b2, EU-3b3, and EU-3b4 utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

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

D.2.7 Record Keeping Requirements

(a) To document compliance with Condition D.2.6, the Permittee shall maintain records of the results from testing required by that condition.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.3 FACILITY OPERATION CONDITIONS

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

(j) One (1) Line 3 and Line 4 shakeout operation; identified as EU-4; constructed in 1995; a nominal capacity of 19 tons of metal and 110 tons of sand per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand per hour; particulate emissions controlled by baghouse DC-4; emissions exhaust to stack S-4.

(k) One (1) Line 1 and Line 2 shakeout operation; identified as EU-5a; constructed in 1995; a nominal capacity of 18 tons of metal and 110 tons of sand per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand per hour; particulate emissions controlled by baghouse DC-5; emissions exhaust to stack S-5.

(l) One (1) return sand/waste sand system; identified as EU-5bc; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-5 which exhausts to stack S-5.

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

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

D.3.1 Best Available Control Technology (BACT) for PM/PM10 Emissions [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD T033-21760-00042, the Permittee shall comply with the following:

(a) PM/PM10 emissions from the Line 3 and Line 4 shakeout operation (EU-4) shall be controlled by a baghouse.

(b) PM/PM10 emissions from the Line 1 and Line 2 shakeout operation (EU-5a) and return sand and waste sand system (EU-5bc) shall be controlled by a baghouse.

(c) The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-4: Line 3 and Line 4 shakeout operation (EU-4)	0.003	2.06	0.10
Stack S-5: Line 1 and Line 2 shakeout operation (EU-5a) and return sand and waste sand system (EU-5bc)	0.003	3.34	0.12

D.3.2 Best Available Control Technology (BACT) for VOC Emissions [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to to 326 IAC 2-2-3 (PSD - BACT), 326 IAC 8-1-6 and PSD T033-21760-00042, the Permittee shall comply with VOC BACT for the shakeout operations (EU-4 and EU-5a) in Condition D.1.2.

D.3.3 Best Available Control Technology (BACT) for CO Emissions [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD T033-21760-00042, the Permittee shall comply with CO BACT for the shakeout operations (EU-4 and EU-5a) in Condition D.1.3.

D.3.4 Lead Emissions [326 IAC 2-2]

(a) The lead emissions from the Line 3 and Line 4 shakeout operation (EU-4, stack S-4) shall not exceed 0.0012 pounds per ton of iron processed.

(b) The lead emissions from the Line 1 and Line 2 shakeout operation (EU-5a, stack S-5) and return sand and waste sand system (EU-5bc, stack S-5) shall not exceed 0.0012 pounds per ton of iron processed.

Compliance with these limits and Conditions D.1.1(d), D.1.4, and D.2.4 will limit the source-wide lead emissions to less than 0.6 tons per twelve consecutive month period and render the requirements of 326 IAC 2-2 not applicable.

D.3.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

Compliance Determination Requirements

D.3.6 Particulate Control

(a) Pursuant to 326 IAC 2-2, and in order to comply with Condition D.3.4(a), baghouse DC-4, used to control particulate emissions, shall be in operation at all times EU-4 is in operation.

(b) Pursuant to 326 IAC 2-2, and in order to comply with Condition D.3.4(b), baghouse DC-5, used to control particulate emissions, shall be in operation at all times EU-5a and EU-5bc are in operation.

D.3.7 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) No later than November 3, 2010, in order to demonstrate compliance with Condition D.3.1, the Permittee shall perform PM/PM10 testing for EU-4, EU-5a and EU-5bc utilizing methods approved by the Commissioner. PM10 includes filterable and condensable PM10. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

(b) In order to demonstrate compliance with Condition D.3.2, the Permittee shall perform the VOC testing for EU-4 and EU-5a required by Condition D.1.6(d).

(c) In order to demonstrate compliance with Condition D.3.3, the Permittee shall perform the CO testing for EU-4 and EU-5a required by Condition D.1.6(b).

(d) Within 180 days after issuance of this permit, in order to demonstrate compliance with Condition D.3.4, the Permittee shall perform lead testing for EU-4 and EU-5a utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years after completion of the most recent valid compliance stack test.

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

D.3.8 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from EU-4, EU-5a and EU-5bc (stacks S-4 and S-5) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.3.9 Baghouse Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with EU-4, EU-5a and EU-5bc at least once per day when the respective facilities are in operation.

(b) When for any one reading, the pressure drop is outside the normal range of 1.5 to 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

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

D.3.10 Broken or Failed Bag Detection

For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.3.11 Record Keeping Requirements

(a) To document compliance with Condition D.3.7, the Permittee shall maintain records of the results from testing required by that condition.

(b) To document compliance with Condition D.3.8, the Permittee shall maintain records of the visible emission notations required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) To document compliance with Condition D.3.9, the Permittee shall maintain records of the pressure drop readings required by that condition. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).

(d) For extended periods of time when visible emissions notations and daily parametric monitoring are not required (e.g., the units are venting indoors or during plant shutdown),

IDEM, OAQ has determined that it is sufficient to document the reason daily visible emissions notations and parametric monitoring will not be required on the first day of the period and document when the visible emissions notations and daily parametric monitoring requirement will resume.

(e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.4 FACILITY OPERATION CONDITIONS

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

(m) One (1) shot reblast unit; identified as EU-6; constructed in 1997; a nominal capacity of 1.12 tons of iron castings per hour; a maximum capacity of 5 tons of iron castings per hour; emissions controlled by baghouse DC-6 which exhausts to stack S-6.

(n) One (1) shot blast system; consisting of four (4) shot blast units; identified as EU-16 through EU-19; constructed in 1999; a total nominal capacity of 27 tons of iron castings per hour; a total maximum capacity of 32 tons of iron castings per hour; with emissions controlled by baghouse DC-3 which exhausts to stack S-15.

(o) Eight (8) grinders; identified together as EU-7; constructed in 1999; a combined nominal capacity of 25 tons of iron castings per hour; a combined maximum capacity of 32 tons of iron castings per hour; emissions controlled by individual dust collectors; exhausting indoors.

(p) One (1) sand handling system; identified as EU-1a; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-1 which exhausts to stack S-1.

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

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

D.4.1 Best Available Control Technology (BACT) for PM/PM10 Emissions [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD T033-21760-00042, the Permittee shall comply with the following:

(a) PM/PM10 emissions from the shot reblast unit (EU-6) shall be controlled by a baghouse.

(b) PM/PM10 emissions from the shot blast system (EU-16 through EU-19) shall be controlled by a baghouse.

(c) PM/PM10 emissions from the grinders (EU-7) shall be controlled by dust collectors and exhaust indoors.

(d) PM/PM10 emissions from the sand handling operations (EU-1a) shall be controlled by a baghouse.

The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	PM/PM10 Emissions	
	(gr/dscf)	(lb/hr)
Stack S-6: Shot reblast unit (EU-6)	0.003	0.15
Stack S-15: Shot blast system (EU-16 through EU-19)	0.003	0.95
Stack S-1: Sand handling operations (EU-1a)	0.003	0.64

Exhausts indoors: Grinders (EU-7)	0.003	-

D.4.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

Compliance Determination Requirements

D.4.3 Particulate Control

(a) Pursuant to 326 IAC 2-2, and in order to comply with Condition D.4.1, baghouse DC-6, used to control particulate emissions, shall be in operation at all times EU-6 is in operation.

(b) Pursuant to 326 IAC 2-2, and in order to comply with Condition D.4.1, baghouse DC-3, used to control particulate emissions, shall be in operation at all times EU-16 through EU-19 are in operation.

(c) Pursuant to 326 IAC 2-2, the dust collectors used in conjunction with EU-7, used to control particulate emissions, shall be in operation at all times EU-7 is in operation.

(d) Pursuant to 326 IAC 2-2, baghouse DC-1, used to control particulate emissions, shall be in operation at all times EU-1a is in operation.

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

D.4.4 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from EU-6, EU-16 through EU-19 and EU-1a (stacks S-6, S-15 and S-1) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.4.5 Baghouse Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with EU-6, EU-16 through EU-19, EU-1a and EU-7 at least once per day when the respective facilities are in operation.

(b) When for any one reading, the pressure drop is outside the normal range of 1.5 to 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a

deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

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

D.4.6 Broken or Failed Bag Detection

For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.4.7 Record Keeping Requirements

(a) To document compliance with Condition D.4.4, the Permittee shall maintain records of the visible emission notations required by that condition. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document compliance with Condition D.4.5, the Permittee shall maintain records of the pressure drop readings required by that condition. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).

(c) For extended periods of time when visible emissions notations and daily parametric monitoring are not required (e.g., the units are venting indoors or during plant shutdown), IDEM, OAQ Compliance Branch has determined that it is sufficient to document the reason daily visible emissions notations and parametric monitoring will not be required on the first day of the period and document when the visible emissions notations and daily parametric monitoring requirement will resume.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Specifically Regulated Insignificant Activities

(a) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment cutting torches, soldering equipment, welding equipment [326 IAC 6-3-2].

(b) One (1) test sample blast machine; identified as EU-1b; constructed in 1995; a nominal capacity of 150 pounds of metal per hour; emissions controlled by baghouse DC-1; exhausting to stack S-1. [326 IAC 6-3-2]

(c) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO2; 5 lb/hr or 25 lb/day NOx; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs: Scrap receiving operations: All metal scrap is received via truck and deposited into scrap storage bins within a building. A source of fugitive emissions. [326 IAC 6-4]

(d) Paved and unpaved roads and parking lots with public access [326 IAC 6-4].

(e) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations, which include the following: Two (2) enclosed grinding units controlled by fabric filters and exhausting inside the building. [326 IAC 6-3-2]

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

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

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

Pursuant to 326 IAC 6-3-2, the particulate emissions from the insignificant grinding, brazing, soldering, and welding operations and test sample blast machine shall be limited by the following:

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

SECTION E.1 FACILITY OPERATION CONDITIONS

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

The charging, melting, ladle metallurgy, holding and transfer system; identified collectively as EU-2 and listed in Section D.1.

The pouring and casting operations; identified as EU-3a1 through EU-3a4 and listed in Section D.1.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements – 40 CFR Part 63, Subpart EEEEE [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][326 IAC 20-92] [40 CFR Part 63, Subpart A]

(a) Pursuant to 326 IAC 20-92 and 40 CFR 63.7760, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the iron and steel foundry and all activities associated with the iron and steel foundry as specified in 40 CFR 63.7682(b), and in Table 1 of 40 CFR Part 63, Subpart EEEEE in accordance with schedule in 40 CFR Part 63, Subpart EEEEE.

(b) Pursuant to 326 IAC 20-92 and 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.1.2 National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries: Requirements [40 CFR Part 63, Subpart EEEEE]

Except as specified in 40 CFR 63.7683(b), pursuant to 326 IAC 20-92 and 40 CFR 63.7683(a), the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart EEEE for the electric induction furnaces associated with facility EU-2, the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4) and the fugitive emissions from foundry operations no later than April 23, 2007:

(1) 40 CFR 63.7681
(2) 40 CFR 63.7682
(3) 40 CFR 63.7683 (a), (b), (f)
(4) 40 CFR 63.7690 (a)(1), (a)(5), (a)(7)
(5) 40 CFR 63.7700 (a), (b), (c)(1)(i), (c)(2), (c)(3)
(6) 40 CFR 63.7710 (a), (b)(1), (b)(3) - (b)(6)
(7) 40 CFR 63.7720
(8) 40 CFR 63.7730 (a), (b)
(9) 40 CFR 63.7731
(10) 40 CFR 63.7732 (a), (b)(1), (b)(2), (c)(1), (c)(2), (d), (h)
(11) 40 CFR 63.7733 (e), (f)
(12) 40 CFR 63.7734 (a)(1), (a)(5), (a)(7)
(13) 40 CFR 63.7735 (a), (b)
(14) 40 CFR 63.7736 (c), (d)
(15) 40 CFR 63.7740 (b), (f)
(16) 40 CFR 63.7742
(17) 40 CFR 63.7743 (a)(1), (a)(5), (a)(7), (c)

(18) 40 CFR 63.7744 (a)
(19) 40 CFR 63.7745
(20) 40 CFR 63.7746
(21) 40 CFR 63.7747 (b) - (d)
(22) 40 CFR 63.7750 (a), (b), (d), (e)
(23) 40 CFR 63.7751
(24) 40 CFR 63.7752
(25) 40 CFR 63.7753
(26) 40 CFR 63.7760
(27) 40 CFR 63.7761
(28) 40 CFR 63.7765
(29) Table 1 of Subpart EEEEE

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Metal Technologies Auburn, LLC
Source Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Part 70 Permit No.: T033-21760-00042

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)

☐ Report (specify)

☐ Notification (specify)

☐ Affidavit (specify)

☐ Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
Signature:
Printed Name:
Title/Position:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

COMPLIANCE BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Metal Technologies Auburn, LLC
Source Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Part 70 Permit No.: T033-21760-00042

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
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: _____

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Metal Technologies Auburn, LLC
Source Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Part 70 Permit No.: T033-21760-00042
Facility: Electric Induction Furnaces (comprising EU-2)
Parameter: metal production
Limit: The total iron production shall not exceed 220,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER : YEAR:

Month	Iron production	Iron production	Iron production
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Metal Technologies Auburn, LLC
Source Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address: 1537 West Auburn Drive, Auburn, Indiana 46706
Part 70 Permit No.: T033-21760-00042

Months: _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

Attach a signed certification to complete this report.

ATTACHMENT A

40 CFR Part 63 Subpart EEEEE— National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries

PREVENTION OF SIGNIFICANT DETERIORATION (PSD)
PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY

Metal Technologies Auburn, LLC
1537 West Auburn Drive
Auburn, Indiana 46706

Subpart EEEEE—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries

Source: 69 FR 21923, Apr. 22, 2004, unless otherwise noted.

What this Subpart Covers

§ 63.7680 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for iron and steel foundries. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart.

§ 63.7681 Am I subject to this subpart?

You are subject to this subpart if you own or operate an iron and steel foundry that is (or is part of) a major source of hazardous air pollutant (HAP) emissions. Your iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year as defined in §63.2.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, Feb. 7, 2008]

§ 63.7682 What parts of my foundry does this subpart cover?

(a) The affected source is each new or existing iron and steel foundry.

(b) This subpart covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines, automated shakeout lines, and mold and core making lines. This subpart also covers fugitive emissions from foundry operations.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source before December 23, 2002.

(d) An affected source is new if you commenced construction or reconstruction of the affected source on or after December 23, 2002. An affected source is reconstructed if it meets the definition of “reconstruction” in §63.2.

§ 63.7683 When do I have to comply with this subpart?

(a) Except as specified in paragraph (b) of this section, if you have an existing affected source, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you no later than April 23, 2007. Major source status for existing affected sources must be determined no later than April 23, 2007.

(b) If you have an existing affected source, you must comply with the work practice standards in §63.7700(b) or (c), as applicable, no later than April 22, 2005.

(c) If you have a new affected source for which the initial startup date is on or before April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you by April 22, 2004.

(d) If you have a new affected source for which the initial startup date is after April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you upon initial startup.

(e) If your iron and steel foundry is an area source that becomes a major source of HAP, you must meet the requirements of §63.6(c)(5).

(f) You must meet the notification and schedule requirements in §63.7750. Note that several of these notifications must be submitted before the compliance date for your affected source.

Emissions Limitations

§ 63.7690 What emissions limitations must I meet?

(a) You must meet the emissions limits or standards in paragraphs (a)(1) through (11) of this section that apply to you. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for particulate matter (PM) in paragraph (a)(1)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(1)(ii) of this section:

(i) 0.005 grains of PM per dry standard cubic foot (gr/dscf), or

(ii) 0.0004 gr/dscf of total metal HAP.

(2) For each cupola metal melting furnace at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(2)(i) or (ii) of this section or, alternatively the limit for total metal HAP in paragraph (a)(2)(iii) or (iv) of this section:

(i) 0.006 gr/dscf of PM; or

(ii) 0.10 pound of PM per ton (lb/ton) of metal charged, or

(iii) 0.0005 gr/dscf of total metal HAP; or

(iv) 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(3)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(3)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(4)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(4)(ii) of this section:

(i) 0.001 gr/dscf of PM, or

(ii) 0.00008 gr/dscf of total metal HAP.

(5) For each pouring station at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(5)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(5)(ii) of this section:

(i) 0.010 gr/dscf of PM, or

(ii) 0.0008 gr/dscf of total metal HAP.

(6) For each pouring area or pouring station at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(6)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(6)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, you must not discharge any fugitive emissions to the atmosphere from foundry operations that exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, you must not discharge emissions of volatile organic hazardous air pollutants (VOHAP) through a conveyance to the atmosphere that exceed 20 parts per million by volume (ppmv) corrected to 10 percent oxygen.

(9) As an alternative to the work practice standard in §63.7700(e) for a scrap preheater at an existing iron and steel foundry or in §63.7700(f) for a scrap preheater at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed a flow-weighted average of 20 ppmv.

(11) For each triethylamine (TEA) cold box mold or core making line at a new or existing iron and steel foundry, you must meet either the emissions limit in paragraph (a)(11)(i) of this section or, alternatively the emissions standard in paragraph (a)(11)(ii) of this section:

(i) You must not discharge emissions of TEA through a conveyance to the atmosphere that exceed 1 ppmv, as determined according to the performance test procedures in §63.7732(g); or

(ii) You must reduce emissions of TEA from each TEA cold box mold or core making line by at least 99 percent, as determined according to the performance test procedures in §63.7732(g).

(b) You must meet each operating limit in paragraphs (b)(1) through (5) of this section that applies to you.

(1) You must install, operate, and maintain a capture and collection system for all emissions sources subject to an emissions limit for VOHAP or TEA in paragraphs (a)(8) through (11) of this section.

(i) Each capture and collection system must meet accepted engineering standards, such as those published by the American Conference of Governmental Industrial Hygienists.

(ii) You must operate each capture system at or above the lowest value or settings established as operating limits in your operation and maintenance plan.

(2) You must operate each wet scrubber applied to emissions from a metal melting furnace, scrap preheater, pouring area, or pouring station subject to an emissions limit for PM or total metal HAP in paragraphs (a)(1) through (6) of this section such that the 3-hour average pressure drop and scrubber water flow rate does not fall below the minimum levels established during the initial or subsequent performance test.

(3) You must operate each combustion device applied to emissions from a cupola metal melting furnace subject to the emissions limit for VOHAP in paragraph (a)(8) of this section, such that the 15-minute average combustion zone temperature does not fall below 1,300 degrees Fahrenheit (°F). Periods when the cupola is off blast and for 15 minutes after going on blast from an off blast condition are not included in the 15-minute average.

(4) You must operate each combustion device applied to emissions from a scrap preheater subject to the emissions limit for VOHAP in paragraph (a)(9) of this section or from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section, such that the 3-hour average combustion zone temperature does not fall below the minimum level established during the initial or subsequent performance test.

(5) You must operate each wet acid scrubber applied to emissions from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section such that:

(i) The 3-hour average scrubbing liquid flow rate does not fall below the minimum level established during the initial or subsequent performance test; and

(ii) The 3-hour average pH of the scrubber blowdown, as measured by a continuous parameter monitoring system (CPMS), does not exceed 4.5 or the pH of the scrubber blowdown, as measured once every 8 hours during process operations, does not exceed 4.5.

(c) If you use a control device other than a baghouse, wet scrubber, wet acid scrubber, or combustion device, you must prepare and submit a monitoring plan containing the information listed in paragraphs (c)(1) through (5) of this section. The monitoring plan is subject to approval by the Administrator.

(1) A description of the device;

(2) Test results collected in accordance with §63.7732 verifying the performance of the device for reducing emissions of PM, total metal HAP, VOHAP, or TEA to the levels required by this subpart;

(3) A copy of the operation and maintenance plan required by §63.7710(b);

(4) A list of appropriate operating parameters that will be monitored to maintain continuous compliance with the applicable emissions limitation(s); and

(5) Operating parameter limits based on monitoring data collected during the performance test.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, Feb. 7, 2008]

Work Practice Standards

§ 63.7700 What work practice standards must I meet?

(a) For each segregated scrap storage area, bin or pile, you must either comply with the certification requirements in paragraph (b) of this section, or prepare and implement a plan for the selection and inspection of scrap according to the requirements in paragraph (c) of this section. You may have certain scrap subject to paragraph (b) of this section and other scrap subject to paragraph (c) of this section at your facility provided the scrap remains segregated until charge make-up.

(b) You must prepare and operate at all times according to a written certification that the foundry purchases and uses only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids. For the purpose of this paragraph (b), “free organic liquids” is defined as material that fails the paint filter test by EPA Method 9095A, “Paint Filter Liquids Test” (Revision 1, December 1996), as published in EPA Publication SW–846 “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (incorporated by reference—see §63.14). Any post-consumer engine blocks, post-consumer oil filters, or oily turnings that are processed and/or cleaned to the extent practicable such that the materials do not include lead components, mercury switches, chlorinated plastics, or free organic liquids can be included in this certification.

(c) You must prepare and operate at all times according to a written plan for the selection and inspection of iron and steel scrap to minimize, to the extent practicable, the amount of organics and HAP metals in the charge materials used by the iron and steel foundry. This scrap selection and inspection plan is subject to approval by the Administrator. You must keep a copy of the plan onsite and readily available to all plant personnel with materials acquisition or inspection duties. You must provide a copy of the material specifications to each of your scrap vendors. Each plan must include the information specified in paragraphs (c)(1) through (3) of this section.

(1) A materials acquisition program to limit organic contaminants according to the requirements in paragraph (c)(1)(i) or (ii) of this section, as applicable.

(i) For scrap charged to a scrap preheater, electric arc metal melting furnace, or electric induction metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of used oil filters, chlorinated plastic parts, organic liquids, and a program to ensure the scrap materials are drained of free liquids; or

(ii) For scrap charged to a cupola metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of chlorinated plastic, and a program to ensure the scrap materials are drained of free liquids.

(2) A materials acquisition program specifying that the scrap supplier remove accessible mercury switches from the trunks and hoods of any automotive bodies contained in the scrap and remove accessible lead components such as batteries and wheel weights. You must either obtain and maintain onsite a copy of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable, or document your attempts to obtain a copy of these procedures from the scrap suppliers servicing your area.

(3) Procedures for visual inspection of a representative portion, but not less than 10 percent, of all incoming scrap shipments to ensure the materials meet the specifications.

(i) The inspection procedures must identify the location(s) where inspections are to be performed for each type of shipment. Inspections may be performed at the scrap supplier's facility. The selected location(s) must provide a reasonable vantage point, considering worker safety, for visual inspection.

(ii) The inspection procedures must include recordkeeping requirements that document each visual inspection and the results.

(iii) The inspection procedures must include provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and limiting purchases from vendors whose shipments fail to meet specifications for more than three inspections in one calendar year.

(iv) If the inspections are performed at the scrap supplier's facility, the inspection procedures must include an explanation of how the periodic inspections ensure that not less than 10 percent of scrap purchased from each supplier is subject to inspection.

(d) For each furan warm box mold or core making line in a new or existing iron and steel foundry, you must use a binder chemical formulation that does not contain methanol as a specific ingredient of the catalyst formulation as determined by the Material Safety Data Sheet. This requirement does not apply to the resin portion of the binder system.

(e) For each scrap preheater at an existing iron and steel foundry, you must meet either the requirement in paragraph (e)(1) or (2) of this section. As an alternative to the requirement in paragraph (e)(1) or (2) of this section, you must meet the VOHAP emissions limit in §63.7690(a)(9).

(1) You must operate and maintain a gas-fired preheater where the flame directly contacts the scrap charged; or

(2) You must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section.

(f) For each scrap preheater at a new iron and steel foundry, you must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section. As an alternative to this requirement, you must meet the VOHAP emissions limit in §63.7690(a)(9).

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005; 73 FR 7218, Feb. 7, 2008]

Operation and Maintenance Requirements

§ 63.7710 What are my operation and maintenance requirements?

(a) As required by §63.6(e)(1)(i), you must always operate and maintain your iron and steel foundry, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

(b) You must prepare and operate at all times according to a written operation and maintenance plan for each capture and collection system and control device for an emissions source subject to a PM, metal HAP, TEA, or VOHAP emissions limit in §63.7690(a). Your operation and maintenance plan also must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. This operation and maintenance plan is subject to approval by the Administrator. Each plan must contain the elements described in paragraphs (b)(1) through (6) of this section.

(1) Monthly inspections of the equipment that is important to the performance of the total capture system (*i.e.,* pressure sensors, dampers, and damper switches). This inspection must include observations of the

physical appearance of the equipment (*e.g.,* presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan must also include requirements to repair the defect or deficiency as soon as practicable.

(2) Operating limits for each capture system for an emissions source subject to an emissions limit or standard for VOHAP or TEA in §63.7690(a)(8) through (11). You must establish the operating according to the requirements in paragraphs (b)(2)(i) through (iii) of this section.

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, you must use appropriate operating limit parameters that indicate the level of the ventilation draft and damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to: volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure. Any parameter for damper position setting may be used that indicates the duct damper position related to the fully open setting.

(ii) For each operating limit parameter selected in paragraph (b)(2)(i) of this section, designate the value or setting for the parameter at which the capture system operates during the process operation. If your operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that you may operate (*i.e.,* the operating limits with one furnace melting, two melting, as applicable to your plant).

(iii) Include documentation in your plan to support your selection of the operating limits established for your capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why you chose the parameter, a description of the method used to monitor the parameter according to the requirements of §63.7740(a), and the data used to set the value or setting for the parameter for each of your process configurations.

(3) Preventative maintenance plan for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(4) A site-specific monitoring plan for each bag leak detection system. For each bag leak detection system that operates on the triboelectric effect, the monitoring plan must be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document “Fabric Filter Bag Leak Detection Guidance” (EPA–454/R–98–015). This baghouse monitoring plan is subject to approval by the Administrator. The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan must address all of the items identified in paragraphs (b)(4)(i) through (v) 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 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.

(5) Corrective action plan for each baghouse. The plan must include the requirement that, in the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions taken may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

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

(vi) Making process changes.

(vii) Shutting down the process producing the PM emissions.

(6) Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless you determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited due to accessibility or safety issues. You must document and maintain records of this determination. The determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15 seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source more than 25 percent of the time are considered to be not ignitable.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, Feb. 7, 2008]

General Compliance Requirements

§ 63.7720 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart at all times, except during periods of startup, shutdown, or malfunction.

(b) During the period between the compliance date specified for your iron and steel foundry in §63.7683 and the date when applicable operating limits have been established during the initial performance test, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) You must develop a written startup, shutdown, and malfunction plan according to the provisions in §63.6(e)(3). The startup, shutdown, and malfunction plan also must specify what constitutes a shutdown of a cupola and how to determine that operating conditions are normal following startup of a cupola.

[69 FR 21923, Apr. 22, 2004, as amended at 71 FR 20468, Apr. 20, 2006]

Initial Compliance Requirements

§ 63.7730 By what date must I conduct performance tests or other initial compliance demonstrations?

(a) As required by §63.7(a)(2), you must conduct a performance test no later than 180 calendar days after the compliance date that is specified in §63.7683 for your iron and steel foundry to demonstrate initial compliance with each emissions limitation in §63.7690 that applies to you.

(b) For each work practice standard in §63.7700 and each operation and maintenance requirement in §63.7710 that applies to you where initial compliance is not demonstrated using a performance test, you must demonstrate initial compliance no later than 30 calendar days after the compliance date that is specified for your iron and steel foundry in §63.7683.

(c) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, you must demonstrate initial compliance with either the proposed emissions limit or the promulgated

emissions limit no later than October 19, 2004 or no later than 180 calendar days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, and you chose to comply with the proposed emissions limit when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emissions limit by October 19, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

§ 63.7731 When must I conduct subsequent performance tests?

(a) You must conduct subsequent performance tests to demonstrate compliance with all applicable PM or total metal HAP, VOHAP, and TEA emissions limitations in §63.7690 for your iron and steel foundry no less frequently than every 5 years and each time you elect to change an operating limit or to comply with a different alternative emissions limit, if applicable. The requirement to conduct performance tests every 5 years does not apply to an emissions source for which a continuous emissions monitoring system (CEMS) is used to demonstrate continuous compliance.

(b) You must conduct subsequent performance tests to demonstrate compliance with the opacity limit in §63.7690(a)(7) for your iron and steel foundry no less frequently than once every 6 months.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7219, Feb. 7, 2008]

§ 63.7732 What test methods and other procedures must I use to demonstrate initial compliance with the emissions limitations?

(a) You must conduct each performance test that applies to your iron and steel foundry based on your selected compliance alternative, if applicable, according to the requirements in §63.7(e)(1) and the conditions specified in paragraphs (b) through (i) of this section.

(b) To determine compliance with the applicable emissions limit for PM in §63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (b)(1) through (6) of this section.

(1) Determine the concentration of PM according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5, 5B, 5D, 5F, or 5I, as applicable, to determine the PM concentration. The PM concentration is determined using only the front-half (probe rinse and filter) of the PM catch.

(2) Collect a minimum sample volume of 60 dscf of gas during each PM sampling run. A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater. For a cupola metal melting furnace at an existing iron and steel foundry that is subject to the PM emissions limit in §63.7690(a)(ii), calculate the PM emissions rate in pounds of PM per ton (lb/ton) of metal charged using Equation 1 of this section:

$$EF_{PM} = C_{PM} \times \left(\frac{Q}{M_{charge}}\right) \times \left(\frac{t_{test}}{7,000}\right) \qquad \text{(Eq.1)}$$

Where:

EFPM= Mass emissions rate of PM, pounds of PM per ton (lb/ton) of metal charged;

CPM= Concentration of PM measured during performance test run, gr/dscf;

Q = Volumetric flow rate of exhaust gas, dry standard cubic feet per minute (dscfm);

Mcharge= Mass of metal charged during performance test run, tons;

ttest= Duration of performance test run, minutes; and

7,000 = Unit conversion factor, grains per pound (gr/lb).

(c) To determine compliance with the applicable emissions limit for total metal HAP in §63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (c)(1) through (6) of this section.

(1) Determine the concentration of total metal HAP according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 29 to determine the total metal HAP concentration.

(2) A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater during each performance test run and calculate the total metal HAP emissions rate (pounds of total metal HAP per ton (lb/ton) of metal charged) using Equation 2 of this section:

$$EF_{TMHAP} = C_{TMHAP} \times \left(\frac{Q}{M_{charge}}\right) \times \left(\frac{t_{test}}{7,000}\right) \qquad \text{(Eq. 2)}$$

Where:

EFTMHAP= Emissions rate of total metal HAP, pounds of total metal HAP per ton (lb/ton) of metal charged;

CTMHAP= Concentration of total metal HAP measured during performance test run, gr/dscf;

Q = Volumetric flow rate of exhaust gas, dscfm;

Mcharge= Mass of metal charged during performance test run, tons;

ttest= Duration of performance test run, minutes; and

7,000 = Unit conversion factor, gr/lb.

(d) To determine compliance with the opacity limit in §63.7690(a)(7) for fugitive emissions from buildings or structures housing any iron and steel foundry emissions source at the iron and steel foundry, follow the procedures in paragraphs (d)(1) and (2) of this section.

(1) Using a certified observer, conduct each opacity test according to the requirements in EPA Method 9 (40 CFR part 60, appendix A) and §63.6(h)(5). The certified observer may identify a limited number of openings or vents that appear to have the highest opacities and perform opacity observations on the identified openings or vents in lieu of performing observations for each opening or vent from the building or structure. Alternatively, a single opacity observation for the entire building or structure may be performed, if the fugitive release points afford such an observation.

(2) During testing intervals when PM performance tests, if applicable, are being conducted, conduct the opacity test such the opacity observations are recorded during the PM performance tests.

(e) To determine compliance with the applicable VOHAP emissions limit in §63.7690(a)(8) for a cupola metal melting furnace or in §63.7690(a)(9) for a scrap preheater, follow the test methods and procedures in paragraphs (e)(1) through (4) of this section.

(1) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of total gaseous nonmethane organics (TGNMO) or Method 25A to determine the concentration of total organic compounds (TOC), using hexane as the calibration gas.

(2) Determine the average VOHAP, TGNMO, or TOC concentration using a minimum of three valid test runs. Each test run must include a minimum of 60 continuous operating minutes.

(3) For a cupola metal melting furnace, correct the measured concentration of VOHAP, TGNMO, or TOC for oxygen content in the gas stream using Equation 3 of this section:

$$EF_{IMHAP} = C_{IMHAP} \times \left(\frac{Q}{M_{charge}}\right) \times \left(\frac{t_{test}}{7{,}000}\right) \qquad \text{(Eq. 2)}$$

Where:

CVOHAP= Concentration of VOHAP in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the concentration of TGNMO or TOC in ppmv as hexane as measured by Method 25 or 25A in 40 CFR part 60, appendix A; and

%O2= Oxygen concentration in gas stream, percent by volume (dry basis).

(4) For a cupola metal melting furnace, measure the combustion zone temperature of the combustion device with the CPMS required in §63.7740(d) during each sampling run in 15-minute intervals. Determine and record the 15-minute average of the three runs.

(f) Follow the applicable procedures in paragraphs (f)(1) through (3) of this section to determine compliance with the VOHAP emissions limit in §63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines.

(1) Follow these procedures to demonstrate compliance by direct measurement of total hydrocarbons (a surrogate for VOHAP) using a volatile organic compound (VOC) CEMS.

(i) Using the VOC CEMS required in §63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) for 180 continuous operating minutes. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Reduce the monitoring data to hourly averages as specified in §63.8(g)(2).

(iii) Compute and record the 3-hour average of the monitoring data.

(2) As an alternative to the procedures in paragraph (f)(1) of this section, you may demonstrate compliance with the VOHAP emissions limit in §63.7690(a)(10) by establishing a site-specific TOC emissions limit that is correlated to the VOHAP emissions limit according to the procedures in paragraph (f)(2)(i) through (ix) of this section.

(i) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraph (f)(2)(ii) through (vi) of this section.

(ii) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(iii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iv) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(v) Method 4 to determine the moisture content of the stack gas.

(vi) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of TGNMO using hexane as the calibration gas.

(vii) Using the CEMS required in §63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) during each of the Method 18 (or Method 25) sampling runs. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(viii) Calculate the average VOHAP (or TGNMO) concentration for the source test as the arithmetic average of the concentrations measured for the individual test runs, and determine the average concentration of total hydrocarbon (as hexane) as measured by the CEMS during all test runs.

(ix) Calculate the site-specific VOC emissions limit using Equation 4 of this section:

$$VOC_{limit} = 20 \times \frac{C_{VOHAP,avg}}{C_{CEM}} \qquad \text{(Eq. 4)}$$

Where:

CVOHAP,avg= Average concentration of VOHAP for the source test in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the average concentration of TGNMO for the source test in ppmv as hexane as measured by Method 25 in 40 CFR part 60, appendix A; and

CCEM= Average concentration of total hydrocarbons in ppmv as hexane as measured using the CEMS during the source test.

(3) For two or more exhaust streams from one or more automated conveyor and pallet cooling lines or automated shakeout lines, compute the flow-weighted average concentration of VOHAP emissions for each combination of exhaust streams using Equation 5 of this section:

$$C_w = \frac{\sum_{i=1}^{n} C_i Q_i}{\sum_{i=1}^{n} Q_i} \qquad \text{(Eq. 5)}$$

Where:

Cw= Flow-weighted concentration of VOHAP or VOC, ppmv (as hexane);

Ci= Concentration of VOHAP or VOC from exhaust stream “i”, ppmv (as hexane);

n = Number of exhaust streams sampled; and

Qi= Volumetric flow rate of effluent gas from exhaust stream “i,”, dscfm.

(g) To determine compliance with the emissions limit or standard in §63.7690(a)(11) for a TEA cold box mold or core making line, follow the test methods in 40 CFR part 60, appendix A, specified in paragraphs (g)(1) through (4) of this section.

(1) Determine the TEA concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (g)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. If you elect to meet the 99 percent reduction standard, sampling sites must be located both at the inlet to the control device and at the outlet of the control device prior to any releases to the atmosphere. If you elect to meet the concentration limit, the sampling site must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the TEA concentration. Alternatively, you may use NIOSH Method 2010 (incorporated by reference—see §63.14) to determine the TEA concentration provided the performance requirements outlined in section 13.1 of EPA Method 18 are satisfied. The sampling option and time must be sufficiently long such that either the TEA concentration in the field sample is at least 5 times the limit of detection for the analytical method or the test results calculated using the laboratory's reported analytical detection limit for the specific field samples are less than1/5of the applicable emissions limit. When using Method 18, the adsorbent tube approach, as described in section 8.2.4 of Method 18, may be required to achieve the necessary analytical detection limits. The sampling time must be at least 1 hour in all cases.

(2) If you use a wet acid scrubber, conduct the test as soon as practicable after adding fresh acid solution and the system has reached normal operating conditions.

(3) If you use a wet acid scrubber that is subject to the operating limit in §63.7690(b)(5)(ii) for pH level, determine the pH of the scrubber blowdown using the procedures in paragraph (g)(3)(i) or (ii) of this section.

(i) Measure the pH of the scrubber blowdown with the CPMS required in §63.7740(f)(2) during each TEA sampling run in intervals of no more than 15 minutes. Determine and record the 3-hour average; or

(ii) Measure and record the pH level using the probe and meter required in §63.7740(f)(2) once each sampling run. Determine and record the average pH level for the three runs.

(4) If you are subject to the 99 percent reduction standard, calculate the mass emissions reduction using Equation 6 of this section:

$$\%\,\text{reduction} = \frac{E_i - E_o}{E_i} \times 100\% \qquad \text{(Eq. 6)}$$

Where:

Ei= Mass emissions rate of TEA at control device inlet, kilograms per hour (kg/hr); and

Eo= Mass emissions rate of TEA at control device outlet, kg/hr.

(h) To determine compliance with the PM or total metal HAP emissions limits in §63.7690(a)(1) through (6) when one or more regulated emissions sources are combined with either another regulated emissions source subject to a different emissions limit or other non-regulated emissions sources, you may demonstrate compliance using one of the procedures in paragraphs (h)(1) through (3) of this section.

(1) Meet the most stringent applicable emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(2) Use the procedures in paragraphs (h)(2)(i) through (iii) of this section.

(i) Determine the volumetric flow rate of the individual regulated streams for which emissions limits apply.

(ii) Calculate the flow-weighted average emissions limit, considering only the regulated streams, using Equation 5 of this section, except Cwis the flow-weighted average emissions limit for PM or total metal HAP in the exhaust stream, gr/dscf; and Ciis the concentration of PM or total metal HAP in exhaust stream “i”, gr/dscf.

(iii) Meet the calculated flow-weighted average emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(3) Use the procedures in paragraphs (h)(3)(i) through (iii) of this section.

(i) Determine the PM or total metal HAP concentration of each of the regulated streams prior to the combination with other exhaust streams or control device.

(ii) Measure the flow rate and PM or total metal HAP concentration of the combined exhaust stream both before and after the control device and calculate the mass removal efficiency of the control device using Equation 6 of this section, except Eiis the mass emissions rate of PM or total metal HAP at the control device inlet, lb/hr and Eois the mass emissions rate of PM or total metal HAP at the control device outlet, lb/hr.

(iii) Meet the applicable emissions limit based on the calculated PM or total metal HAP concentration for the regulated emissions sources using Equation 7 of this section:

$$C_{released} = C_i \times \left(1 - \frac{\%\,reduction}{100}\right) \qquad (Eq.\ 7)$$

Where:

Creleased= Calculated concentration of PM (or total metal HAP) predicted to be released to the atmosphere from the regulated emissions source, gr/dscf; and

Ci= Concentration of PM (or total metal HAP) in the uncontrolled regulated exhaust stream, gr/dscf.

(i) To determine compliance with an emissions limit for situations when multiple sources are controlled by a single control device, but only one source operates at a time, or other situations that are not expressly considered in paragraphs (b) through (h) of this section, a site-specific test plan should be submitted to the Administrator for approval according to the requirements in §63.7(c)(2) and (3).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7219, Feb. 7, 2008]

§ 63.7733 What procedures must I use to establish operating limits?

(a) For each capture system subject to operating limits in §63.7690(b)(1)(ii), you must establish site-specific operating limits in your operation and maintenance plan according to the procedures in paragraphs (a)(1) through (3) of this section.

(1) Concurrent with applicable emissions and opacity tests, measure and record values for each of the operating limit parameters in your capture system operation and maintenance plan according to the monitoring requirements in §63.7740(a).

(2) For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position must be visually checked and recorded at the beginning and end of each run.

(3) Review and record the monitoring data. Identify and explain any times the capture system operated outside the applicable operating limits.

(b) For each wet scrubber subject to the operating limits in §63.7690(b)(2) for pressure drop and scrubber water flow rate, you must establish site-specific operating limits according to the procedures specified in paragraphs (b)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(c), measure and record the pressure drop and scrubber water flow rate in intervals of no more than 15 minutes during each PM test run.

(2) Compute and record the average pressure drop and average scrubber water flow rate for each valid sampling run in which the applicable emissions limit is met.

(c) For each combustion device applied to emissions from a scrap preheater or TEA cold box mold or core making line subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you must establish a site-specific operating limit according to the procedures specified in paragraphs (c)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(e), measure and record the combustion zone temperature during each sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average combustion zone temperature for each valid sampling run in which the applicable emissions limit is met.

(d) For each acid wet scrubber subject to the operating limit in §63.7690(b)(5), you must establish a site-specific operating limit for scrubbing liquid flow rate according to the procedures specified in paragraphs (d)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(f), measure and record the scrubbing liquid flow rate during each TEA sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average scrubbing liquid flow rate for each valid sampling run in which the applicable emissions limit is met.

(e) You may change the operating limits for a capture system, wet scrubber, acid wet scrubber, or combustion device if you meet the requirements in paragraphs (e)(1) through (3) of this section.

(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emissions limitation in §63.7690.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) through (d) of this section.

(f) You may use a previous performance test (conducted since December 22, 2002) to establish an operating limit provided the test meets the requirements of this subpart.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, Feb. 7, 2008]

§ 63.7734 How do I demonstrate initial compliance with the emissions limitations that apply to me?

(a) You have demonstrated initial compliance with the emissions limits in §63.7690(a) by meeting the applicable conditions in paragraphs (a)(1) through (11) of this section. When alternative emissions

limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.005 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.006 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0005 gr/dscf; or

(iii) The average PM mass emissions rate, determined according to the performance test procedures in §63.7732(b), did not exceed 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) The average total metal HAP mass emissions rate, determined according to the performance test procedures in §63.7732(c), did not exceed 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.001 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in §63.7732(b), did not exceed 0.010 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in §63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, the opacity of fugitive emissions from foundry operations discharged to the atmosphere, determined according to the performance test procedures in §63.7732(d), did not exceed 20 percent (6-minute average), except for one 6-minute average per hour that did not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, the average VOHAP concentration, determined according to the performance test procedures in §63.7732(e), did not exceed 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing iron and steel foundry that does not meet the work practice standards in §63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not meet the work practice standard in §63.7700(f), the average VOHAP concentration determined according to the performance test procedures in §63.7732(e), did not exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new foundry,

(i) You have reduced the data from the CEMS to 3-hour averages according to the performance test procedures in §63.7732(f)(1) or (2); and

(ii) The 3-hour flow-weighted average VOHAP concentration, measured according to the performance test procedures in §63.7332(f)(1) or (2), did not exceed 20 ppmv.

(11) For each TEA cold box mold or core making line in a new or existing iron and steel foundry, the average TEA concentration, determined according to the performance test procedures in §63.7732(g), did not exceed 1 ppmv or was reduced by 99 percent.

(b) You have demonstrated initial compliance with the operating limits in §63.7690(b) if:

(1) For each capture system subject to the operating limit in §63.7690(b)(1)(ii),

(i) You have established appropriate site-specific operating limits in your operation and maintenance plan according to the requirements in §63.7710(b); and

(ii) You have a record of the operating parameter data measured during the performance test in accordance with §63.7733(a); and

(2) For each wet scrubber subject to the operating limits in §63.7690(b)(2) for pressure drop and scrubber water flow rate, you have established appropriate site-specific operating limits and have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with §63.7733(b).

(3) For each combustion device subject to the operating limit in §63.7690(b)(3) for combustion zone temperature, you have a record of the combustion zone temperature measured during the performance test in accordance with §63.7732(e)(4).

(4) For each combustion device subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you have established appropriate site-specific operating limits and have a record of the combustion zone temperature measured during the performance test in accordance with §63.7733(c).

(5) For each acid wet scrubber subject to the operating limits in §63.7690(b)(5) for scrubbing liquid flow rate and scrubber blowdown pH,

(i) You have established appropriate site-specific operating limits for the scrubbing liquid flow rate and have a record of the scrubbing liquid flow rate measured during the performance test in accordance with §63.7733(d); and

(ii) You have a record of the pH of the scrubbing liquid blowdown measured during the performance test in accordance with §63.7732(g)(3).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, Feb. 7, 2008]

§ 63.7735 How do I demonstrate initial compliance with the work practice standards that apply to me?

(a) For each iron and steel foundry subject to the certification requirement in §63.7700(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that: “At all times, your foundry will purchase and use only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids.”

(b) For each iron and steel foundry subject to the requirements in §63.7700(c) for a scrap inspection and selection plan, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted a written plan to the Administrator for approval according to the requirements in §63.7700(c); and

(2) You will operate at all times according to the plan requirements.

(c) For each furan warm box mold or core making line in a new or existing foundry subject to the work practice standard in §63.7700(d), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You will meet the no methanol requirement for the catalyst portion of each binder chemical formulation; and

(2) You have records documenting your certification of compliance, such as a material safety data sheet (provided that it contains appropriate information), a certified product data sheet, or a manufacturer's hazardous air pollutant data sheet, onsite and available for inspection.

(d) For each scrap preheater at an existing iron and steel foundry subject to the work practice standard in §63.7700(e)(1) or (2), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have installed a gas-fired preheater where the flame directly contacts the scrap charged, you will operate and maintain each gas-fired scrap preheater such that the flame directly contacts the scrap charged, and you have records documenting your certification of compliance that are onsite and available for inspection; or

(2) You will charge only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

(e) For each scrap preheater at a new iron and steel foundry subject to the work practice standard in §63.7700(f), you have demonstrated initial compliance if you have certified in your notification of compliance status that you will charge only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005]

§ 63.7736 How do I demonstrate initial compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system subject to an operating limit in §63.7690(b), you have demonstrated initial compliance if you have met the conditions in paragraphs (a)(1) and (2) of this section.

(1) You have certified in your notification of compliance status that:

(i) You have submitted the capture system operation and maintenance plan to the Administrator for approval according to the requirements of §63.7710(b); and

(ii) You will inspect, operate, and maintain each capture system according to the procedures in the plan.

(2) You have certified in your performance test report that the system operated during the test at the operating limits established in your operation and maintenance plan.

(b) For each control device subject to an operating limit in §63.7690(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the control device operation and maintenance plan to the Administrator for approval according to the requirements of §63.7710(b); and

(2) You will inspect, operate, and maintain each control device according to the procedures in the plan.

(c) For each bag leak detection system, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the bag leak detection system monitoring information to the Administrator within the written O&M plan for approval according to the requirements of §63.7710(b);

(2) You will inspect, operate, and maintain each bag leak detection system according to the procedures in the plan; and

(3) You will follow the corrective action procedures for bag leak detection system alarms according to the requirements in the plan.

(d) For each pouring area and pouring station in a new or existing foundry, you have demonstrated initial compliance if you have certified in your notification of compliance status report that:

(1) You have submitted the mold vent ignition plan to the Administrator for approval according to the requirements in §63.7710(b); and

(2) You will follow the procedures for igniting mold vent gases according to the requirements in the plan.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, Feb. 7, 2008]

Continuous Compliance Requirements

§ 63.7740 What are my monitoring requirements?

(a) For each capture system subject to an operating limit in §63.7690(b)(1), you must install, operate, and maintain a CPMS according to the requirements in §63.7741(a) and the requirements in paragraphs (a)(1) and (2) of this section.

(1) If you use a flow measurement device to monitor the operating limit parameter, you must at all times monitor the hourly average rate (*e.g.,* the hourly average actual volumetric flow rate through each separately ducted hood or the average hourly total volumetric flow rate at the inlet to the control device).

(2) Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, you must make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must at all times monitor the relative change in PM loadings using a bag leak detection system according to the requirements in §63.7741(b).

(c) For each baghouse, regardless of type, that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must conduct inspections at their specified frequencies according to the requirements specified in paragraphs (c)(1) through (8) of this section.

(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

(3) Check the compressed air supply for pulse-jet baghouses each day.

(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.

(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or lying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(d) For each wet scrubber subject to the operating limits in §63.7690(b)(2), you must at all times monitor the 3-hour average pressure drop and scrubber water flow rate using CPMS according to the requirements in §63.7741(c).

(e) For each combustion device subject to the operating limit in §63.7690(b)(3), you must at all times monitor the 15-minute average combustion zone temperature using a CPMS according to the requirements of §63.7741(d).

(f) For each combustion device subject to the operating limit in §63.7690(b)(4), you must at all times monitor the 3-hour average combustion zone temperature using CPMS according to the requirements in §63.7741(d).

(g) For each wet acid scrubber subject to the operating limits in §63.7690(b)(5),

(1) You must at all times monitor the 3-hour average scrubbing liquid flow rate using CPMS according to the requirements of §63.7741(e)(1); and

(2) You must at all times monitor the 3-hour average pH of the scrubber blowdown using CPMS according to the requirements in §63.7741(e)(2) or measure and record the pH of the scrubber blowdown once per production cycle using a pH probe and meter according to the requirements in §63.7741(e)(3).

(h) For one or more automated conveyor and pallet cooling lines and automated shakeout lines at a new iron and steel foundry subject to the VOHAP emissions limit in §63.7690(a)(10), you must at all times monitor the 3-hour average VOHAP concentration using a CEMS according to the requirements of §63.7741(g).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, Feb. 7, 2008]

§ 63.7741 What are the installation, operation, and maintenance requirements for my monitors?

(a) For each capture system subject to an operating limit in §63.7690(b)(1), you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a)(1) through (3) of this section.

(1) If you use a flow measurement device to monitor an operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(1)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment such as straightening vanes in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) If you use a pressure measurement device to monitor the operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(2)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in or as close as possible to a position that provides a representative measurement of the pressure and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a “non-clogging” pressure tap is used, check for pluggage monthly.

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) Record the results of each inspection, calibration, and validation check.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (b)(1) through (7) of this section.

(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

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

(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over the alarm set point established in the operation and maintenance plan, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) The initial adjustment of the system must, at minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(5) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set point, or alarm delay time without approval from the Administrator. Except, once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonable effects including temperature and humidity according to the procedures in the operation and maintenance plan required by §63.7710(b).

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

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

(c) For each wet scrubber subject to the operating limits in §63.7690(b)(2), you must install and maintain CPMS to measure and record the pressure drop and scrubber water flow rate according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) For each CPMS for pressure drop you must:

(i) Locate the pressure sensor in or as close as possible to a position that provides a representative measurement of the pressure drop and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a “non-clogging” pressure tap is used, check for pluggage monthly.

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) For each CPMS for scrubber liquid flow rate, you must:

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually according to the manufacturer's instructions.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(d) For each combustion device subject to the operating limit in §63.7690(b)(3) or (4), you must install and maintain a CPMS to measure and record the combustion zone temperature according to the requirements in paragraphs (d)(1) through (8) of this section.

(1) Locate the temperature sensor in a position that provides a representative temperature.

(2) For a noncryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 0.75 percent of the temperature value, whichever is larger.

(3) For a cryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 2 percent of the temperature value, whichever is larger.

(4) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(5) If you use a chart recorder, it must have a sensitivity in the minor division of at least 20 °F.

(6) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, conduct a temperature sensor validation check, in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 16.7 °C of the process temperature sensor's reading.

(7) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range, or install a new temperature sensor.

(8) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(e) For each wet acid scrubber subject to the operating limits in §63.7690(b)(5), you must:

(1) Install and maintain CPMS to measure and record the scrubbing liquid flow rate according to the requirements in paragraph (c)(2) of this section; and

(2) Install and maintain CPMS to measure and record the pH of the scrubber blowdown according to the requirements in paragraph (e)(2)(i) through (iv) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of the pH and that minimizes or eliminates internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.1 pH or a transducer with a minimum measurement sensitivity of 5 percent of the pH range.

(iii) Check gauge calibration quarterly and transducer calibration monthly using a manual pH gauge.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) As an alternative to the CPMS required in paragraph (e)(2) of this section, you may use a pH probe to extract a sample for analysis by a pH meter that meets the requirements in paragraphs (e)(3)(i) through (iii) of this section.

(i) The pH meter must have a range of at least 1 to 5 or more;

(ii) The pH meter must have an accuracy of ±0.1; and

(iii) The pH meter must have a resolution of at least 0.1 pH.

(f) You must operate each CPMS used to meet the requirements of this subpart according to the requirements specified in paragraphs (f)(1) through (3) of this section.

(1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of three of the required four data points to constitute a valid hour of data.

(2) Each CPMS must have valid hourly data for 100 percent of every averaging period.

(3) Each CPMS must determine and record the hourly average of all recorded readings and the 3-hour average of all recorded readings.

(g) For each automated conveyor and pallet cooling line and automated shakeout line at a new iron and steel foundry subject to the VOHAP emissions limit in §63.7690(a)(10), you must install, operate, and maintain a CEMS to measure and record the concentration of VOHAP emissions according to the requirements in paragraphs (g)(1) through (3) of this section.

(1) You must install, operate, and maintain each CEMS according to Performance Specification 8 in 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each CEMS according to the requirements of §63.8 and Performance Specification 8 in 40 CFR part 60, appendix B.

(3) You must operate each CEMS according to the requirements specified in paragraph (g)(3)(i) through (iv) of this section.

(i) 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.

(ii) You must reduce CEMS data as specified in §63.8(g)(2).

(iii) Each CEMS must determine and record the 3-hour average emissions using all the hourly averages collected for periods during which the CEMS is not out-of-control.

(iv) Record the results of each inspection, calibration, and validation check.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, Feb. 7, 2008]

§ 63.7742 How do I monitor and collect data to demonstrate continuous compliance?

(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) any time a source of emissions is operating.

(b) 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 emissions or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

§ 63.7743 How do I demonstrate continuous compliance with the emissions limitations that apply to me?

(a) You must demonstrate continuous compliance by meeting the applicable conditions in paragraphs (a)(1) through (12) of this section. When alternative emissions limitations are provided for a given emissions source, you must comply with the alternative emissions limitation most recently selected as your compliance alternative.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.005 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.006 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0005 gr/dscf; or

(iii) Maintaining the average PM mass emissions rate at or below 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) Maintaining the average total metal HAP mass emissions rate at or below 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at new iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.001 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.010 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, maintaining the opacity of any fugitive emissions from foundry operations discharged to the atmosphere at or below 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing new iron and steel foundry that does not comply with the work practice standard in §63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not comply with the work practice standard in §63.7700(f), maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines or automated shakeout lines that use a sand mold system at a new iron and steel foundry,

(i) Maintaining the 3-hour flow-weighted average VOHAP concentration in the exhaust stream at or below 20 ppmv;

(ii) Inspecting and maintaining each CEMS according to the requirements of §63.7741(g) and recording all information needed to document conformance with these requirements; and

(iii) Collecting and reducing monitoring data for according to the requirements of §63.7741(g) and recording all information needed to document conformance with these requirements.

(11) For each TEA cold box mold or core making line at a new or existing iron and steel foundry, maintaining a 99 percent reduction in the VOHAP concentration in the exhaust stream or maintaining the average VOHAP concentration in the exhaust stream at or below 1 ppmv.

(12) Conducting subsequent performance tests at least every 5 years for each emissions source subject to an emissions limit for PM, total metal HAP, VOHAP, or TEA in §63.7690(a) and subsequent performance tests at least every 6 months for each building or structure subject to the opacity limit in §63.7690(a)(7).

(b) You must demonstrate continuous compliance for each capture system subject to an operating limit in §63.7690(b)(1) by meeting the requirements in paragraphs (b)(1) and (2) of this section.

(1) Operating the capture system at or above the lowest values or settings established for the operating limits in your operation and maintenance plan; and

(2) Monitoring the capture system according to the requirements in §63.7740(a) and collecting, reducing, and recording the monitoring data for each of the operating limit parameters according to the applicable requirements in this subpart.

(c) For each baghouse,

(1) Inspecting and maintaining each baghouse according to the requirements of §63.7740(c)(1) through (8) and recording all information needed to document conformance with these requirements; and

(2) If the baghouse is equipped with a bag leak detection system, maintaining records of the times the bag leak detection system sounded, 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) For each wet scrubber that is subject to the operating limits in §63.7690(b)(2), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average pressure drop and 3-hour average scrubber water flow rate at levels no lower than those established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(c) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for pressure drop and scrubber water flow rate according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(e) For each combustion device that is subject to the operating limit in §63.7690(b)(3), you must demonstrate continuous compliance by:

(1) Maintaining the 15-minute average combustion zone temperature at a level no lower than 1,300 °F;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(f) For each combustion device that is subject to the operating limit in §63.7690(b)(4), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average combustion zone temperature at a level no lower that established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(g) For each acid wet scrubber subject to the operating limits in §63.7690(b)(5), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average scrubbing liquid flow rate at a level no lower than the level established during the initial or subsequent performance test;

(2) Maintaining the 3-hour average pH of the scrubber blowdown at a level no higher than 4.5 (if measured by a CPMS) or maintaining the pH level of the scrubber blowdown during each production shift no higher than 4.5;

(3) Inspecting and maintaining each CPMS according to the requirements of §63.7741(e) and recording all information needed to document conformance with these requirements; and

(4) Collecting and reducing monitoring data for scrubbing liquid flow rate and scrubber blowdown pH according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements. If the pH level of the scrubber blowdown is measured by a probe and meter, you must demonstrate continuous compliance by maintaining records that document the date, time, and results of each sample taken for each production shift.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, Feb. 7, 2008]

§ 63.7744 How do I demonstrate continuous compliance with the work practice standards that apply to me?

(a) You must maintain records that document continuous compliance with the certification requirements in §63.7700(b) or with the procedures in your scrap selection and inspection plan required in §63.7700(c). Your records documenting compliance with the scrap selection and inspection plan must include a copy (kept onsite) of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.

(b) You must keep records of the chemical composition of all catalyst binder formulations applied in each furan warm box mold or core making line at a new or existing iron and steel foundry to demonstrate continuous compliance with the requirements in §63.7700(d).

(c) For a scrap preheater at an existing iron and steel foundry, you must operate and maintain each gas-fired preheater such that the flame directly contacts the scrap charged to demonstrate continuous compliance with the requirement §63.7700(e)(1). If you choose to meet the work practice standard in §63.7700(e)(2), you must keep records to document that the scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b).

(d) For a scrap preheater at a new iron and steel foundry, you must keep records to document that each scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) to demonstrate continuous compliance with the requirement in §63.7700(f).

§ 63.7745 How do I demonstrate continuous compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system and control device for an emissions source subject to an emissions limit in §63.7690(a), you must demonstrate continuous compliance with the operation and maintenance requirements of §63.7710 by:

(1) Making monthly inspections of capture systems and initiating corrective action according to §63.7710(b)(1) and recording all information needed to document conformance with these requirements;

(2) Performing preventative maintenance for each control device according to the preventive maintenance plan required by §63.7710(b)(3) and recording all information needed to document conformance with these requirements;

(3) Operating and maintaining each bag leak detection system according to the site-specific monitoring plan required by §63.7710(b)(4) and recording all information needed to demonstrate conformance with these requirements;

(4) Initiating and completing corrective action for a bag leak detection system alarm according to the corrective action plan required by §63.7710(b)(5) and recording all information needed to document conformance with these requirements; and

(5) Igniting gases from mold vents according to the procedures in the plan required by §63.7710(b)(6). (Any instance where you fail to follow the procedures is a deviation that must be included in your semiannual compliance report.)

(b) You must maintain a current copy of the operation and maintenance plans required by §63.7710(b) onsite and available for inspection upon request. You must keep the plans for the life of the iron and steel foundry or until the iron and steel foundry is no longer subject to the requirements of this subpart.

§ 63.7746 What other requirements must I meet to demonstrate continuous compliance?

(a) *Deviations.* You must report each instance in which you did not meet each emissions limitation in §63.7690 (including each operating limit) that applies to you. This requirement includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each work practice standard in §63.7700 and each operation and maintenance requirement of §63.7710 that applies to you. These instances are deviations from the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements of §63.7751.

(b) *Startups, shutdowns, and malfunctions.* (1) Consistent with the requirements of §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with §63.6(e)(1).

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations according to the provisions in §63.6(e).

[69 FR 21923, Apr. 22, 2004, as amended at 71 FR 20468, Apr. 20, 2006]

§ 63.7747 How do I apply for alternative monitoring requirements for a continuous emissions monitoring system?

(a) You may request an alternative monitoring method to demonstrate compliance with the VOHAP emissions limits in §63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines at a new iron and steel foundry according to the procedures in this section.

(b) You can request approval to use an alternative monitoring method in the notification of construction or reconstruction for new sources, or at any time.

(c) You must submit a monitoring plan that includes a description of the control technique or pollution prevention technique, a description of the continuous monitoring system or method including appropriate operating parameters that will be monitored, test results demonstrating compliance with the emissions limit, operating limit(s) (if applicable) determined according to the test results, and the frequency of measuring and recording to establish continuous compliance. If applicable, you must also include operation and maintenance requirements for the monitors.

(d) The monitoring plan is subject to approval by the Administrator. Use of the alternative monitoring method must not begin until approval is granted by the Administrator.

Notifications, Reports, and Records

§ 63.7750 What notifications must I submit and when?

(a) You must submit all of the notifications required by §§63.6(h)(4) and (5), 63.7(b) and (c); 63.8(e); 63.8(f)(4) and (6); 63.9(b) through (h) that apply to you by the specified dates.

(b) As specified in §63.9(b)(2), if you start up your iron and steel foundry before April 22, 2004, you must submit your initial notification no later than August 20, 2004.

(c) If you start up your new iron and steel foundry on or after April 22, 2004, you must submit your initial notification no later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by §63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration, you must submit a notification of compliance status according to the requirements of §63.9(h)(2)(ii). For opacity performance tests, the notification of compliance status may be submitted with the semiannual compliance report in §63.7751(a) and (b) or the semiannual part 70 monitoring report in §63.7551(d).

(1) For each initial compliance demonstration that does not include a performance test, you must submit the notification of compliance status before the close of business on the 30th calendar day following completion of the initial compliance demonstration.

(2) For each initial compliance demonstration that does include a performance test, you must submit the notification of compliance status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in §63.10(d)(2).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, Feb. 7, 2008]

§ 63.7751 What reports must I submit and when?

(a) Compliance report due dates. Unless the Administrator has approved a different schedule, you must submit a semiannual compliance report to your permitting authority according to the requirements specified in paragraphs (a)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your iron and steel foundry by §63.7683 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your iron and steel foundry.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance report is due.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent 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.

(5) For each iron and steel foundry that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 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 the dates specified in paragraphs (a)(1) through (4) of this section.

(b) Compliance report contents. Each compliance report must include the information specified in paragraphs (b)(1) through (3) of this section and, as applicable, paragraphs (b)(4) through (8) of this section.

(1) Company name and address.

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

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

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took action consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in §63.10(d)(5)(i).

(5) If there were no deviations from any emissions limitations (including operating limit), work practice standards, or operation and maintenance requirements, a statement that there were no deviations from the emissions limitations, work practice standards, or operation and maintenance requirements during the reporting period.

(6) If there were no periods during which a continuous monitoring system (including a CPMS or CEMS) was out-of-control as specified by §63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(7) For each deviation from an emissions limitation (including an operating limit) that occurs at an iron and steel foundry for which you are not using a continuous monitoring system (including a CPMS or CEMS) to comply with an emissions limitation or work practice standard required in this subpart, the compliance report must contain the information specified in paragraphs (b)(1) through (4) and (b)(7)(i) and (ii) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each emissions source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.

(8) For each deviation from an emissions limitation (including an operating limit) or work practice standard occurring at an iron and steel foundry where you are using a continuous monitoring system (including a CPMS or CEMS) to comply with the emissions limitation or work practice standard in this subpart, you must include the information specified in paragraphs (b)(1) through (4) and (b)(8)(i) through (xi) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration that each continuous monitoring system was out-of-control, including the information in §63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the process units.

(ix) A brief description of the continuous monitoring system.

(x) The date of the latest continuous monitoring system certification or audit.

(xi) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(c) Immediate startup, shutdown, and malfunction report. If you had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and

malfunction plan and the source exceeds any applicable emissions limitation in §63.7690, you must submit an immediate startup, shutdown, and malfunction report according to the requirements of §63.10(d)(5)(ii).

(d) Part 70 monitoring report. If you have obtained a title V operating permit for an iron and steel foundry pursuant to 40 CFR part 70 or 40 CFR part 71, you 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 you submit a compliance report for an iron and steel foundry 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 the required information concerning deviations from any emissions limitation or operation and maintenance requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an iron and steel foundry to your permitting authority.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, Feb. 7, 2008]

§ 63.7752 What records must I keep?

(a) You must keep the records specified in paragraphs (a)(1) through (4) 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 requirements of §63.10(b)(2)(xiv).

(2) The records specified in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

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

(4) Records of the annual quantity of each chemical binder or coating material used to coat or make molds and cores, the Material Data Safety Sheet or other documentation that provides the chemical composition of each component, and the annual quantity of HAP used in these chemical binder or coating materials at the foundry as calculated from the recorded quantities and chemical compositions (from Material Data Safety Sheets or other documentation).

(b) You must keep the following records for each CEMS.

(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) Request for alternatives to relative accuracy tests for CEMS as required in §63.8(f)(6)(i).

(4) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required by §§63.7743, 63.7744, and 63.7745 to show continuous compliance with each emissions limitation, work practice standard, and operation and maintenance requirement that applies to you.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, Feb. 7, 2008]

§ 63.7753 In what form and for how long must I keep my records?

(a) You must keep your records in a form suitable and readily available for expeditious review, according to the requirements of §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 onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to the requirements in §63.10(b)(1). You can keep the records for the previous 3 years offsite.

Other Requirements and Information

§ 63.7760 What parts of the General Provisions apply to me?

Table 1 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

§ 63.7761 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (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, in addition to 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 if implementation and enforcement of 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 cannot be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to non-opacity emissions limitations in §63.7690 and work practice standards in §63.7700 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.

Definitions

§ 63.7765 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA), in §63.2, and in this section.

Automated conveyor and pallet cooling line means any dedicated conveyor line or area used for cooling molds received from pouring stations.

Automated shakeout line means any mechanical process unit designed for and dedicated to separating a casting from a mold. These mechanical processes include, but are not limited to, shaker decks, rotary separators, and high-frequency vibration units. Automated shakeout lines do not include manual processes for separating a casting from a mold, such as personnel using a hammer, chisel, pick ax, sledge hammer, or jackhammer.

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

Binder chemical means a component of a system of chemicals used to bind sand together into molds, mold sections, and cores through chemical reaction as opposed to pressure.

Capture system means the collection of components used to capture gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

Cold box mold or core making line means a mold or core making line in which the formed aggregate is hardened by catalysis with a gas.

Combustion device means an afterburner, thermal incinerator, or scrap preheater.

Conveyance means the system of equipment that is designed to capture pollutants at the source, convey them through ductwork, and exhaust them using forced ventilation. A conveyance may, but does not necessarily include, control equipment designed to reduce emissions of the pollutants. Emissions that are released through windows, vents, or other general building ventilation or exhaust systems are not considered to be discharged through a conveyance.

Cooling means the process of molten metal solidification within the mold and subsequent temperature reduction prior to shakeout.

Cupola means a vertical cylindrical shaft furnace that uses coke and forms of iron and steel such as scrap and foundry returns as the primary charge components and melts the iron and steel through combustion of the coke by a forced upward flow of heated air.

Deviation means any instance in which an affected source or an owner or operator of such an affected source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emissions limitation (including operating limits), work practice standard, or operation and maintenance requirement;

(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 iron and steel foundry required to obtain such a permit; or

(3) Fails to meet any emissions limitation (including operating limits) or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

A deviation is not always a violation. The determination of whether a deviation constitutes a violation of the standard is up to the discretion of the entity responsible for enforcement of the standards.

Electric arc furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted through resistance heating by an electric current flowing through the arcs formed between the electrodes and the surface of the metal and also flowing through the metal between the arc paths.

Electric induction furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted though resistance heating by an electric current that is induced in the metal by passing an alternating current through a coil surrounding the metal charge or surrounding a pool of molten metal at the bottom of the vessel.

Emissions limitation means any emissions limit or operating limit.

Exhaust stream means gases emitted from a process through a conveyance as defined in this subpart.

Free organic liquids means material that fails the paint filter test by EPA Method 9095A (incorporated by reference—see §63.14). That is, if any portion of the material passes through and drops from the filter within the 5-minute test period, the material contains free liquids.

Fresh acid solution means a sulfuric acid solution used for the control of triethylamine emissions that has a pH of 2.0 or less.

Fugitive emissions means any pollutant released to the atmosphere that is not discharged through a *conveyance* as defined in this subpart.

Furan warm box mold or core making line means a mold or core making line in which the binder chemical system used is that system commonly designated as a furan warm box system by the foundry industry.

Hazardous air pollutant means any substance on the list originally established in 112(b)(1) of the CAA and subsequently amended as published in the *Code of Federal Regulations.*

Iron and steel foundry means a facility or portion of a facility that melts scrap, ingot, and/or other forms of iron and/or steel and pours the resulting molten metal into molds to produce final or near final shape products for introduction into commerce. Research and development facilities and operations that only produce non-commercial castings are not included in this definition.

Metal melting furnace means a cupola, electric arc furnace, or electric induction furnace that converts scrap, foundry returns, and/or other solid forms of iron and/or steel to a liquid state. This definition does not include a holding furnace, an argon oxygen decarburization vessel, or ladle that receives molten metal from a metal melting furnace, to which metal ingots or other material may be added to adjust the metal chemistry.

Mold or core making line means the collection of equipment that is used to mix an aggregate of sand and binder chemicals, form the aggregate into final shape, and harden the formed aggregate. This definition does not include a line for making green sand molds or cores.

Mold vent means an intentional opening in a mold through which gases containing pyrolysis products of organic mold and core constituents produced by contact with or proximity to molten metal normally escape the mold during and after metal pouring.

Off blast means those periods of cupola operation when the cupola is not actively being used to produce molten metal. Off blast conditions include cupola startup when air is introduced to the cupola to preheat the sand bed and other cupola startup procedures as defined in the startup, shutdown, and malfunction plan. Off blast conditions also include idling conditions when the blast air is turned off or down to the point that the cupola does not produce additional molten metal.

On blast means those periods of cupola operation when combustion (blast) air is introduced to the cupola furnace and the furnace is capable of producing molten metal. On blast conditions are characterized by both blast air introduction and molten metal production.

Pouring area means an area, generally associated with floor and pit molding operations, in which molten metal is brought to each individual mold. Pouring areas include all pouring operations that do not meet the definition of a pouring station.

Pouring station means the fixed location to which molds are brought in a continuous or semicontinuous manner to receive molten metal, after which the molds are moved to a cooling area.

Responsible official means responsible official as defined in §63.2.

Scrap preheater means a vessel or other piece of equipment in which metal scrap that is to be used as melting furnace feed is heated to a temperature high enough to eliminate volatile impurities or other tramp materials by direct flame heating or similar means of heating. Scrap dryers, which solely remove moisture from metal scrap, are not considered to be scrap preheaters for purposes of this subpart.

Scrubber blowdown means liquor or slurry discharged from a wet scrubber that is either removed as a waste stream or processed to remove impurities or adjust its composition or pH before being returned to the scrubber.

Total metal HAP means, for the purposes of this subpart, the sum of the concentrations of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium as measured by EPA Method 29 (40 CFR part 60, appendix A). Only the measured concentration of the listed analytes that are present at concentrations exceeding one-half the quantitation limit of the analytical method are to be used in the sum. If any of the analytes are not detected or are detected at concentrations less than one-half the quantitation limit of the analytical method, the concentration of those analytes will be assumed to be zero for the purposes of calculating the total metal HAP for this subpart.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005; 73 FR 7222, Feb. 7, 2008]

Table 1 to Subpart EEEEE of Part 63—Applicability of General Provisions to Subpart EEEEE

[As stated in §63.7760, you must meet each requirement in the following table that applies to you.]

Citation	Subject	Applies to Subpart EEEEE?	Explanation
63.1	Applicability	Yes	
63.2	Definitions	Yes	
63.3	Units and abbreviations	Yes	
63.4	Prohibited activities	Yes	
63.5	Construction/reconstruction	Yes	
63.6(a)–(g)	Compliance with standards and maintenance requirements	Yes	
63.6(h)	Opacity and visible emissions standards	Yes	
63.6(i)–(j)	Compliance extension and Presidential compliance exemption	Yes	
63.7(a)(1)–(a)(2)	Applicability and performance test dates	No	Subpart EEEEE specifies applicability and performance test dates.
63.7(a)(3), (b)–(h)	Performance testing requirements	Yes	
63.8(a)(1)–(a)(3), (b), (c)(1)–(c)(3), (c)(6)–(c)(8), (d), (e), (f)(1)–(f)(6), (g)(1)–(g)(4)	Monitoring requirements	Yes	Subpart EEEEE specifies requirements for alternative monitoring systems.
63.8(a)(4)	Additional monitoring requirements for control devices in §63.11	No	Subpart EEEEE does not require flares.
63.8(c)(4)	Continuous monitoring system (CMS) requirements	No	Subpart EEEEE specifies requirements for operation of CMS and CEMS.
63.8(c)(5)	Continuous opacity monitoring system (COMS) Minimum Procedures	No	Subpart EEEEE does not require COMS.
63.8(g)(5)	Data reduction	No	Subpart EEEEE specifies data reduction requirements.
63.9	Notification requirements	Yes	Except: for opacity performance tests, Subpart EEEEE allows the notification of compliance status to be submitted with the semiannual compliance report or the semiannual part 70 monitoring report.
63.10(a)–(b), (c)(1)–(6), (c)(9)–(15), (d)(1)–(2), (e)(1)–(2), (f)	Recordkeeping and reporting requirements	Yes	Additional records for CMS in §63.10(c)(1)–(6), (9)–(15) apply only to CEMS.
63.10(c)(7)–(8)	Records of excess emissions and parameter monitoring exceedances for CMS	No	Subpart EEEEE specifies records requirements.

Citation	Subject	Applies to Subpart EEEEE?	Explanation
63.10(d)(3)	Reporting opacity or visible emissions observations	Yes	
63.10(e)(3)	Excess emissions reports	No	Subpart EEEEE specifies reporting requirements.
63.10(e)(4)	Reporting COMS data	No	Subpart EEEEE data does not require COMS.
63.11	Control device requirements	No	Subpart EEEEE does not require flares.
63.12	State authority and delegations	Yes	
63.13–63.15	Addresses of State air pollution control agencies and EPA regional offices. Incorporation by reference. Availability of information and confidentiality	Yes	

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7223, Feb. 7, 2008]

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Prevention of Significant Deterioration (PSD) and Part 70 Operating Permit

Source Description and Location

Source Name:	Metal Technologies Auburn, LLC
Source Location:	1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address:	1537 West Auburn Drive, Auburn, Indiana 46706
County:	DeKalb
SIC Code:	3321
Part 70 Permit No.:	T033-21760-00042
Permit Reviewer:	ERG/BS

The Office of Air Quality (OAQ) has reviewed a Part 70 Operating Permit application from Metal Technologies Auburn, LLC ("MTA") relating to the operation of a stationary gray iron foundry.

The source was previously owned by Auburn Foundry, was referred to as Plant #2, and was acquired by MTA in 2005. Transfer of Ownership is documented in AA 033-21352-00042, issued on July 12, 2005.

Source Definition

Auburn Foundry used to own and operate two plants in Auburn, Indiana:

(1) Plant 1 was located at 635 West 11th Street, Auburn, Indiana 46706; and

(2) Plant 2 was located at 2278 West County Road 48, Auburn IN 46706.

These plants were previously determined to be separate and independent sources and were permitted accordingly.

Plant 1 had a source ID of 033-00002 and ceased operations as of December 16, 2004. Plant 2 has a source ID of 033-00042.

MTA acquired Plant 2 in 2005.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) gray iron charging, melting, ladle metallurgy, holding and transfer system; identified collectively as EU-2; constructed in 1995; a nominal capacity of 36 tons of metal per hour; a maximum capacity of 45 tons of metal per hour; emissions controlled by baghouse DC-2 which exhausts to stack S-2. The transfer operations refer to the transfer of metal from the holding furnace to the ladle. The system consists of the following equipment/operations:

(1) One (1) furnace charging operation;

(2) Three (3) electric induction furnaces;

(3) One (1) ladle metallurgical station; and

(4) One (1) electric holding furnace.

The three (3) electric induction furnaces are considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(b) One (1) Line 1 pouring and casting operation; identified as EU-3a1; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a1 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(c) One (1) Line 2 pouring and casting operation; identified as EU-3a2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a2 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(d) One (1) Line 3 pouring and casting operation; identified as EU-3a3; constructed in 1995 and to be modified in 2008; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a3 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(e) One (1) Line 4 pouring and casting operation; identified as EU-3a4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; particulate emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. EU-3a4 is considered part of the affected source under 40 CFR Part 63, Subpart EEEEE.

(f) One (1) Line 1 casting cooling operation; identified as EU-3b1; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3b.

(g) One (1) Line 2 casting cooling operation; identified as EU-3b2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3b.

(h) One (1) Line 3 casting cooling operation; identified as EU-3b3; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3d.

(i) One (1) Line 4 casting cooling operation; identified as EU-3b4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand per hour; emissions exhaust to stack S-3d.

(j) One (1) Line 3 and Line 4 shakeout operation; identified as EU-4; constructed in 1995; a nominal capacity of 18 tons of metal and 110 tons of sand per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand per hour; particulate emissions controlled by baghouse DC-4; emissions exhaust to stack S-4.

(k) One (1) Line 1 and Line 2 shakeout operation; identified as EU-5a; constructed in 1995; a nominal capacity of 19 tons of metal and 110 tons of sand per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand per hour; particulate emissions controlled by baghouse DC-5; emissions exhaust to stack S-5.

(l) One (1) return sand/waste sand system; identified as EU-5bc; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand

per hour; emissions controlled by baghouse DC-5. Baghouse DC-5 and the AO system exhaust to stack S-5.

(m) One (1) shot reblast unit; identified as EU-6; constructed in 1997; a nominal capacity of 1.12 tons of iron castings per hour; a maximum capacity of 5 tons of iron castings per hour; emissions controlled by baghouse DC-6 which exhausts to stack S-6.

(n) One (1) shot blast system; consisting of four (4) shot blast units; identified as EU-16 through EU-19; constructed in 1999; a total nominal capacity of 27 tons of iron castings per hour; a total maximum capacity of 32 tons of iron castings per hour; with emissions controlled by baghouse DC-3 which exhausts to stack S-15.

(o) Eight (8) grinders; identified together as EU-7; constructed in 1999; a combined nominal capacity of 25 tons of iron castings per hour; a combined maximum capacity of 32 tons of iron castings per hour; emissions controlled by individual dust collectors which exhausts indoors.

(p) One (1) sand handling system; identified as EU-1a; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-1 which exhausts to stack S-1.

Note that the source plans to replace the mold machine on Line 3 in 2008. The mold machine is not an emissions unit and is not included in the permit documents. However, the replacement will cause an increase in the nominal capacity of the Line 3 operations. Since the Line 3 operations are being reviewed under 326 IAC 2-2 in this permit, the nominal capacity increase is not addressed further.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment cutting torches, soldering equipment, welding equipment [326 IAC 6-3-2].

(b) One (1) test sample blast machine; identified as EU-1b; constructed in 1995; a nominal capacity of 150 pounds of metal per hour; emissions controlled by baghouse DC-1; exhausting to stack S-1. [326 IAC 6-3-2]

(c) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO2; 5 lb/hr or 25 lb/day NOx; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs: Scrap receiving operations: All metal scrap is received via truck and deposited into scrap storage bins within a building. A source of fugitive emissions. [326 IAC 6-4]

(d) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

(e) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations, which include the following: Two (2) enclosed grinding units controlled by fabric filters and exhausting inside the building. [326 IAC 6-3-2]

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

(g) Propane or liquified petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.

(h) Emergency generators as follows: gasoline generators not exceeding 110 horsepower; diesel generators not exceeding 1600 horsepower; natural gas turbines or reciprocating engines not exceeding 16,000 horsepower.

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

(j) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month.

(k) Routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process, including purging of gas lines and purging of vessels.

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

(m) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO2; 5 lb/hr or 25 lb/day NOx; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs: An aqueous parts washer; Air compressors and pneumatic tools.

Stack Summary

Stack ID	Operations	Control
S-1	Sand Handling (EU-1)	Baghouse DC-1
S-2	Charging, Melting, Metallurgy, Holding, Transfer (EU-2) and Pouring and Casting (EU-3a1 through EU-3a4)	Baghouse DC-2
S-3b	Casting Cooling (EU-3b1 and EU-3b2)	None
S-3d	Casting Cooling (EU-3b3 and EU-3b4)	None
S-4	Shakeout (EU-4)	Baghouse DC-4
S-5	Shakeout (EU-5a) and Return Sand/waste Sand System (EU-5bc)	Baghouse DC-5
S-6	Shot Reblast (EU-6)	Baghouse DC-6
S-15	Shot Blast (EU-16 through EU-19)	Baghouse DC-3

Existing Approvals

The source has constructed or has been operating under the following previous approvals:

(a) CP 033-3496-00042, issued June 30, 1994;

(b) AA 033-6796-00042, issued November 11, 1996;

(c) R 033-8728-00042, issued September 23, 1997;

(d) CP 033-5793-00042, issued May 22, 1998;

(e) CP 033-9777-00042, issued September 17, 1998;

(f) MSM 033-10655-00042, issued March 30, 1999;

(g) Experimental Operation 033-19701-00042, issued November 15, 2004;

(h) SSM 033-20364-00042, issued January 4, 2005;

(i) Transfer of Ownership AA 033-21352-00042, issued July 12, 2005.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

The following terms and conditions from previous approvals have been determined no longer applicable; therefore, were not incorporated into this Part 70 permit:

(a) All construction conditions from all previously issued permits.

Reason not incorporated:
All facilities previously permitted have already been constructed; therefore, the construction conditions are no longer necessary as part of the operating permit. Any facilities that were previously permitted but have not yet been constructed would need new pre-construction approval before beginning construction.

(b) All conditions from CP 033-3496-00042, issued June 30, 1994.

Reason not incorporated:
CP 033-5793-00042, issued May 22, 1998, superseded CP 033-3496-00042, issued June 30, 1994.

(c) All conditions from SSM 033-20364-00042, issued January 4, 2005:

Reason not incorporated:
SSM 033-20364-00042, issued January 4, 2005 to Auburn Foundry, permitted the addition of a ductile iron conversion (DIC) station. When MTA acquired this source, it chose not to acquire the ductile iron conversion (DIC) station. This is supported by the fact that MTA did not receive ownership of SSM 033-20364-00042.

(d) All conditions from CP 033-9777-00042, issued September 17, 1998; and Condition D.1.1(d) from MSM 033-10655-00042, issued March 30, 1999:

Pursuant to CP 033-5793, issued May 22, 1998, in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the allowable PM and PM-10 emission rate from the continuous Rotor blast shotblasting machine constructed in 1998 shall not exceed 22.83 pounds per hour.

Reason not incorporated:
CP 033-9777-00042, issued September 17, 1998, permitted the construction and operation of a shot blast unit identified as Rotor Blast. MSM 033-10655-00042, issued March 30, 1999, established a limit on the Rotor Blast unit to render the requirements of 326 IAC 2-2 not applicable. On February 12, 2006, MTA informed IDEM that the unit had been removed.

(e) Condition 9 from CP 033-5793-00042, issued May 22, 1998:
The PM emissions from the proposed processes shall be in compliance with 326 IAC 6-3-2 provided that:

(1) Visible emissions are limited to 10% opacity. This opacity will satisfy the opacity limits of 326 IAC 5.

(2) There are no visible emissions from building openings. Satisfaction of this condition shall satisfy the fugitive emission requirements of 326 IAC 6-4.

(3) The PM emissions shall not exceed the following:

(A) For system 1 [EU-1], 1.48 lb/hr
(B) For system 2 [EU-2], 4.22 lb/hr
(C) For system 4 [EU-4], 4.85 lb/hr
(D) For system 5 [EU-5a], 8.44 lb/hr

Reason Removed:
The provisions of 326 IAC 6-3-2 do not limit visible emissions. In addition, all of the facilities covered by this condition are subject to 326 IAC 2-2 with respect to PM. Pursuant to 326 IAC 6-3-1(c)(1), a unit or facility subject to an PM emission limit established under 326 IAC 2-2 is not subject to the requirements of 326 IAC 6-3-2.

(f) Condition D.1.1 from MSM 033-10655-00042, issued March 30, 1999:
Pursuant to CP 033-5793-00042, issued May 22, 1998:

(1) The PM emission rate from the four shotblasting machines and from the six grinding machines shall not exceed 5.44 pounds per hour.

(2) The PM10 emission rate from the four shotblasting machines and from the six grinding machines shall not exceed 0.54 pounds per hour.

(3) The metal throughput to the four (4) George Fisher CT2 continuous shotblast machines shall not exceed 182,208 tons per 12 consecutive month period.

(4) The allowable PM and PM-10 emission rate from the continuous Rotor blast shotblasting machine constructed in 1998 shall not exceed 22.83 pounds per hour.

(5) The outlet grain loading from baghouse BH3 shall not exceed 0.01 grains per dry standard cubic foot of exhaust.

(6) Visible emissions shall not exceed 10% opacity.

Compliance with these limits will render the requirements of 326 IAC 2-2 (PSD) not applicable and will also satisfy the requirements of 326 IAC 6-3-2 (Process Operations).

Reason Removed:
On February 12, 2006, MTA informed IDEM that the Rotor blast unit had been removed. Pursuant to this permit, the remaining shotblast machines, EU-16 through EU-19, are now subject to the requirements of 326 IAC 2-2. See Appendix B for the respective BACT determination.

Enforcement Issue

On July 13, 2005, MTA and IDEM signed Agreed Order (AO) 2005-14702-A regarding the applicability of 326 IAC 2-2 to the entire source. In summary, that AO required MTA to submit information in order for IDEM, OAQ to determine BACT for PM/PM10, VOC and CO for the entire source. See Appendix B for the respective BACT determinations.

Recommendation

The staff recommends to the Commissioner that the Part 70 permit be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete Part 70 permit application for the purposes of this review was received from Auburn Foundry on December 13, 1996. A PSD application from MTA was received on September 9, 2005. Additional information was periodically received until July 11, 2007. The TV application and PSD application have been combined.

A notice of completeness letter was mailed to the Permittee on June 15, 1998.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

Potential to Emit of Source

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, inclulding air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential to Emit (ton/yr)
PM	Greater than 100
PM10	Greater than 100
SO_2	Less than 100
VOC	Greater than 100
CO	Greater than 100
NO_x	Less than 100

HAP	Potential to Emit (ton/yr)
Benzene	Greater than 10
Xylene	Greater than 10
Phenol	Greater than 10
Other HAPs	Greater than 25
TOTAL	Greater than 25

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, VOC and CO are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. Note that PM10, not PM, is a regulated pollutant under 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

(c) Fugitive Emissions
Since this source is one of the twenty-eight (28) listed source categories under 326 IAC 2-2, fugitive emissions are counted toward determination of PSD (326 IAC 2-2) applicability.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2006 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM10	31.5
PM2.5	120.5
SO_2	1.5
VOC	91.8
CO	254
NO_2	0.8
Lead	0.116

County Attainment Status

The source is located in DeKalb County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO_2	Attainment
NO_2	Attainment
8-hr Ozone	Attainment
CO	Attainment
Lead	Attainment

Note: On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC emissions and NOx are considered when evaluating the rule applicability relating to ozone. DeKalb County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the *State Rule Applicability – Entire Source – 326 IAC 2-2* section of this document for more information.

(b) DeKalb County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2, for PM2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions. See the *State Rule Applicability – Entire Source – 326 IAC 2-2* section of this document for more information.

(c) DeKalb County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants and lead. Therefore, these emissions were reviewed in Indiana pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the *State Rule Applicability – Entire Source – 326 IAC 2-2* section of this document for more information.

(d) Fugitive Emissions
Since this source is one of the twenty-eight (28) listed source categories under 326 IAC 2-2, fugitive emissions are counted toward determination of PSD (326 IAC 2-2) applicability.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, pursuant to which the source has to meet the following:

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assure that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Federal Rule Applicability

(a) The requirements of the New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) are not included in this permit. None of the facilities located at the source belong to a source category regulated by 40 CFR Part 60 and 326 IAC 12.

(1) The requirements of the New Source Performance Standard (NSPS), 326 IAC 12 and 40 CFR Part 60, Subpart AA (Standards of Performance for Steel Plants: Electric Arc Furnaces) are not included in this permit. The source is not a steel plant with electric arc furnaces or dust handling equipment as defined in 40 CFR 60.271.

(2) The requirements of the New Source Performance Standard (NSPS), 326 IAC 12 and 40 CFR Part 60, Subpart Z (Standards of Performance for Ferroalloy Production Facilities) are not included in this permit. The source does not use electric submerged arc furnaces as defined in 40 CFR 60.261.

(b) The source is subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) - Iron and Steel Foundries (326 IAC 20-92 and 40 CFR Part 63, Subpart EEEEE). Pursuant to 40 CFR 63.7681 and 40 CFR 63.7765, the source is a gray iron foundry and is a major source of HAPs (as defined by 40 CFR 63.2).

Pursuant to 40 CFR 63.7682(b), Subpart EEEEE covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines, automated shakeout lines, and mold and core making lines. This subpart also covers fugitive emissions from gray iron foundry operations.

The three (3) electric induction furnaces associated with facility EU-2 are subject to the requirements of Subpart EEEEE.

The pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4) are subject to the requirements of Subpart EEEEE.

The Subpart EEEEE requirements pertaining to cooling lines and shakeout lines are not included in the permit. MTA's cooling and shakeout lines (EU-3b1, EU-3b2, EU-3b3, EU-3b4, EU-4, and EU-5a) are part of an existing affected source. Subpart EEEEE does not include requirements specific to cooling and shakeout operations at existed affected sources.

Pursuant to 40 CFR 63.7682(c), the affected source is an existing affected source because construction commenced prior to December 23, 2002.

Pursuant to 40 CFR 63.7683(a), the Permittee must comply with the applicable emission limitations, operation requirements and maintenance requirements no later than April 23, 2007, except as specified in 40 CFR 63.7683(b).

Pursuant to 40 CFR 63.7683(b), the Permittee must comply with the applicable work practice standards of 40 CFR 63.7700(b) and (c) no later than April 22, 2005.

Nonapplicable portions of the NESHAP will not be included in the permit. This source is subject to the following requirements of 40 CFR Part 63, Subpart EEEEE:

40 CFR 63.7681
40 CFR 63.7682
40 CFR 63.7683 (a), (b), (f)
40 CFR 63.7690 (a)(1), (a)(5), (a)(7)
40 CFR 63.7700 (a), (b), (c)(1)(i), (c)(2), (c)(3)
40 CFR 63.7710 (a), (b)(1), (b)(3) - (b)(6)
40 CFR 63.7720
40 CFR 63.7730 (a), (b)
40 CFR 63.7731
40 CFR 63.7732 (a), (b)(1), (b)(2), (c)(1), (c)(2), (d), (h)
40 CFR 63.7733 (e), (f)
40 CFR 63.7734 (a)(1), (a)(5), (a)(7)
40 CFR 63.7735 (a), (b)
40 CFR 63.7736 (c), (d)
40 CFR 63.7740 (b), (f)
40 CFR 63.7742
40 CFR 63.7743 (a)(1), (a)(5), (a)(7), (c)
40 CFR 63.7744 (a)
40 CFR 63.7745
40 CFR 63.7746
40 CFR 63.7747 (b) - (d)
40 CFR 63.7750 (a), (b), (d), (e)
40 CFR 63.7751
40 CFR 63.7752
40 CFR 63.7753
40 CFR 63.7760
40 CFR 63.7761
40 CFR 63.7765
Table 1 of Subpart EEEEE

The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the affected source except when otherwise specified in 40 CFR Part 63, Subpart EEEEE.

(c) 40 CFR Part 64 includes provisions regarding Compliance Assurance Monitoring (CAM). In order for this rule to apply, a pollutant specific emissions unit at a Part 70 or Part 71 source must meet three criteria for a given pollutant:

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant,

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard, and

(3) The unit has potential pre-control or post-control device emissions of the applicable regulated air pollutant that are equal or greater than 100 percent of the amount required for a source to be classifies as a major source.

The following tables are used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each existing emission unit and specified pollutant:

PM/PM10:

Emission Unit / Pollutant	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
EU-2	Baghouse	Y *	>100	<100	100	Y	N
EU-3a1, EU-3a2, EU-3a3 and EU-3a4	Baghouse	Y *	>100	<100	100	Y	N
EU-3b1, EU-3b2, EU-3b3 and EU-3b4	none	Y *	<100	<100	100	N	N
EU-4	Baghouse	Y *	>100	<100	100	Y	N
EU-5a	Baghouse	Y *	>100	<100	100	Y	N
EU-5bc	Baghouse	Y *	>100	<100	100	Y	N
EU-6	Baghouse	Y *	>100	<100	100	Y	N
EU-7	Baghouse	Y *	>100	<100	100	Y	N
EU-16 through EU-19	Baghouse	Y *	>100	<100	100	Y	N
EU-1a	Baghouse	Y *	>100	<100	100	Y	N

* These units are subject to PM/PM10 emission limitations pursuant to 326 IAC 2-2.

VOC:
None of the units at this source use a VOC control device to comply with a VOC limitation or standard. Therefore, none of the units at the source are subject to 40 CFR Part 64 with respect to VOC.

HAPs:
As indicated in Appendix A, EU-2, EU-3a1, EU-3a2, EU-3a3, EU-3a4, EU-4, EU-5a, EU-5bc, EU-6, EU-7, and EU-16 through EU-19 have the potential to emit HAPs.

The only HAP emission limitation with which EU-2, EU-3a1, EU-3a2, EU-3a3, EU-3a4 must comply is from 40 CFR Part 63, Subpart EEEEE. Pursuant to 40 CFR 64.2(b)(1), an emission limitation or standard from Section 112 (National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63) of the Clean Air Act proposed after November 15, 1990 is exempt from serving as a satisfying criterion for 40 CFR Part 64.

EU-3b1, EU-3b2, EU-3b3, and EU-3b4 are subject to a HAP limitation for lead to render the requirements of 326 IAC 2-2 not applicable. However, these units do not use a control device to comply with the limitation.

EU-4, EU-5a, EU-5bc are subject to a HAP limitation for lead to render the requirements of 326 IAC 2-2 not applicable, use a baghouse to comply with that limitation but do not have a pre-control potential to emit of the respective major source threshold (0.6 tons per year.)

Therefore, none of the units at the source are subject to the requirements of CAM with respect to HAPs.

The Part 70 application was submitted prior to April 20, 1998. Pursuant to 40 CFR 64.5(b), the Permittee is required to submit the information required by 40 CFR 64.4 regarding the affected units as part of the Part 70 renewal application.

State Rule Applicability – Entire Source

Permitting History (provided for informational purposes only and has no bearing on 326 IAC 2-2 enforceability)

The source was initially constructed in 1995 under the ownership of Auburn Foundry following approval of CP 033-3496-00042, issued June 30, 1994.

On September 23, 1997, the source was issued R 033-8728-00042 for the construction and operation of a reblast unit (EU-6). The existing source was treated as a PSD minor source and the PTE of EU-6 was less than the relevant PSD major source thresholds.

On May 22, 1998, the source was issued CP 033-5793-00042 which superseded CP 033-3496-00042, issued June 30, 1994. This approval did not include requirements with respect to 326 IAC 2-2 for any of the existing units because emission calculations indicated that the source-wide PTE of each criteria pollutant was less than 100 tons per year. Note that the only emission limitations included in CP 033-5793-00042, issued May 22, 1998, pertained to 326 IAC 6-3-2.

On September 17, 1998, the source was issued CP 033-9777-00042 for the construction and operation of a Rotor blast unit. The existing source was treated as a PSD minor source and the PTE of the Rotor blast unit was less than the relevant PSD major source thresholds. See the *Existing Approval*s section of this document for more information.

On March 30, 1999, the source was issued MSM 033-10655-00042 for the construction and operation of four (4) grinders (EU-7) and four (4) George Fisher CT-2 continuous shot blast units. The new shot blast units replaced four existing shot blast units (EU-16 through EU-19) and were subsequently identified with the designations of the units that they replaced. The existing source was treated as a PSD major source. The approval included the conditions to render the requirements of PSD not applicable by limiting PM and PM10 emissions from the modification to less than 25 and 15 tons pear year, respectively. See the Existing Approvals section of this document for more information.

On January 4, 2005, the source was issued SSM 033-20364-00042 for the addition of a ductile iron conversion (DIC) station. The station is a type of covered magnesium treatment ladle operation that allows for the conversion of grey iron to ductile iron. None of the provisions from that approval have been incorporated into this Part 70 permit since that unit no longer exists. See the *Existing Approvals* section of this document for more information.

In 2004, Auburn Foundry filed for bankruptcy and the foundry was sold to a private equity firm. MTA purchased the foundry from the equity firm later that year. Transfer of ownership is documented in AA 033-21352-00042. MTA requested to have the following approvals transferred from Auburn Foundry to MTA:

(1) R 033-8728-00042, issued September 23, 1997;

(2) CP 033-5793-00042, issued May 22, 1998; and

(3) CP 033-9777-00042, issued September 17, 1998.

Prior to operating the source, MTA notified IDEM that it determined that the source was a PSD major source of CO.

On July 12, 2005, the OAQ approved the transfer of the aforementioned permits. Note that MTA did not acquire Experimental Operation 033-19701-00042, issued November 15, 2004, or SSM 033-20364-00042, issued January 4, 2005.

326 IAC 2-2 (Prevention of Significant Deterioration)

This source belongs to one of the listed 28 PSD source categories with a PSD major threshold of 100 tons per year.

The source was initially constructed in 1995 under the ownership of Auburn Foundry.

In 2004, Auburn Foundry filed for bankruptcy. As part of the bankruptcy proceedings, Auburn Foundry sold the source to MTA.

Prior to operating the source, MTA notified IDEM that it determined that the source was a PSD major source of PM, PM10, VOC and CO.

On July 13, 2005, the OAQ and MTA signed Agreed Order 2005-14702-A to resolve outstanding concerns over PSD applicability and requirements at the source. The previous owner, Auburn Foundry, had determined that the source was not a PSD major source. Investigation by MTA concluded that the source was, in fact, a PSD major source for PM, PM10, VOC and CO. As a result, the Agreed Order: 1) transferred ownership of MSM 033-10655-00042, issued March 30, 1999 to MTA, and 2) required MTA to submit an application that adequately addressed 326 IAC 2-2 for the entire source. That application was submitted to the OAQ on September 9, 2005 and supplemental information was received on November 10, 2006.

The PSD provisions require that this major PSD source be reviewed to ensure compliance with the National Ambient Air Quality Standards and apply the requirements of Best Available Control Technology (BACT) for PM/PM10, VOC and CO. Specifically, 326 IAC 2-2-3 requires a BACT review, 326 IAC 2-2-4 and 326 IAC 2-2-5 require the evaluation of the modification's impact on air quality, 326 IAC 2-2-6 requires an assessment of increment consumption and 326 IAC 2-2-7 requires an evaluation of additional impacts. A review of these rules is included for each unit/facility in the following sections.

Note that the SO_2 PTE and NOx PTE of the source is well below the respective PSD significance levels. See Appendix A for emission calculations.

According to the emission calculations in Appendix A, the source has an uncontrolled lead PTE greater than the respective PSD significant threshold; 0.6 tons per year. However, the controlled PTE of the source (all baghouses are federally enforceable) is less than 0.6 tons per year. In order to render the requirements of 326 IAC 2-2 not applicable with respect to lead, the following limitations are included in the permit:

(a) The total lead emissions from the charging, melting, metallurgy, holding and transfer operations (EU-2, stack S-2) and pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4, stack S-2) shall not exceed 0.003 pounds per ton of iron produced.

(b) The lead emissions from the Line 1 and Line 2 casting cooling operations (EU-3b1 and EU-3b2, stack S-3b) shall not exceed 0.0012 pounds per ton of iron produced.

(c) The lead emissions from the Line 3 and Line 4 casting cooling operations (EU-3b3 and EU-3b4, stack S-3d) shall not exceed 0.0012 pounds per ton of iron produced.

(d) The lead emissions from the Line 3 and Line 4 shakeout operation (EU-4, stack S-4) shall not exceed 0.0012 pounds per ton of iron produced.

(e) The lead emissions from the Line 1 and Line 2 shakeout operation (EU-5a, stack S-5) and return sand and waste sand system (EU-5bc, stack S-5) shall not exceed 0.0012 pounds per ton of iron produced.

In addition to the lead emission limits provided above, the aforementioned operations shall comply with the 750 tons per day and 220,000 tons per year iron production rate established pursuant to 326 IAC 2-2-3. See Appendix B for details.

326 IAC 2-3 (Nonattainment NSR – Emission Offset)
This source is not subject to the requirements of 326 IAC 2-3 with respect to PM2.5, PM10, SO2, NOx, CO, 8-hr ozone and lead because it is located in DeKalb County which is designated as an attainment area for the respective pollutants and standards.

326 IAC 2-4.1 (Hazardous Air Pollutants)
Pursuant to 326 IAC 2-4.1-1, any facility that:

(a) Is constructed or reconstructed after July 27, 1997; and

(b) Is major source of HAPs (as defined in 40 CFR 63.41); and

(c) Is not exempt pursuant to 326 IAC 2-4.1-1(b)

is subject to the requirements of 326 IAC 2-4.1.

As indicated in Appendix A, facilities EU-2, EU-3a1, EU-3a2, EU-3a3, EU-3a4, EU-3b1, EU-3b2, EU-3b3 and EU-3b4, EU-4, and EU-5a each meet that criteria. However, those facilities belong to a source category specifically regulated by Section 112(d) of the Clean Air Act (40 CFR Part 63, Subpart EEEEE). Therefore, pursuant to 326 IAC 2-4.1-1(b)(2), those facilities are not subject to the requirements of 326 IAC 2-4.1.

Facilities EU-1a, EU-5bc, EU-6, EU-16 through EU-19 and EU-7 are not sources of HAP emissions.

326 IAC 2-6 (Emission Reporting)
Following the issuance of this permit, the source has the potential to emit less than the thresholds in 326 IAC 2-6-3(a)(1); therefore, starting in 2004 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year.. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

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 the 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.

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

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This source located in DeKalb County which is not specifically listed in 326 IAC 6-5-1(a) and has not added a facility with the potential to emit fugitive particulate matter greater than 25 tons per year, which requires a permit as set forth in 326 IAC 2, after December 13, 1985. Therefore, pursuant to 326 IAC 6-5-1, this source is not subject to the requirements of 326 IAC 6-5.

326 IAC 9 (Carbon Monoxide Emission Limits)
Pursuant to 326 IAC 9 (Carbon Monoxide Emission Limits), the source is subject to this rule because it is a stationary source which emits CO and commenced operation after March 21, 1972. However, under this rule, there are no specific CO emission limitations because the source is not an operation listed under 326 IAC 9-1-2.

State Rule Applicability – Charging, Melting, Metallurgy, and Holding Operations (EU-2)

326 IAC 2-2 (Prevention of Significant Deterioration)
The charging, melting, metallurgy and holding operations (EU-2) are subject to 326 IAC 2-2 for PM, PM10 and VOC. See the *State Rule Applicability - Entire Source* section of this document for more information.

326 IAC 2-2-3 (PSD: Best Available Control Technology)

Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

326 IAC 2-2-4 (PSD: Air Quality Analysis)

Pursuant to 326 IAC 2-2-4, an air quality analysis of a new source or major modification is needed to determine if pre-construction monitoring is required. In most cases, existing or post-construction monitoring can satisfy this requirement if the pre-construction monitoring threshold has been exceeded.

As described in Appendix D, the modeled PM_{10} and CO emissions increases of the modification was determined to cause a significant impact on air quality. Specifically:

(a) The modeled post-modification ambient air concentration of PM_{10} is greater than the relevant monitoring de minimis concentrations of 13 ug/m^3 (24-hr average).

(b) The modeled post-modification ambient air concentration of CO is greater than the relevant monitoring de minimis concentrations of 575 ug/m^3 (8-hr average).

Therefore, pursuant to 326 IAC 2-2-4, this modification is subject to the pre-construction air quality PM_{10} and CO monitoring requirements of 326 IAC 2-2-4.

The pre-construction monitoring requirement is satisfied because there is existing air quality monitoring data for PM_{10} and CO.

326 IAC 2-2-5 (PSD: Air Quality Impact)

Pursuant to 326 IAC 2-2-5, an air dispersion modeling study was performed using the U.S. EPA's AERMOD model (www.epa.gov/scram001/dispersion_prefrec.htm#aermod). This study was conducted in order to estimate the maximum ambient concentrations of PM_{10} and CO that exist from the source's operation. A detailed review of this study is included in Appendix D.

In summary, the estimated maximum ambient PM_{10} and CO impacts combined with the background PM_{10} and CO concentrations did not exceed the respective NAAQS.

An air quality analysis was not performed for VOC because they are photochemically reactive. Photochemical models like CAMx or UAM-V are used in regulatory or policy assessments to simulate the impacts from all sources by estimating pollutant concentrations and deposition of both inert and chemically reactive pollutants over large spatial scales. Currently, U.S. EPA has no regulatory photochemical models which can take into account small spatial scales or single source PSD modeling for ozone.

326 IAC 2-2-6 (PSD: Increment Consumption)

Pursuant to 326 IAC 2-2-6(a), any modeling completed under 326 IAC 2-2-5 shall demonstrate that the increase in ambient pollutant concentration (resulting from the modification) does not exceed eighty percent (80%) of the available Maximum Allowable Increment (MAI) over the baseline concentration for that pollutant. See Appendix D for a review and demonstration of increment consumption.

In summary, analyses of the estimated impact of the source's emissions indicate that it does not consume greater than 80% of the available PSD PM_{10} and CO increments.

326 IAC 2-2-7 (PSD: Additional Analyses)

Pursuant to 326 IAC 2-2-7(a), an analysis of the impairment to visibility, soils, vegetation and endangered and threatened species was completed along with an assessment of the air quality impacts related to residential and commercial growth due to the modification. A detailed review of this study is included in Appendix D.

In summary, the results of the additional impact analysis conclude the operation of the source will not have a significant impact on economic growth, soils, vegetation, visibility or threatened species in the immediate vicinity or any Class I area.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)
The charging, melting, metallurgy and holding operations (EU-2) are subject to 326 IAC 2-2 for PM. The respective 326 IAC 2-2 PM limit is more stringent than the appropriate limit that would be established by 326 IAC 6-3-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), these facilities are not subject to the requirements of 326 IAC 6-3-2.

326 IAC 7-1.1(Sulfur Dioxide)
The charging, melting, metallurgy and holding operations (EU-2) are not subject to the requirements of 326 IAC 7-1.1 because they are not sources of SO2 emissions.

326 IAC 8-1-6 (General Reduction Requirements - BACT)
The potential VOC emissions of the charging, melting, metallurgy and holding operations (EU-2) are significantly less than 25 tons per year. Therefore, EU-2 is not subject to the requirements of 326 IAC 8-1-6.

State Rule Applicability – Pouring and Casting Operations (EU-3a1, EU-3a2, EU-3a3, EU-3a4)

326 IAC 2-2 (Prevention of Significant Deterioration)
The pouring and casting operations (EU-3a1, EU-3a2, EU-3a3, and EU-3a4) are subject to 326 IAC 2-2 for PM, PM10, VOC and CO. See the *State Rule Applicability - Entire Source* section of this document for more information.

326 IAC 2-2-3 (PSD: Best Available Control Technology)
Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability – Charging, Melting, Metallurgy and Holding Operations* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)
The pouring and casting operations (EU-3a1, EU-3a2, EU-3a3, and EU-3a4) are subject to 326 IAC 2-2 for PM. The respective 326 IAC 2-2 PM limit is more stringent than the appropriate limit that would be established by 326 IAC 6-3-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), these facilities are not subject to the requirements of 326 IAC 6-3-2.

326 IAC 7-1.1(Sulfur Dioxide)
Pursuant to 326 IAC 7-1.1-1, any unit with a potential to emit SO2 greater than or equal to 25 tons of per year or 10 pounds per hour shall comply with the requirements of 326 IAC 7-1.1. The pouring and casting operations (EU-3a1, EU-3a2, EU-3a3, and EU-3a4) are not subject to the requirements of 326 IAC 7-1.1 because each unit has a PTE of less than 25 tons of SO2 per year and less than 10 pounds per hour.

326 IAC 8-1-6 (General Reduction Requirements - BACT)
Pursuant to 326 IAC 8-1-6, any unit constructed after January 1, 1980 that has potential emissions greater than or equal to 25 tons of VOC per year shall reduce VOC emissions using BACT. The pouring and casting operations (EU-3a1, EU-3a2, EU-3a3, and EU-3a4) have potential VOC emissions greater than 25 tons of VOC per year and are therefore subject to 326 IAC 8-1-6. Compliance with the VOC BACT established for these facilities pursuant to 326 IAC 2-2 satisfies the requirements of 326 IAC 8-1-6. See Appendix B and the *State Rule Applicability - 326 IAC 2-2* sections of this document for more information.

State Rule Applicability – Casting Cooling Operations (EU-3b1, EU-3b2, EU-3b3, EU-3b4)

326 IAC 2-2 (Prevention of Significant Deterioration)
The casting cooling operations (EU-3b1, EU-3b2, EU-3b3, and EU-3b4) are subject to 326 IAC 2-2 for PM, PM10, VOC and CO. See the *State Rule Applicability - Entire Source* section of this document for more information.

326 IAC 2-2-3 (PSD: Best Available Control Technology)
Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability – Charging, Melting, Metallurgy and Holding Operations* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)
The casting cooling operations (EU-3b1, EU-3b2, EU-3b3, and EU-3b4) are subject to 326 IAC 2-2 for PM. The respective 326 IAC 2-2 PM limit is more stringent than the appropriate limit that would be established by 326 IAC 6-3-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), these facilities are not subject to the requirements of 326 IAC 6-3-2.

326 IAC 7-1.1(Sulfur Dioxide)
The casting cooling operations (EU-3b1, EU-3b2, EU-3b3, and EU-3b4) are not subject to the requirements of 326 IAC 7-1.1 because they are not sources of SO2 emissions.

326 IAC 8-1-6 (General Reduction Requirements - BACT)
Pursuant to 326 IAC 8-1-6, any unit constructed after January 1, 1980 that has potential emissions greater than or equal to 25 tons of VOC per year shall reduce VOC emissions using BACT. The casting cooling operations (EU-3b1, EU-3b2, EU-3b3, and EU-3b4) have potential VOC emissions greater than 25 tons of VOC per year and are therefore subject to 326 IAC 8-1-6. Compliance with the VOC BACT established for these facilities pursuant to 326 IAC 2-2 satisfies the requirements of 326 IAC 8-1-6. See Appendix B and the *State Rule Applicability - 326 IAC 2-2* sections of this document for more information.

State Rule Applicability – Shakeout Operations (EU-4 and EU-5a) and Return Sand/Waste Sand System (EU-5bc)

326 IAC 2-2 (Prevention of Significant Deterioration)
The shakeout operations (EU-4 and EU-5a) are subject to 326 IAC 2-2 for PM, PM10, VOC and CO. See the *State Rule Applicability - Entire Source* section of this document for more information.

The return sand/waste sand system (EU-5bc) is subject to 326 IAC 2-2 for PM and PM10. See the *State Rule Applicability - Entire Source* section of this document for more information.

326 IAC 2-2-3 (PSD: Best Available Control Technology)
Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability – Charging, Melting, Metallurgy and Holding Operations* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)
The shakeout operations (EU-4 and EU-5a) are subject to 326 IAC 2-2 for PM. The respective 326 IAC 2-2 PM limit is more stringent than the appropriate limit that would be established by 326 IAC 6-3-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), these facilities are not subject to the requirements of 326 IAC 6-3-2.

The return sand/waste sand system (EU-5bc) is subject to 326 IAC 2-2 for PM. Therefore, pursuant to 326 IAC 6-3-1(c)(1), this unit is not subject to the requirements of 326 IAC 6-3-2.

326 IAC 7-1.1(Sulfur Dioxide)
The shakeout operations (EU-4 and EU-5a) are not subject to the requirements of 326 IAC 7-1.1 because they are not sources of SO2 emissions.

The return sand/waste sand system (EU-5bc) is not subject to the requirements of 326 IAC 7-1.1 because it is not a source of SO2 emissions.

326 IAC 8-1-6 (General Reduction Requirements - BACT)
Pursuant to 326 IAC 8-1-6, any unit constructed after January 1, 1980 that has potential emissions greater than or equal to 25 tons of VOC per year shall reduce VOC emissions using BACT. The shakeout operations (EU-4 and EU-5a) have potential VOC emissions greater than 25 tons of VOC per year and are therefore subject to 326 IAC 8-1-6. Compliance with the VOC BACT established for these facilities pursuant to 326 IAC 2-2 satisfies the requirements of 326 IAC 8-1-6. See Appendix B and the *State Rule Applicability - 326 IAC 2-2* sections of this document for more information.

The return sand/waste sand system (EU-5bc) is not a source of VOC emissions and therefore not subject to the requirements of 326 IAC 8-1-6.

State Rule Applicability – Finishing Operations (EU-6, EU-16 through EU-19 and EU-7)

326 IAC 2-2 (Prevention of Significant Deterioration)
The finishing operations (EU-6, EU-16 through EU-19 and EU-7) are subject to 326 IAC 2-2 for PM and PM10. See the *State Rule Applicability - Entire Source* section of this document for more information.

326 IAC 2-2-3 (PSD: Best Available Control Technology)
Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability – Charging, Melting, Metallurgy and Holding Operations* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)
The finishing operations (EU-6, EU-16 through EU-19 and EU-7) are subject to 326 IAC 2-2 for PM. The respective 326 IAC 2-2 PM limit is more stringent than the appropriate limit that would be established by 326 IAC 6-3-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), these facilities are not subject to the requirements of 326 IAC 6-3-2.

326 IAC 7-1.1(Sulfur Dioxide)
The finishing operations (EU-6, EU-16 through EU-19 and EU-7) are not subject to the requirements of 326 IAC 7-1.1 because they are not sources of SO2 emissions.

326 IAC 8-1-6 (General Reduction Requirements - BACT)
The finishing operations (EU-6, EU-16 through EU-19 and EU-7) are not a source of VOC emissions and therefore not subject to the requirements of 326 IAC 8-1-6.

State Rule Applicability – Sand Handling System (EU-1a)

326 IAC 2-2 (Prevention of Significant Deterioration)
The sand handling system is subject to 326 IAC 2-2 for PM and PM10. See the *State Rule Applicability - Entire Source* section of this document for more information.

326 IAC 2-2-3 (PSD: Best Available Control Technology)

Pursuant to 326 IAC 2-2-3, a detailed BACT analysis was completed by the IDEM, OAQ and is included in Appendix B.

See the *State Rule Applicability – Charging, Melting, Metallurgy and Holding Operations* section of this document for a summary of the requirements for 326 IAC 2-2-4, 2-2-5, 2-2-6 and 2-2-7 applicable to this modification.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)

The sand handling system (EU-1a) is subject to 326 IAC 2-2 for PM. The respective 326 IAC 2-2 PM limit is more stringent than the appropriate limit that would be established by 326 IAC 6-3-2. Therefore, pursuant to 326 IAC 6-3-1(c)(1), this unit is not subject to the requirements of 326 IAC 6-3-2.

326 IAC 7-1.1(Sulfur Dioxide)

The sand handling system (EU-1a) is not subject to the requirements of 326 IAC 7-1.1 because it is not a source of SO2 emissions.

326 IAC 8-1-6 (General Reduction Requirements - BACT)

The sand handling system (EU-1a) is not a source of VOC emissions and therefore not subject to the requirements of 326 IAC 8-1-6.

State Rule Applicability – Specifically Regulated Insignificant Activities

326 IAC 2-2 (Prevention of Significant Deterioration)

The insignificant activities are not included in the BACT evaluation in Appendix A. These units are responsible for an extremely small proportion of the source's overall emissions. In addition, many of these units are located inside the building, where particulate emissions are effectively eliminated or controlled by other control units that have been subject to the BACT assessment. Of these insignificant units, only the small natural gas and propane combustion sources have a quantifiable potential to emit. The pollutant emissions from the combustion units with the relatively greatest PTE is NOx, which is not subject to PSD review. Lastly, some of the insignificant units were installed after the original facility was constructed and are not part of the same construction activity which is subject to PSD review.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(a), the insignificant grinding, brazing, soldering, and welding operations are subject to the requirements of 326 IAC 6-3-2 because they have the potential to emit particulate and are not specifically exempted by 326 IAC 6-3-1(b).

Pursuant to 326 IAC 6-3-1(a), the insignificant test sample blast machine is subject to the requirements of 326 IAC 6-3-2 because it has the potential to emit particulate and is not specifically exempted by 326 IAC 6-3-1(b).

Pursuant to 326 IAC 6-3-2, the particulate emissions from the insignificant brazing, soldering, and welding operations and test sample blast machine shall be limited by the following:

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

Testing Requirements

The source is required to complete various tests for PM/PM10, VOC, CO and lead. See permit conditions D.1.6, D.2.6 and D.3.7 for the testing requirements.

Note that the source completed PM/PM10 testing for the pouring, cooling and shakeout operations on November 3, 2005. As a result, the next PM/PM10 tests must be completed no later than five years from that date, November 3, 2010.

Note that the source completed CO testing for the pouring, cooling and shakeout operations on November 3, 2005. As a result, the next CO test must be completed no later than five years from that date, November 3, 2010.

The source must complete VOC validation testing of the greensand and core materials used in the casting process. Specific requirements are included in Condition D.1.6.

Lead emissions testing is required within 180 days of permit issuance because, according to IDEM records, such testing has never been completed.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the approporiate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification and included in the permit are summarized in the following table:

Unit	Monitoring Requirement 1	Monitoring Requirement 2
EU-2, EU-3a1, EU-3a2, EU-3a3, and EU-3a4	Visible Emission Notations	Baghouse Pressure Drop
EU-3b1, EU-3b2, EU-3b3, and EU-3b4	Visible Emission Notations	None
EU-4, EU-5a and EU-5bc	Visible Emission Notations	Baghouse Pressure Drop
EU-7	Baghouse Pressure Drop	None
EU-6, EU-16 through EU-19 and EU-1a	Visible Emission Notations	Baghouse Pressure Drop

NA - Not applicable.
Compliance monitoring for EU-7 is not required because the operation exhausts indoors.

Conclusion

The operation of this stationary gray iron foundry shall be subject to the conditions of this Part 70 permit T033-21760-00042.

Appendix A: Emission Calculations
Gray Iron Foundry

Company Name: Metal Technologies Auburn, LLC
Address City IN Zip: 1401 South Grandstaff Drive, Auburn IN 46706
Permit #: T033-21760-00042
Reviewer: ERG/BS
Date: 15-Oct-07

	Potential Throughput sand (tons/hr)	PM Control (%)
Sand Handling System (EU-1a) (stack S-1)	250.0	99.0%

	PM	PM10
Emission Factors (lb/ton sand handled)	3.6	0.54
Uncontrolled Potential To Emit (lb/hr)	900.0	135.00
Uncontrolled Potential To Emit (ton/yr)	3942.0	591.3
Controlled Potential to Emit (ton/yr)	39.4	5.9
Allowable Emissions (ton/yr)	2.80	2.80

PM emission factor for Sand Handling is from AP-42 Ch. 12.10 (Iron Foundries)
PM10 emission factor for Sand Handling is from AP-42 Ch. 12.13 (Steel Foundries)

	Potential Throughput metal (tons/hr)	PM Control (%)
Charging, Melting, Holding, Transfer and Metallurgy (EU-2) (stack S-2)	45.0	95.0%

	PM	PM10	VOC
Emission Factors (lb/ton metal produced)	3.30	3.08	0.005
Uncontrolled Potential To Emit (lb/hr)	148.5	138.6	0.225
Uncontrolled Potential To Emit (ton/yr)	650.4	607.1	1.0
Controlled Potential to Emit (ton/yr)	32.5	30.4	1.0
Allowable Emissions (ton/yr)	15.77	6.60	0.55

PM emission factor is the sum of the PM emission factors for Charging, Melting and Metallurgy from AP-42 Ch. 12.10 (Iron Foundries)
PM10 emission factor is the sum of the PM10 emission factors for Charging, Melting and Metallurgy from AP-42 Ch. 12.10 (Iron Foundries)

	Potential Throughput metal (tons/hr)		PM Control (%)
Pouring/Casting (EU-3a1, EU-3a2, EU-3a3, EU-3a4) (stack S-2)	45.0	total	99.0%

	PM	PM10	VOC	CO	SO2	NOx
Emission Factors (lb/ton metal produced)	0.766	0.766	1.4	1.88	0.020	0.01
Uncontrolled Potential To Emit (lb/hr)	3447.0	3447.0	63.0	84.6	0.90	0.45
Uncontrolled Potential To Emit (ton/yr)	15098	15098	275.9	370.5	3.9	2.0
Controlled Potential to Emit (ton/yr)	151.0	151.0	275.9	370.5	3.9	2.0
Allowable Emissions (ton/yr)	(a)	6.60	154.0 (b)	396.0 (c)	2.2	1.1

Pouring/Casting PM and PM10 emission factors were determined from November 2005 testing done on EU-3a1 and EU-3a2 and represent post-control emissions.
The VOC emission factor represents VOC emissions from pouring, cooling and shakeout and is based on November 2005 testing and information from MTA.
Pouring/Casting CO emission factors were determined from November 2005 testing done on EU-3a1 and EU-3a2 with non-cored product.
Pouring/Casting SO2 and NOx emission factors were supplied by the AIRS Facility Subsystem Emission Factor Listing For Criteria Air Pollutants.

(a) PM emissions are based on the grain loading and airflow of baghouse DC-2. DC-2 controls emissions from these operations and EU-2. As a result, the PM emissions from this operation are accounted for in the allowable PM emissions from EU-2.

(b) The total VOC emissions from the pouring and casting, casting cooling and shakeout operations are limited to 1.4 lb/ton. The allowable emission figure presented represents the total allowable VOC emissions from those operations. See Appendix B for details.

(c) The CO emissions from pouring and casting operations are limited to 3.6 lb/ton. See Appendix B for details.

Methodology:
Uncontrolled Potential to Emit (ton/yr) = Potential Throughput (ton/hr) x Emission Factor (lb pollutant/ton) x 8760 hr/yr x 1/2000 ton/lb
Controlled PM Potential to Emit = Uncontrolled PTE x (1-efficiency/100)
Allowable Emissions are based on an operation's BACT limits (gr/dscf, lb/hr, lb/ton and production limitation; as applicable). See Appendix B for details. If pollutant emissions are not specifically limited, then allowable emissions = controlled potential to emit.

Pursuant to 326 IAC 2-2-3 (BACT), the total iron production of the source shall not exceed more than 220,000 tons per twelve consecutive month period. This limit is equivalent to 30 tons of iron per hour. 45 tons per hour is the maximum capacity of the respective units.

Appendix A: Emission Calculations
Gray Iron Foundry

Company Name: **Metal Technologies Auburn, LLC**
Address City IN Zip: **1401 South Grandstaff Drive, Auburn IN 46706**
Permit #: **T033-21760-00042**
Reviewer: **ERG/BS**
Date: **15-Oct-07**

	Potential Throughput metal (tons/hr)		PM Control (%)	VOC Control (%)
Casting Cooling (EU-3b1 and EU-3b2) (stack S-3b)	45.0	total	0.0%	20.0%
Casting Cooling (EU-3b3 and EU-3b4) (stack S-3d)				

	PM	PM10	VOC	CO
Emission Factors (lb/ton produced)	0.114	0.114	(d)	0.91
Uncontrolled Potential To Emit (lb/hr)	5.1	5.1		40.95
Uncontrolled Potential To Emit (ton/yr)	22.5	22.5		179.4
Controlled Potential to Emit (ton/yr)	22.5	22.5		179.4
Allowable Emissions (ton/yr)	18.75	9.9		187.0 (e)

Casting Cooling PM, PM10, VOC and CO emission factors were determined from November 2005 and March 2006 testing done on EU-3b1 and EU-3b2.

(d) The total VOC emissions from the pouring and casting, casting cooling and shakeout operations are limited to no more than 1.4 lb/ton. As a result, the emissions from cooling are presented in the allowable emission calculations for pouring. See Appendix B for details.

(e) The CO emissions from casting cooling operations are limited to 1.7 lb/ton. See Appendix B for details.

	Potential Throughput metal (tons/hr)		PM Control (%)	VOC Control (%)
Shakeout (EU-4) (stack S-4)	45.0	total	99.0%	20.0%
Shakeout (EU-5a) (stack S-5)				

	PM	PM10	VOC	CO
Emission Factors (lb/ton produced)	0.112	0.112	(f)	0.354
Uncontrolled Potential To Emit (lb/hr)	504	504		15.93
Uncontrolled Potential To Emit (ton/yr)	2208	2208		69.8
Controlled Potential to Emit (ton/yr)	22.1	22.1		69.8
Allowable Emissions (ton/yr)	23.65	12.1		77.0 (g)

Shakeout PM and PM10 emission factors were determined from November 2005 testing done on EU-4 and represent post-control emissions.
Shakeout VOC and CO emission factors were determined from November 2005 and March 2006 testing done on EU-4.

(f) The total VOC emissions from the pouring and casting, casting cooling and shakeout operations are limited to 1.4 lb/ton. As a result, the emissions from shakeout are presented in the allowable emission calculations for pouring. See Appendix B for details.

(g) The CO emissions from shakeout operations are limited to 0.7 lb/ton. See Appendix B for details.

Methodology:
Uncontrolled Potential to Emit (ton/yr) = Potential Throughput (ton/hr) x Emission Factor (lb pollutant/ton) x 8760 hr/yr x 1/2000 ton/lb
Controlled Potential to Emit (ton/yr) = Uncontrolled PTE x (1-efficiency/100)

Allowable Emissions are based on an operation's BACT limits (gr/dscf, lb/hr, lb/ton and production limitation; as applicable). See Appendix B for details. If pollutant emissions are not specifically limited, then allowable emissions = controlled potential to emit.

Pursuant to 326 IAC 2-2-3 (BACT), the total iron production of the source shall not exceed more than 220,000 tons per twelve consecutive month period. This limit is equivalent to 30 tons of iron per hour. 45 tons per hour is the maximum capacity of the respective units.

Appendix A: Emission Calculations
Gray Iron Foundry

Company Name: **Metal Technologies Auburn, LLC**
Address City IN Zip: **1401 South Grandstaff Drive, Auburn IN 46706**
Permit #: **T033-21760-00042**
Reviewer: **ERG/BS**
Date: **15-Oct-07**

	Potential Throughput sand (tons/hr)	PM Control (%)
Return Sand and Waste Sand System (EU-5bc) (stack S-5)	250.0	99.0%

	PM	PM10
Emission Factors (lb/ton sand handled)	3.6	0.54
Uncontrolled Potential To Emit (lb/hr)	900.0	135.00
Uncontrolled Potential To Emit (ton/yr)	3942.0	591.3
Controlled Potential to Emit (ton/yr)	39.4	5.9
Allowable Emissions (ton/yr)	(h)	(h)

PM emission factor for Sand Handling is from AP-42 Ch. 12.10 (Iron Foundries)
PM10 emission factor for Sand Handling is from AP-42 Ch. 12.13 (Steel Foundries)
(h) The allowable emissions from EU-5bc are accounted for in the allowable emissions calculations for EU-5a because they exhaust to the same stack, S-5.

	Potential Throughput castings (tons/hr)		PM Control (%)
Casting Finishing (Shotblast units and Grinders) (EU-6, EU-16 through EU-19, EU-7)	45.0	total	99.0%

	PM	PM10
Emission Factors lbs/ton finished casting	17.0	1.7
Uncontrolled Potential To Emit (lb/hr)	765	77
Uncontrolled Potential To Emit (ton/yr)	3351	335.1
Controlled Potential to Emit (ton/yr)	33.51	3.35
Allowable Emissions (ton/yr)	4.82	4.82

PM emission factor for Casting Finishing is from AP-42 Ch. 12.10 (Iron Foundries).
PM10 emission factor for Casting Finishing is from AP-42 Ch. 12.13 (Steel Foundries).

Methodology:
Potential Emissions (ton/yr) = Potential Throughput (ton/hr) x Emission Factor (lb pollutant/ton) x 8760 hr/yr x 1/2000 ton/lb
Controlled Potential to Emit (accounts for production limitation and controls) = Uncontrolled PTE x (1-efficiency/100) x (30/45)
Allowable Emissions are based on an operation's BACT limits (gr/dscf, lb/hr, lb/ton and production limitation; as applicable). See Appendix B for details. If pollutant emissions are not specifically limited, then allowable emissions = controlled potential to emit.

Pursuant to 326 IAC 2-2-3 (BACT), the total iron production of the source shall not exceed more than 220,000 tons per twelve consecutive month period. This limit is equivalent to 30 tons of iron per hour. 45 tons per hour is the maximum capacity of the respective units.

Criteria Pollutants Emissions Summary

Company Name: **Metal Technologies Auburn, LLC**
Address City IN Zip: **1401 South Grandstaff Drive, Auburn IN 46706**
Permit #: **T033-21760-00042**
Reviewer: **ERG/BS**
Date: **15-Oct-07**

Process Description		PM (tpy)	PM10 (tpy)	VOC (tpy)	CO (tpy)	SO2 (tpy)	NOx (tpy)
Sand Handling System (EU-1a)	Uncontrolled	3942.0	591.3	0.0	0.00	0.00	0.00
	Controlled	39.4	5.9	0.0	0.00	0.00	0.00
Charging, Melting, Holding, Transfer and Metallurgy (EU-2)	Uncontrolled	650.4	607.1	1.0	0.00	0.00	0.00
	Controlled	32.5	30.4	1.0	0.0	0.0	0.0
Pouring/Casting (EU-3a1, EU-3a2, EU-3a3, EU-3a4)	Uncontrolled	15098	15098	276	371	3.94	1.97
	Controlled	151	151	276	371	3.94	1.97
Casting Cooling (EU-3b1, EU-3b2, EU-3b3, EU-3b4)	Uncontrolled	22.5	22.5	0.0	179.4	0.0	0.00
	Controlled	22.5	22.5	0.0	179.4	0.0	0.0
Shakeout (EU-4, EU-5a)	Uncontrolled	2207.5	2207.5	0.0	69.8	0.0	0.0
	Controlled	22.1	22.1	0.0	69.8	0.0	0.0
Return and waste sand system (EU-5bc)	Uncontrolled	3942.0	591.3	0.0	0.0	0.0	0.0
	Controlled	39.4	5.9	0.0	0.0	0.0	0.0
Casting Finishing (Shotblast units and Grinders)	Uncontrolled	3351	335	0	0	0	0
	Controlled	34	3	0	0	0	0

TOTALS:	**PM**	**PM10**	**VOC**	**CO**	**SO2**	**NOx**
Uncontrolled PTE	29,213.0	19,452.6	276.9	619.7	3.9	2.0
Controlled PTE	340.4	241.1	276.9	619.7	3.9	2.0
Allowable Emissions	65.8	36.2	154.6	660.0	3.9	2.0

Appendix A: HAP Calculations
Gray Iron Foundry

Company Name: Metal Technologies Auburn, LLC
Address City IN Zip: 1401 South Grandstaff Drive, Auburn IN 46706
Permit #: T033-21760-00042
Reviewer: ERG/BS
Date: 15-Oct-07

Process:	Production Rate (ton metal/hr)	Pollutant	EF (lb/ton produced)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	HAP Control Efficiency (%)
Charging, Melting &	45.0	chromium	0.00718	1.42	0.05	95%
Metallurgy (EU-2)		cobalt	0.00055	0.11	0.00	95%
		nickel	0.00483	0.95	0.03	95%
SCC# 3-04-003-1		arsenic	0.00179	0.35	0.01	95%
		cadmium	0.00000	0.00	0.00	95%
		selenium	0.00028	0.06	0.00	95%
		lead	0.03174	6.26	0.21	95%
		phenol	0.01152	2.27	1.51	0%
		benzene	0.06246	12.31	8.21	0%
		formaldehyde	0.00126	0.25	0.17	0%
		xylene	0.02160	4.26	2.84	0%
		toluene	0.02538	5.00	3.33	0%
		beryllium	0.00020	0.04	0.03	0%
			subtotal	*33.27*	*16.39*	

Process:	Production Rate (tons metal/hr)	Pollutant	EF (lb/ton produced)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	HAP Control Efficiency (%)
Pouring/Casting (EU-3a1,	45.0	chromium	0.00160	0.32	0.00	99%
EU-3a2, EU-3a3, EU-3a4)		cobalt	0.00013	0.03	0.00	99%
		nickel	0.00281	0.55	0.00	99%
SCC# 3-04-003-18		arsenic	0.00055	0.11	0.00	99%
		cadmium	0.00025	0.05	0.00	99%
		selenium	0.00004	0.01	0.00	99%
		lead	0.01617	3.19	0.02	99%
			subtotal	*4.25*	*0.03*	

Process:	Production Rate (tons metal/hr)	Pollutant	EF (lb/ton produced)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	HAP Control Efficiency (%)
Castings Shakeout (EU-4, EU-5a)	45.0	chromium	0.00122	0.24	0.00	99%
		cobalt	0.00010	0.02	0.00	99%
SCC# 3-04-003-31		nickel	0.00214	0.42	0.00	99%
		arsenic	0.00042	0.08	0.00	99%
		cadmium	0.00019	0.04	0.00	99%
		selenium	0.00003	0.01	0.00	99%
		lead	0.01232	2.43	0.02	99%
			subtotal	*3.24*	*0.02*	

Process:	Production Rate (tons metal/hr)	Pollutant	EF (lb/ton produced)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	HAP Control Efficiency (%)
Pouring/Casting (EU-3a1,	45.0	Phenol	0.0820	16.16	8.62	20%
EU-3a2, EU-3a3, EU-3a4)		Benzene	0.3963	78.11	41.66	20%
		Analine	0.0351	6.92	3.69	20%
Casting Cooling (EU-3b1,		2-Methylnaphthalene	0.0028	0.54	0.29	20%
EU-3b2, EU-3b3, EU-3b4)		o-Cresol	0.0178	3.51	1.87	20%
		Naphthalene	0.0046	0.90	0.48	20%
Castings Shakeout (EU-4, EU-5a)		N.N-Dimethylaniline	0.0082	1.61	0.86	20%
		1-Methylnaphthalene	0.0016	0.31	0.16	20%
		Toluene	0.0631	12.43	6.63	20%
		1,3-Dimethylnaphthalene	0.0007	0.13	0.07	20%
		m,p-Cresol	0.0057	1.12	0.60	20%
		m,p-Xylene	0.0943	18.59	9.91	20%
		Xylene (Total)	0.0375	7.39	3.94	20%
		Acetaldehyde	0.0097	1.92	1.02	20%
		2-Butanone	0.0024	0.47	0.25	20%
		Ethylbenzene	0.0143	2.82	1.50	20%
		Formaldehyde	0.0010	0.21	0.11	20%
		Hexane	0.0147	2.90	1.55	20%
		Other HAPs	0.0067	1.33	0.71	20%
			subtotal	*157.36*	*83.92*	

Process:	Production Rate (tons metal/hr)	Pollutant	EF (lb/ton produced)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	HAP Control Efficiency (%)
	45.0	chromium	0.00646	1.27	0.01	99%
Castings Finishing		cobalt	0.00051	0.10	0.00	99%
(various shotblasting units)		nickel	0.01139	2.24	0.01	99%
		arsenic	0.00221	0.44	0.00	99%
SCC# 3-04-003-40		cadmium	0.00102	0.20	0.00	99%
		selenium	0.00017	0.03	0.00	99%
		lead	0.00450	0.89	0.01	99%
			subtotal	*5.18*	*0.03*	

	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)
TOTAL HAPs	**203.28**	**100.40**

Methodology:
EF = Emission factor
Uncontrolled PTE = Rate (units/hr) x EF (lbs/unit) x 8760 hrs/yr / 2000 lbs/hr
Controlled PTE (accounts for production limitation and control efficiency) = Uncontrolled PTE x (1-efficiency/100) x (30/45)
1 lb = 2000 tons

Pursuant to 326 IAC 2-2-3 (BACT), the total iron production of the source shall not exceed more than 220,000 tons per twelve consecutive month period. This limit is equivalent to 30 tons of iron per hour. The maximum production capacity for the respective units is 45 tons per hour.

Organic HAP emission factors from pouring, cooling and shakeout are based on data from "Organic Hazardous Air Pollutant Emission Factors for Iron Foundries", American Foundry Society August 16, 2005, material specifications for MTA and source specific data.

NOTE: Once the Advanced Oxidation system is operating, the organic HAPs from the pouring, cooling and shakeout operations will be reduced by 20%.

Company Name: **Metal Technologies Auburn, LLC**
Address City IN Zip: **1401 South Grandstaff Drive, Auburn IN 46706**
Permit #: **T033-21760-00042**
Reviewer: **ERG/BS**
Date: **15-Oct-07**

Truck Dumping (see AP-42 for more information)
Waste sand is the only material dumped on-site. All other materials are either unloaded indoors or unloaded into a silo.

E = k(0.0032) * (U/5)^1.3 / (M/2)^1.4 AP-42 Chapter 13.2.4, Equation 1

E =	Emission Factor (lbs/ton)	
k =	0.35	particle size multilplier for PM-10
	0.74	particle size multilplier for PM
U =	1	mean wind speed (mph)
M =	7.4	material moisture content (fraction)

PM Emission Factor:
E = 4.68E-05 lb/ton

PM-10 Emission Factor:
E = (0.35)(0.0032) * (12.7/5)^1.3 / (10%/2)^1.4
E = 2.213E-05 lb/ton

Annual potential amount of dry material delivered by truck = 17,600 tpy

Potential PM Emissions (tons/year) = Emission factor (lb/ton) * Gypsum delivered (tpy) / 2000 (lbs/ton)
Potential PM Emissions (tons/year) = **0.00041 tpy**

Potential PM-10 Emissions (tons/year) = Emission factor (lb/ton) * Gypsum delivered (tpy) / 2000 (lbs/ton)
Potential PM-10 Emissions (tons/year) = **0.00019 tpy**

Paved Roads (see AP-42 for more information)

Maximum Vehicular Speed: 10 mph
Average Distance of Haul: 0.25 miles

Vehicle Type	No. of One Way Trips per Hour	Weight
Dump Truck	8	40
total	8	

Weighted Average Gross Weight: 40 tons

Calculations:
E = k(sL/2)^0.65 * (W/3)^1.5 AP-42 Chapter 13.2.1, Equation 1

E =	Emission factor (lbs/vehicle miles traveled(VMT))	
k =	0.016	particle size multiplier for PM-10
	0.082	particle size multiplier for PM
sL	0.015	road surface silt content (g/m^2)
W	40	weighted average vehicle weight (tons) (calculate from table above)

source: AP-42, chapter 13.2.1, p. 13.2.1-6.

VMT= 17520 (miles/yr)

PM
E = 0.1659632 lbs/VMT

Potential PM Emissions (ton/yr) = Emission factor (lbs/VMT) * VMT / 2000 (lbs/ton)
Potential PM Emissions (ton/yr) = **1.45 tpy**

PM-10
E = 0.0323831 lbs/VMT

Potential PM-10 Emissions (ton/yr) = Emission factor (lbs/VMT) * VMT / 2000 (lbs/ton)
Potential PM-10 Emissions (ton/yr) = **0.28 tpy**

Storage Piles (if applicable) (see AP-42 for more information)

The section that discusses storage piles, AP-42 Section 13.2.4, indicates that the largest contriubution to emissions from the storage pile is the loading into the pile. An equation for the storage pile was not available. Therefore, it is assumed that the emissions from the storage pile is equal to the emissions from the truck dumping.

Potential PM Emissions (tons/year) = **0.00086 tpy**
Potential PM-10 Emissions (tons/year) = **0.00041 tpy**

Storage Pile Handling (if applicable) (see AP-42 for more information)

EF (lb/ton) = k * (0.0032) * (U/5)^1.3 / (M/2)^1.4

where:

k value for:

PM	PM10
0.74	0.35

U value =	1	mph
M value =	7.4	%
Storage capacity =	60	tons

PM EF =	4.68E-05	lb/ton
PM10 EF =	2.21E-05	lb/ton

PM Emissions (ton/yr) = EF (lb/ton) * Storage Capacity (tons) * use rate (1/year) * 1/2000 ton/lb
PM Emissions (ton/yr) = 7.02E-07

PM10 Emissions (ton/yr) = EF (lb/ton) * Storage Capacity (tons) * use rate (1/year) * 1/2000 ton/lb
PM10 Emissions (ton/yr) = 3.32E-07

Indiana Department of Environmental Management
Office of Air Quality

APPENDIX B to the Technical Support Document (TSD) - BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION

Source Information and Description of Modification

Source Name:	Metal Technologies Auburn, LLC
Source Location:	1537 West Auburn Drive, Auburn, Indiana 46706
Mailing Address:	1537 West Auburn Drive, Auburn, Indiana 46706
County:	DeKalb
SIC Code:	3321
Part 70 Permit No.:	T033-21760-00042
Permit Reviewer:	ERG/BS

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following federal BACT (Best Available Control Technology) review for a major source relating to a gray iron foundry owned and operated by Metal Technologies Auburn ("MTA"), located in Auburn, Indiana.

Background and Process Description

On July 13, 2005, the OAQ and MTA signed Agreed Order 2005-14702-A to resolve outstanding concerns over PSD applicability and requirements at the source. As part of that resolution, MTA agreed to have a PSD BACT review completed for PM, PM10, VOC and CO for all the respective emission units at the source. Note that the VOC BACT evaluation included in this document is conducted pursuant to 326 IAC 8-1-6 as well as 326 IAC 2-2.

Note that PM and PM10 emissions in this BACT determination are often reviewed as filterable PM/PM10 and filterable plus condensable PM10. This is done to facilitate future compliance demonstration.

BACT Description

This source is located in DeKalb County which is designated as attainment for all criteria pollutants.

PM, PM10, VOC and CO emissions from the entire source have been reviewed pursuant to 326 IAC 2-2-3 which requires a BACT determination.

> BACT is defined as “an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under the CAA emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of ‘best available control technology’ result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act.”

According to the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses are conducted with a 'top-down' approach which consists of the following steps:

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies by control effectiveness;

(4) Evaluate control options; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses (specifically step 4) must take into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to degradation of air quality, thereby protecting public health and the environment. This BACT determination is based on the following information:

(1) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;

(2) EPA and State air quality permits;

(3) Communications with control device equipment manufacturers;

(4) The EPA New Source Review website;

(5) Technical books and articles; and

(6) Guidance documents from, and communications with, state agencies.

BACT for PM/PM10 – Charging, Melting, Ladle Metallurgy, Holding, and Transfer Operations (EU-2)

One (1) gray iron charging, melting, ladle metallurgy, holding and transfer system; identified as EU-2; constructed in 1995; a nominal capacity of 36 tons of metal per hour; a maximum capacity of 45 tons of metal per hour; emissions controlled by baghouse DC-2; emissions exhaust to stack S-2. The system consists of the following equipment/operations:

(1) One (1) furnace charging operation;

(2) Three (3) electric induction furnaces;

(3) One (1) ladle metallurgical station; and

(4) One (1) electric holding furnace.

Note that the metallurgy, holding and transfer operations are evaluated as a single operation since they are performed in conjunction with the electric induction furnaces (melting operations). The charging operation is initially evaluated separately from the melting, metallurgy, holding and transfer operations because there are existing BACT determinations specific to only charging operations.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from the charging, melting, metallurgy and holding operations could be controlled with a:

(a) Fabric filter collector (baghouse),

(b) Electrostatic precipitator (ESP),

(c) Wet scrubber, or

(d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

(a) Fabric Filer Collector (i.e. Baghouse):
A review of the EPA's technical bulletins and technology fact sheets located at:

www.epa.gov/ttn/catc/products.html; and

http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/index.html

state that fabric filter collectors demonstrate excellent effectiveness and reliability when properly designed and operated to collect dry particulates. A collector will generally have an extremely high particulate matter collection efficiency for relatively minimal cost.

Commonly known as baghouses, fabric collectors use filtration to separate dust particulates from dry air streams. Dust-laden gases enter the baghouse and pass

through fabric bags that act as filters. The bags can be of woven or felted cotton, synthetic, or glass-fiber material in either a tube or envelope shape.

The bags provide a surface on which dust particulates collect and the formation of the dust cake eventually increases the resistance to gas flow so the filter must be periodically cleaned.

The most recent BACT determinations listed in the RBLC require the use of fabric filter collectors.

(b) Electrostatic Precipitator (ESP):
ESPs use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge. This operational problem drastically lowers the efficiency of the ESP.

Therefore, an ESP is considered technically infeasible for controlling particulate emissions from the charging, melting, ladle metallurgy and holding operations (EU-2).

(c) Wet scrubbers and High Efficiency Cyclones:
While scrubbers and cyclones are capable of controlling PM/PM10 emissions from charging, melting, metallurgy, holding and transfer operations (EU-2), they have lower control efficiencies than that of fabric filters. As a result, further review of these control options is not necessary.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM/PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
High Efficiency Cyclone	Less than 90%
Wet Scrubber	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

Furnace Charging - Filterable PM/PM10 Emissions

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for furnace charging operations. Specifically, the OAQ reviewed 39 facilities and 60 processes listed under RBLC Code 81.400 (Iron Foundries) and 9 facilities and 27 processes listed under RBLC Code 81.390 (Steel Foundries - Other) that implement BACT to control PM/PM10 emissions from furnace charging operations.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from furnace charging operations.

Of the facilities and processes reviewed, only three (3) sources were identified that address emissions from furnace charging operations:

Source	RBLC ID	Date of permit issuance	Filterable PM/PM10 BACT limit (gr/dscf)	PM/PM10 Control
Thyssen Krupp	WI-0236	2/17/06	0.005	Baghouse
Ardmore Foundry	OK-0039	7/11/00	0.005	Baghouse
Thyssen Krupp - Waupaca (IN)	NA	1/19/96	0.005	Baghouse
MTA - Proposed	*NA*	*Pending*	*0.003*	*Baghouse*

(IN) - Located in Indiana

MTA's proposed filterable PM/PM10 BACT limit of 0.003 gr/dscf is more stringent than limitations established in recent BACT determinations for similar operations at gray iron foundries.

Melting (includes Metallurgy, Holding and Transfer) - Filterable PM/PM10 Emissions

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for melting operations using electric induction furnaces. Specifically, the OAQ reviewed 2 facilities and 2 processes listed in the EPA's RBLC (RACT-BACT-LAER Clearinghouse) under the RBLC Code 81.420 (Iron Foundries - Induction Furnaces) that implement BACT to control PM/PM10 emissions from electric induction furnaces.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from melting operations. Four (4) sources were identified. However, all four use cupolas instead of electric induction furnaces.

Of the facilities and processes reviewed, only two (2) records were identified that address PM/PM10 emissions from melting operations using electric induction furnaces:

Source	RBLC ID	Date of permit issuance	Filterable PM/PM10 BACT limit (gr/dscf)	PM/PM10 Control
Ardmore Foundry	OK-0077	9/4/01	0.0045	Baghouse
Aarrow Cast	WI-0161	10/1/98	0.010	Baghouse
MTA - Proposed	*NA*	*Pending*	*0.003*	*Baghouse*

MTA's proposed filterable PM/PM10 BACT limit of 0.003 gr/dscf is more stringent than limitations established in recent BACT determinations for similar operations at gray iron foundries.

Note that for EU-2 (exhausting to stack S-2):

0.003 gr/dscf x 140,000 dscf/min x 0.00856 lb-min/gr-hr =
3.6 lb filterable PM/PM10 per hour

From this point on, the charging operations are evaluated with the melting, metallurgy, holding and transfer operations because these operations exhaust to the same stack.

Charging, Melting, Metallurgy, Holding and Transfer - Filterable Plus Condensable PM10 Emissions

As indicated above, the RBLC does not contain any BACT determinations regarding condensable PM10 from charging, melting, metallurgy, holding or transfer operations. As a result, the OAQ reviewed condensable PM10 stack test results from similar gray iron foundries in Indiana to evaluate the limit proposed by MTA.

The following is a summary of the respective test results from melt systems:

Source*	Process (Control)	Test Date	Condensable PM10 result (lb/ton)
Thyssen Krupp - Waupaca (IN)	Melt System (None)	April 2002	0.053
MTA**	Melt System (None)	February 2002	0.26
		Average	0.156

* These sources do not have condensable PM10 limits in their respective permits.
** When the testing was completed, the source was owned by Auburn Foundry. See the TSD for more information.

The most stringent filterable PM10 BACT limit established in the RBLC is 0.0045 gr/dscf (Ardmore Foundry). Application of that limit to MTA's respective operations (baghouse airflow of 140,000 dscfm and a maximum production rate of 45 ton/hr) is equivalent to a filterable PM10 emission rate of 0.08 lb/ton.

The average condensable PM10 emission rate from testing at similar sources is 0.156 lb/ton.

<u>MTA has proposed a filterable plus condensable PM10 BACT limit of 0.06 lb/ton.</u> This proposed limit is more stringent than the sum of the most stringent equivalent filterable PM10 BACT emission rate and the average of the filterable plus condensable PM10 test results from similar operations at gray iron foundries:

0.08 lb/ton (Filterable PM10 emission rate based on the most stringent BACT limit and MTA's operational characteristics)

+ 0.156 lb/ton (Average of filterable plus condensable PM10 test results)

= 0.236 lb/ton.

0.06 lb/ton < 0.236 lb/ton

In order to make the proposed lb/ton filterable plus condensable PM10 limit practically enforceable and to ensure the accuracy of the emissions modeling described in Appendix C, an iron production limit must be established. The maximum iron production capacity of the charging, melting, metallurgy and holding operations is 45 tons per hour. MTA has proposed an iron production limit of 750 tons/day and 220,000 tons per twelve consecutive month period.

MTA has proposed to use a baghouse to control PM/PM10 emissions from the charging, melting, metallurgy, holding and transfer operations (EU-2). Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the charging, melting, metallurgy and holding operations (EU-2, exhausting to stack S-2):

Pursuant to 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following:

(a) PM/PM10 emissions from the charging, melting, metallurgy, holding and transfer operations (EU-2) shall be controlled by a baghouse.

(b) The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-2: Charging, melting, metallurgy, holding and transfer operations (EU-2)	0.003	3.6	0.06

(c) The total iron production of the electric induction furnaces (comprising EU-2) shall not exceed 750 tons per day and 220,000 tons per twelve consecutive month period with compliance determined at the end of each month.

BACT for PM/PM10 – Pouring and Casting Operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4)

PM/PM10 emissions from pouring and casting are the result of oxidized chemical binders and organic material in the molds and cores caused by the heat of the molten metal. The following units are covered in this BACT determination:

One (1) Line 1 pouring and casting operation; identified as EU-3a1; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 2 pouring and casting operation; identified as EU-3a2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 3 pouring and casting operation; identified as EU-3a3; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 4 pouring and casting operation; identified as EU-3a4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from the pouring and casting operations could be controlled with a:

(a) Fabric filter collector (baghouse),

(b) Electrostatic precipitator (ESP),

(c) Wet scrubber, or

(d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

The OAQ has determined that all of the control options are technically feasible.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM/PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
Electrostatic Precipitator	90-99%
High Efficiency Cyclone	Less than 90%
Wet Scrubber	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

Pouring and Casting - Filterable PM/PM10 Emissions

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for pouring and casting operations. Specifically, the OAQ reviewed 11 facilities and 24 processes listed under the RBLC Code 81.450 (Iron Foundries – Pouring and Cooling) that implemented BACT to control PM/PM10 emissions. Note that the RBLC presents records for pouring operations and cooling operations together.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from pouring and casting operations. Only one (1) source was identified.

Of these facilities and processes reviewed, the following six (6) sources were identified that address PM/PM10 emissions from pouring and casting:

Source	RBLC ID	Date of permit issuance	Filterable PM/PM10 BACT limit (gr/dscf) *	Control
Thyssen Krupp	WI-0238	1/12/06	0.005	Baghouse
Thyssen Krupp	WI-0237	12/5/05	0.005	Baghouse
Grede Foundries	MI-0370	11/25/04	0.010	none
Waupaca Foundry	WI-0190	6/11/02	0.005	Baghouse
Waupaca Foundry	WI-0160	12/22/99	0.005	Baghouse
Thyssen Krupp - Waupaca (IN)	NA	1/19/96	0.005	Baghouse
MTA - Proposed	*NA*	*NA*	*0.003*	*Baghouse*

* Arranged chronologically, with the most recent determination at top.
(IN) - Located in Indiana.

MTA's proposed filterable PM/PM10 BACT limit of 0.003 gr/dscf is more stringent than limitations established in recent BACT determinations for similar operations at gray iron foundries.

Note that for EU-3a1, EU-3a2, EU-3a3 and EU-3a4 (exhausting to stack S-2):
0.003 gr/dscf x 70,000 dscf/min x 0.00856 lb-min/gr-hr =
1.8 lb filterable PM/PM10 per hour

Pouring and Casting - Filterable Plus Condensable PM10 Emissions

As indicated above, the RBLC does not contain any BACT determinations regarding condensable PM10 from pouring and casting operations. As a result, the OAQ reviewed

condensable PM10 stack test results from similar iron foundries in Indiana to evaluate the limit proposed by MTA.

The following is a summary of the respective test results from pouring and casting:

Source*	Process (Control)	Test Date**	Condensable PM10 result (lb/ton)
MTA***	Pouring and Casting (None)	February 2002	0.18
Dalton Foundry	Pouring and Casting (None)	June 2001	0.16
Rochester Metals	Pouring & Casting (None)	August 2000	0.14
MTA***	Pouring and Casting (None)	September 1999	0.15
		Average	0.158

* These sources do not have condensable PM10 limits in their respective permits.
** Arranged chronologically, with the most recent result at top.
*** When the testing was completed, the source was owned by Auburn Foundry. See the TSD for more information.

The most stringent filterable PM10 BACT limit established in the RBLC is 0.005 gr/dscf. Application of that limit to MTA's respective operations (baghouse airflow of 70,000 dscfm and a production rate of 45 ton/hr) is equivalent to a filterable PM10 emission rate of 0.067 lb/ton.

The average condensable PM10 emission rate from testing at similar sources is 0.158 lb/ton.

MTA has proposed a filterable plus condensable PM10 BACT limit of 0.06 lb/ton. This proposed limit is more stringent than the sum of the most stringent equivalent filterable PM10 BACT emission rate and the average of the filterable plus condensable PM10 test results from similar operations at gray iron foundries:

0.067 lb/ton (Filterable PM10 emission rate based on the most stringent BACT limit and MTA's operational characteristics)

+ 0.158 lb/ton (Average of filterable plus condensable PM10 test results)

= 0.225 lb/ton.

0.06 lb/ton < 0.225 lb/ton

In order to make the proposed lb/ton filterable plus condensable PM10 limit practically enforceable and to ensure the accuracy of the emissions modeling described in Appendix C, an iron production limit must be established. The maximum iron production capacity of the pouring and casting operations is 45 tons per hour. MTA has proposed an iron production limit of 750 tons per day and 220,000 tons per twelve consecutive month period.

MTA has proposed to use a baghouse to control PM/PM10 emissions from the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4). Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4, exhausting to stack S-2):

Pursuant to 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following:

(a) PM/PM10 emissions from the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4) shall be controlled by a baghouse.

(b) The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-2: Pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4)	0.003	1.8	0.06

Note that the allowable filterable PM/PM10 emissions are based on the characteristics of baghouse DC-2 controlling emissions from the charging, melting, metallurgy, holding and transfer operations (EU-2) AND the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4). As a result, the filterable PM/PM10 emission limits apply (in aggregate) to all of these operations whereas the filterable plus condensable emission limit applies to the charging, melting, metallurgy, holding and transfer operations (EU-2) and pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4), separately.

BACT for PM/PM10 – Casting Cooling Operations (EU-3b1, EU-3b2, EU-3b3 and EU-3b4)

Like with pouring operations, PM/PM10 emissions from casting cooling are the result of oxidized chemical binders and organic material in the molds and cores caused by the heat of the molten metal. The following units are covered by this BACT determination:

One (1) Line 1 casting cooling operation; identified as EU-3b1; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3b.

One (1) Line 2 casting cooling operation; identified as EU-3b2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3b.

One (1) Line 3 casting cooling operation; identified as EU-3b3; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3d.

One (1) Line 4 casting cooling operation; identified as EU-3b4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3d.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from casting cooling operations could be controlled with a:

(a) Fabric filter collector (baghouse),

(b) Electrostatic precipitator (ESP),

(c) Wet scrubber, or

(d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

The OAQ has determined that all of the control options are technically feasible.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM/PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
Electrostatic Precipitator	90-99%
High Efficiency Cyclone	Less than 90%
Wet Scrubber	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

Economic Analysis

MTA provided IDEM with a thorough economic analysis of the most effective, technically feasible control option for the casting cooling operations (EU-3b1, EU-3b2, EU-3b3, and EU-3b4) - see Appendix C for more information. The analysis estimates the total costs associated with the PM/PM10 control equipment, including the total capital investment of the various components intrinsic to the complete system, the estimated annual operating costs, and indirect annual costs. All costs, except for direct installation costs, were calculated using the methodology described in Section 6, Chapter 1 of the "EPA Air Pollution Control Cost Manual, Sixth Edition" (document # EPA 452-02-001). Direct capital cost is based on a vendor quote. Annualized costs are based on an interest rate of 6% and an equipment life of 10 years.

The basis of cost effectiveness, used to evaluate the control option, is the ratio of the annualized cost to the amount of PM/PM10 (tons) removed per year. A summary of the cost figures determined in the analysis is provided in the table below:

Option	Total Capital Investment ($)	Total Annualized Cost ($/yr)	Potential PM/PM10 removal from add-on control (ton/yr)	Cost Effectiveness ($/ton PM/PM10 removed)
Fabric Filter Collector (Baghouse)	$478,296	$367,931	17.2	$21,428

As the table above indicates, the use of a fabric filter collector to control PM/PM10 emissions from casting cooling operations (EU-3b1, EU-3b2, EU-3b3, and EU-3b4) is not cost effective.

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, fabric filter collectors are the most cost-effective and efficient control option for removing particulates. Therefore, economic analyses of the other technically feasible control options were not conducted because those options would be less cost effective.

Casting Cooling Operations - Filterable PM/PM10 Emissions

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for casting cooling operations. Specifically, the OAQ reviewed 11 facilities and 24 processes listed under the RBLC Code 81.450 (Iron Foundries – Pouring and Cooling) that implemented BACT to control PM/PM10 emissions. The RBLC does not provide separate records for pouring and casting cooling operations.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from casting cooling operations.

Of these facilities and processes reviewed, the following six (6) sources were identified that address PM/PM10 emissions from casting cooling:

Source	RBLC ID	Date of permit issuance	Filterable PM/PM10 BACT limit (gr/dscf) *	Control
Thyssen Krupp	WI-0238	1/12/06	0.005	Baghouse
Thyssen Krupp	WI-0237	12/5/05	0.005	Baghouse
Grede Foundries	MI-0370	11/25/04	0.010	none
Waupaca Foundry	WI-0190	6/11/02	0.005	Baghouse
Waupaca Foundry	TN-0131	8/24/01	0.005	Baghouse
Thyssen Krupp - Waupaca (IN)	NA	1/19/96	0.005	Baghouse
MTA - Proposed	*NA*	*NA*	*0.01 ** *	*none*

* Arranged chronologically, with the most recent determination at top.
** The proposed 0.01 gr/dscf BACT limit is equivalent to the PM limitation required pursuant to 40 CFR Part 63, Subpart EEEEE.
IN - Located in Indiana.

MTA's proposed filterable PM/PM10 BACT limit of 0.01 gr/dscf, with no add-on control, is less stringent than limitations established in recent BACT determinations for similar operations at gray iron foundries. However, as explained above, all technically feasible control options are not cost effective.

Note that for EU-3b1 and EU-3b2 (exhausting to stack S-3b):
0.01 gr/dscf x 25,000 dscf/min x 0.00856 lb-min/gr-hr =
2.14 lb filterable PM/PM10 per hour

Note that for EU-3b3 and EU-3b4 (exhausting to stack S-3d):
0.01 gr/dscf x 25,000 dscf/min x 0.00856 lb-min/gr-hr =
2.14 lb filterable PM/PM10 per hour

Casting Cooling Operations - Filterable Plus Condensable PM10 Emissions

As indicated above, the RBLC does not contain any BACT determinations regarding condensable PM10 from casting cooling operations. As a result, the OAQ reviewed condensable PM10 stack test results from similar gray iron foundries in Indiana to evaluate the limit proposed by MTA.

The following is a summary of the respective results from casting cooling:

Source *	Process (Control)	Test Date **	Condensable PM10 result (lb/ton)
MTA ***	Casting Cooling (None)	February 2002	0.51
Dalton Foundry	Casting Cooling (None)	June 2001	0.188
Rochester	Pouring & Cooling (None)	August 2000	0.14
		Average	0.279

* These sources do not have condensable PM10 limits in their respective permits.
** Arranged chronologically, with the most recent determination at top.
*** When the testing was completed, the source was owned by Auburn Foundry. See the TSD for more information.

The most stringent filterable PM10 BACT limit established in the RBLC is 0.005 gr/dscf . Application of that limit to MTA's respective operations (exhaust airflow of 50,000 dscfm and a production rate of 45 ton/hr) is equivalent to a filterable PM10 emission rate of 0.047 lb/ton.

The average condensable PM10 emission rate from testing at similar sources is 0.279 lb/ton.

MTA has proposed a filterable plus condensable PM10 BACT limit of 0.09 lb/ton. This proposed limit is more stringent than the sum of the most stringent equivalent filterable PM10 BACT emission rate and the average of the filterable plus condensable PM10 test results from similar operations at gray iron foundries:

0.047 lb/ton (Filterable PM10 emission rate based on the most stringent BACT limit and MTA's operational characteristics)

+ 0.279 lb/ton (Average of filterable plus condensable PM10 test results)

= 0.326 lb/ton.

0.09 lb/ton < 0.326 lb/ton

In order to make the proposed lb/ton filterable plus condensable PM10 limit practically enforceable and to ensure the accuracy of the emissions modeling described in Appendix C, an iron production limit must be established. The maximum iron production capacity of the charging, melting, metallurgy and holding operations is 45 tons per hour. MTA has proposed an iron production limit of 750 tons per day and 220,000 tons per twelve consecutive month period.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the casting cooling operations (EU-3b1, EU-3b2, EU-3b3 and EU-3b4, exhausting to stacks S-3b and S-3d):

Pursuant to 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following:

The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-3b: Line 1 and Line 2 casting cooling operations (EU-3b1 and EU-3b2)	0.01	2.14	0.09
Stack S-3d: Line 3 and Line 4 casting cooling operations (EU-3b3 and EU-3b4)	0.01	2.14	0.09

BACT for PM/PM10 – Shakeout Operations (EU-4 and EU-5a) and Return/Waste Sand System (EU-5bc)

The following units are covered by this BACT determination:

One (1) Line 3 and Line 4 shakeout operation; identified as EU-4; constructed in 1995; a nominal capacity of 19 tons of metal and 110 tons of sand molds and cores per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand molds and cores per hour; emissions controlled by baghouse DC-4; exhausting to stack S-4.

One (1) Line 1 and Line 2 shakeout operation; identified as EU-5a; constructed in 1995; a nominal capacity of 18 tons of metal and 110 tons of sand molds and cores per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand molds and cores per hour; emissions controlled by baghouse DC-5; exhausting to stack S-5.

One (1) return sand/waste sand system; identified as EU-5bc; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-5; exhausting to stack S-5.

The conveyance and subsequent shakeout of metal castings results in filterable and condensable particulate emissions. MTA currently controls emissions from EU-4 with baghouse DC-4. MTA currently controls emissions from EU-5a and EU-5bc with baghouse DC-5. As a result, baghouse DC-5 has a greater airflow and a greater emission rate than DC-4. EU-5a and EU-5bc are evaluated together for the purposes of the following BACT determination.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from shakeout operations could be controlled with a:

(a) Fabric filter collector (baghouse),

(b) Electrostatic precipitator (ESP),

(c) Wet scrubber, or

(d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

(a) Fabric Filer Collector (i.e. Baghouse):
A review of the EPA's technical bulletins and technology fact sheets located at:

www.epa.gov/ttn/catc/products.html; and

http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/index.html

state that fabric filter collectors demonstrate excellent effectiveness and reliability when properly designed and operated to collect dry particulates. A collector will generally have an extremely high particulate matter collection efficiency for relatively minimal cost.

Commonly known as baghouses, fabric collectors use filtration to separate dust particulates from dry air streams. Dust-laden gases enter the baghouse and pass through fabric bags that act as filters. The bags can be of woven or felted cotton, synthetic, or glass-fiber material in either a tube or envelope shape.

The bags provide a surface on which dust particulates collect and the formation of the dust cake eventually increases the resistance to gas flow so the filter must be periodically cleaned.

The most recent BACT determinations listed in the RBLC require the use of fabric filter collectors.

(b) Electrostatic Precipitator (ESP):
ESPs use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge. This operational problem drastically lowers the efficiency of the ESP.

Therefore, an ESP is considered technically infeasible for controlling particulate emissions from the shakeout operations (EU-4 and EU-5a).

(c) Wet scrubbers and High Efficiency Cyclones:
While scrubbers and cyclones are capable of controlling PM emissions from the shakeout operations (EU-4 and EU-5a), they have lower control efficiencies than that of fabric filters. As a result, further review of these control options is not necessary.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM/PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
High Efficiency Cyclone	Less than 90%
Wet Scrubber	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

Shakeout (EU4) Filterable PM/PM10 Emissions

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for shakeout operations. Specifically, the OAQ reviewed 13 facilities and 22 processes listed under the RBLC Code 81.460 (Iron Foundries – Shakeout) that implement BACT to control PM/PM10 emissions.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from casting cooling operations.

Of these facilities and processes reviewed, the following six (6) sources were identified that address PM/PM10 emissions from shakeout:

Source	RBLC ID	Date of permit issuance	Filterable PM/PM10 BACT limit (gr/dscf) *	Control
Thyssen Krupp	WI-0238	1/12/06	0.005	Baghouse
Thyssen Krupp	WI-0237	12/5/05	0.005	Baghouse
Grede Foundries	MI-0370	11/25/04	unknown	Wet Scrubber
Waupaca Foundry	WI-0190	6/11/02	0.007	Baghouse
Waupaca Foundry	TN-0131	8/24/01	0.005	Baghouse
Thyssen Krupp - Waupaca (IN)	NA	1/19/96	0.005	Baghouse
MTA - Proposed	*NA*	*NA*	*0.003*	*Baghouse*

* Arranged chronologically, with the most recent determination at top.
(IN) - Located in Indiana.

MTA's proposed filterable PM/PM10 BACT limit of 0.003 gr/dscf is more stringent than limitations established in recent BACT determinations for similar operations at gray iron foundries.

Note that for EU-4:
0.003 gr/dscf x 80,000 dscf/min x 0.00856 lb-min/gr-hr =
2.06 lb filterable PM/PM10 per hour

Note that for EU-5a and EU-5bc:
0.003 gr/dscf x 130,000 dscf/min x 0.00856 lb-min/gr-hr =
3.34 lb filterable PM/PM10 per hour

Shakeout (EU-4) - Filterable Plus Condensable PM10 Emissions

As indicated above, the RBLC does not contain any BACT determinations regarding condensable PM10 from shakeout operations. As a result, the OAQ reviewed condensable PM10 stack test results from similar iron foundries in Indiana. The following is a summary of the respective results from shakeout to evaluate the limit proposed by MTA:

Source	Process	Test Date *	Condensable PM10 result (lb/ton)
MTA **	Shakeout	February 2002	1.28
MTA ** (Lines 3/4)	Shakeout	September 1999	1.26
MTA ** (Lines 1/2)	Shakeout	September 1999	0.58
		Average	1.04

* Arranged chronologically, with the most recent result at top.
** When the testing was completed, the source was owned by Auburn Foundry. See the TSD for more information.

The most stringent filterable PM/PM10 BACT limit established in the RBLC is 0.005 gr/dscf. Application of that limit to MTA's respective operations (baghouse airflow of 80,000 dscfm and a maximum production rate of 22.5 ton/hr) is equivalent to a filterable PM/PM10 emission rate of 0.152 lb/ton.

The average condensable PM10 emission rate from testing at similar sources is 1.04 lb/ton.

MTA has proposed a filterable plus condensable PM10 BACT limit of 0.10 lb/ton. This proposed limit is more stringent than the sum of the most stringent equivalent filterable PM10 BACT emission rate and the average of the filterable plus condensable PM10 test results from similar operations at gray iron foundries:

0.152 lb/ton (Filterable PM10 emission rate based on the most stringent BACT limit and MTA's operational characteristics)

+ 1.04 lb/ton (Average of filterable plus condensable PM10 test results)

= 1.19 lb/ton.

0.10 lb/ton < 1.19 lb/ton

Shakeout (EU-5a) and Return/Waste Sand Conveyance (EU-5bc) - Filterable Plus Condensable PM10 Emissions

As indicated above, the RBLC does not contain any BACT determinations regarding condensable PM10 from shakeout operations. As a result, the OAQ reviewed condensable PM10 stack test results from similar iron foundries in Indiana. The following is a summary of the respective results from shakeout to evaluate the limit proposed by MTA:

Source	Process	Test Date *	Condensable PM10 result (lb/ton)
MTA **	Shakeout	February 2002	1.28
MTA ** (Lines 3/4)	Shakeout	September 1999	1.26
MTA ** (Lines 1/2)	Shakeout	September 1999	0.58
		Average	1.04

* Arranged chronologically, with the most recent result at top.
** When the testing was completed, the source was owned by Auburn Foundry. See the TSD for more information.

The most stringent filterable PM/PM10 BACT limit established in the RBLC is 0.005 gr/dscf. Application of that limit to MTA's respective operations (baghouse airflow of 130,000 dscfm and a maximum production rate of 22.5 ton/hr) is equivalent to a filterable PM/PM10 emission rate of 0.247 lb/ton.

The average condensable PM10 emission rate from testing at similar sources is 1.04 lb/ton.

MTA has proposed a filterable plus condensable PM10 BACT limit of 0.12 lb/ton. This proposed limit is more stringent than the sum of the most stringent equivalent filterable PM10 BACT emission rate and the average of the filterable plus condensable PM10 test results from similar operations at gray iron foundries:

0.247 lb/ton (Filterable PM10 emission rate based on the most stringent BACT limit and MTA's operational characteristics)

+ 1.04 lb/ton (Average of filterable plus condensable PM10 test results)

= 1.29 lb/ton.

0.12 lb/ton < 1.29 lb/ton

In order to make the proposed lb/ton filterable plus condensable PM10 limits practically enforceable and to ensure the accuracy of the emissions modeling described in Appendix C, an iron production limit must be established. The combined maximum iron production from the shakeout operations is 45 tons per hour. MTA has proposed an iron production limit of 750 tons per day and 220,000 tons per twelve consecutive month period.

MTA has proposed to use a baghouse to control PM/PM10 emissions from the shakeout and return/waste sand operations (EU-4, EU-5a and EU-5bc). Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the shakeout operations (EU-4 and EU-5a, exhausting to stack S-4) and the return/waste sand system (EU-5bc, exhausting to stack S-5):

Pursuant to 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following:

(a) PM/PM10 emissions from the Line 3 and Line 4 shakeout operation (EU-4) shall be controlled by a baghouse.

(b) PM/PM10 emissions from the Line 1 and Line 2 shakeout operation (EU-5a) and return sand and waste sand system (EU-5bc) shall be controlled by a baghouse.

(c) The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	Filterable PM/PM10 Emissions		Filterable Plus Condensable PM10 Emissions
	(gr/dscf)	(lb/hr)	(lb/ton iron produced)
Stack S-4: Line 3 and Line 4 shakeout operation (EU-4)	0.003	2.06	0.10
Stack S-5: Line 1 and Line 2 shakeout operation (EU-5a) and return sand and waste sand system (EU-5bc)	0.003	3.34	0.12

BACT for PM/PM10 – Casting Finishing Operations (EU-6, EU-16 through EU-19 and EU-7)

Shot blasting and grinding machines are used to clean metal castings. Condensable particulates are not generated by the finishing operations.

The following units are covered by this BACT determination:

One (1) shot reblast unit; identified as EU-6; constructed in 1997; a nominal capacity of 1.12 tons of iron castings per hour; a maximum capacity of 5 tons of iron castings per hour; emissions controlled by baghouse DC-6; exhausting to stack S-6.

One (1) shot blast system; consisting of four (4) shot blast units; identified as EU-16 through EU-19; constructed in 1999; a total nominal capacity of 27 tons of iron castings per hour; a total maximum capacity of 32 tons of iron castings per hour; with emissions controlled by baghouse DC-3; exhausting to stack S-15.

Eight (8) grinders; identified together as EU-7; constructed in 1999; a combined nominal capacity of 25 tons of iron castings per hour; a combined maximum capacity of 32 tons of iron castings per hour; emissions controlled by individual dust collectors; exhausting indoors to general ventilation.

Note that the grinding operations (EU-7) are controlled by small (<4,000 acfm) dust collectors that exhaust indoors.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from casting finishing operations could be controlled with a:

(a) Fabric filter collector (baghouse),

(b) Electrostatic precipitator (ESP),

(c) Wet scrubber, or

(d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

(a) Fabric Filer Collector (i.e. Baghouse):
A review of the EPA's technical bulletins and technology fact sheets located at:

www.epa.gov/ttn/catc/products.html; and

http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/index.html

state that fabric filter collectors demonstrate excellent effectiveness and reliability when properly designed and operated to collect dry particulates. A collector will generally have an extremely high particulate matter collection efficiency for relatively minimal cost.

Commonly known as baghouses, fabric collectors use filtration to separate dust particulates from dry air streams. Dust-laden gases enter the baghouse and pass through fabric bags that act as filters. The bags can be of woven or felted cotton, synthetic, or glass-fiber material in either a tube or envelope shape.

The bags provide a surface on which dust particulates collect and the formation of the dust cake eventually increases the resistance to gas flow so the filter must be periodically cleaned.

The most recent BACT determinations listed in the RBLC require the use of fabric filter collectors.

(b) Electrostatic Precipitator (ESP):
ESPs use an electrostatic field to charge particulate matter contained in the gas stream and then attract and collect the particles on a collection surface of opposite charge. While ESPs have a very high removal efficiency (99% or better) for many sources of particulate, they have been proven as unsuitable for applications involving particulate with a high concentration of iron compounds. Due to the electromagnetic properties of small charged particles of iron compounds in an electric field, the particles adhere very strongly to the collection plates of an ESP and are extremely difficult to dislodge. This operational problem drastically lowers the efficiency of the ESP.

Therefore, an ESP is considered technically infeasible for controlling particulate emissions from the casting finishing operations (EU-6, EU-16 through EU-19 and EU-7).

(c) Wet scrubbers and High Efficiency Cyclones:
While scrubbers and cyclones are capable of controlling PM emissions from casting finishing operations (EU-6, EU-16 through EU-19 and EU-7), they have lower control efficiencies than that of fabric filters. As a result, further review of these control options is not necessary.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM/PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
High Efficiency Cyclone	Less than 90%
Wet Scrubber	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for casting finishing operations. Specifically, the OAQ reviewed 26 facilities and 45 processes listed under the RBLC Code 81.490 (Iron Foundries – Other Operations) that implement BACT to control PM/PM10 emissions.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from casting finishing operations.

Of these facilities and processes reviewed, the following seven (7) sources were identified that address PM/PM10 emissions from casting finishing operations:

Source	RBLC ID	Date of permit issuance	PM/PM10 BACT limit (gr/dscf) *	Control
Thyssen Krupp	WI-0239	1/12/06	0.005	Baghouse
Thyssen Krupp	WI-0238	1/12/06	0.005	Baghouse
Thyssen Krupp	WI-0237	12/5/05	0.005	Baghouse
INTAT Precision (IN)	NA	9/2/03	0.003	Baghouse
Waupaca Foundry	WI-0160	12/22/99	0.005	Baghouse
Waupaca Foundry	IN-0078	2/4/98	0.005	Baghouse
Thyssen Krupp - Waupaca (IN)	NA	1/19/96	0.005	Baghouse
MTA - Proposed	*NA*	*NA*	*0.003*	*Baghouse*

* Arranged chronologically, with the most recent determination at top.
(IN) - Located in Indiana

MTA's proposed PM/PM10 BACT limit of 0.003 gr/dscf is as stringent as the most stringent limitation established in a recent BACT determination for similar operations at a gray iron foundry.

Note that for EU-16 through EU-19:
0.003 gr/dscf x 37,000 dscf/min x 0.00856 lb-min/gr-hr =
0.95 lb PM/PM10 per hour

Note that for EU-6:
0.003 gr/dscf x 6,000 dscf/min x 0.00856 lb-min/gr-hr =
0.15 lb PM/PM10 per hour

A pound per hour emission limitation is not necessary for the grinders (EU-7) because they exhaust indoors and have low potential emissions.

MTA has proposed to use baghouses and dust collectors to control PM/PM10 emissions from the shot blast and grinding (casting finishing) operations (EU-6, EU-16 through EU-19, and EU-7). Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the casting finishing operations (EU-6, EU-16 through EU-19 and EU-7):

Pursuant to 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following:

(a) PM/PM10 emissions from the shot reblast unit (EU-6) shall be controlled by a baghouse.

(b) PM/PM10 emissions from the shot blast system (EU-16 through EU-19) shall be controlled by a baghouse.

(c) PM/PM10 emissions from the grinders (EU-7) shall be controlled by dust collectors and exhaust indoors.

(d) The PM/PM10 emissions from the following facilities are limited, as indicated in the table below:

Stack #: Process/facility Description (ID)	PM/PM10 Emissions	
	(gr/dscf)	(lb/hr)
Stack S-6: Shot reblast unit (EU-6)	0.003	0.15
Stack S-15: Shot blast system (EU-16 through EU-19)	0.003	0.95
Exhausts indoors: Grinders (EU-7)	0.003	-

BACT for PM/PM10 – Sand Handling Operations (EU-1a)

Sand-handling operations receive sand directly from the shakeout operations or from an intermediate storage area. The conveyance, screening and separation processes result in the generation of PM/PM10 emissions. Condensable particulates are not generated by the sand handling operations.

The following unit is covered by this BACT determination:

One (1) sand handling system; identified as EU-1a; constructed in 1995; a nominal capacity of 220 tons of sand per hour; a maximum capacity of 250 tons of sand per hour; emissions controlled by baghouse DC-1; exhausting to stack S-1.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors* and the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, PM/PM10 emissions from sand handling operations could be controlled with a:

(a) Fabric filter collector (baghouse),

(b) Electrostatic precipitator (ESP),

(c) Wet scrubber, or

(d) High efficiency cyclone.

Step 2 – Eliminate Technically Infeasible Control Options

The OAQ has determined that all of the control options are technically feasible.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated PM/PM10 Control Efficiency
Fabric Filter Collector (i.e. Baghouse)	Greater than 99%
Electrostatic Precipitator	90-99%
High Efficiency Cyclone	Less than 90%
Wet Scrubber	Less than 90%

These estimated efficiencies are based on information provided in the EPA's Air Pollution Control Technology Fact Sheets located at www.epa.gov/ttn/catc/products.html.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established PM/PM10 BACT limitations for sand handling operations. Specifically, the OAQ reviewed 17 facilities and 21 processes listed under the RBLC Code 81.440 (Iron Foundries – Sand, Core and Mold Making Operations) that implement BACT to control PM/PM10 emissions.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control PM/PM10 emissions from sand handling operations.

Of these facilities and processes reviewed, the following six (6) sources were identified that address PM/PM10 emissions from sand handling:

Source	RBLC ID	Date of permit issuance	PM/PM10 BACT limit (gr/dscf)	Control
Thyssen Krupp	WI-0238	1/12/06	0.005	Baghouse
Thyssen Krupp	WI-0237	12/5/05	0.005	Baghouse
Waupaca Foundry	TN-0132	8/24/01	0.005	Baghouse
Waupaca Foundry	IN-0094	6/5/01	0.005	Baghouse
Waupaca Foundry	TN-0064	4/28/00	0.005	Baghouse
Thyssen Krupp - Waupaca (IN)	NA	1/19/96	0.005	Baghouse
MTA - Proposed	*NA*	*NA*	*0.003*	*Baghouse*

IN - Located in Indiana

MTA's proposed PM/PM10 BACT limit of 0.003 gr/dscf is more stringent than the most stringent limitation established in a recent BACT determination for similar operations at a gray iron foundry.

Note that for EU-1a:

0.003 gr/dscf x 25,000 dscf/min x 0.00856 lb-min/gr-hr =
0.64 lb PM/PM10 per hour

MTA has proposed to use a baghouse to control PM/PM10 emissions from the sand handling operations (EU-1a). Since this control option provides the highest level of control, further review (including cost effectiveness) is not necessary.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for the sand handling operations (EU-1a):

Pursuant to 326 IAC 2-2-3 (PSD - BACT), the Permittee shall comply with the following:

(a) PM/PM10 emissions from the sand handling operations (EU-1a) shall be controlled by a baghouse.

(b) The PM/PM10 emissions from the sand handling operations (EU-1a, stack S-1) shall not exceed 0.003 grains per dry standard cubic foot (gr/dscf) and 0.64 pounds per hour (lb/hr).

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

BACT for PM/PM10 – Fugitives

The PM/PM10 emissions from the various operations at the source result in the generation of fugitive emissions from building openings (e.g. windows and doors).

Step 1 – Identify Control Options

No control options have been identified.

Step 2 – Eliminate Technically Infeasible Control Options

Not applicable. No technically feasible control options have been identified.

Step 3 – Rank Remaining Control Options by Control Effectiveness

Not applicable. No technically feasible control options have been identified.

Step 4 - Evaluate Control Options

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) under the RBLC Code 81.400 (Iron Foundries) for determinations regarding fugitive PM/PM10 emissions. No records were identified.

The OAQ also reviewed recently issued Part 70 and PSD permits for Dalton Corporation, INTAT Precision and ThyssenKrupp – Waupaca. None of those permits contained PM/PM10 BACT limitations regarding fugitive emissions.

Pursuant to 40 CFR 63.7690(a)(7) of the National Emission Standards for Hazardous Air Pollutants (NESHAP): Iron and Steel Foundries, fugitive emissions from an affected source shall not exceed 20% opacity (6 minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

MTA has proposed that PM/PM10 BACT for fugitive emissions to be identical to the respective requirements of 40 CFR Part 63, Subpart EEEEE.

Step 5 – Select BACT

The MACT standard from the applicable NESHAP (40 CFR Part 63, Subpart EEEEE) is the most stringent requirement identified for fugitive emissions. As a result, the Permittee shall comply with the following requirements determined to be PM/PM10 BACT for fugitive emissions:

> Visible emissions of the fugitive emissions from building openings shall not exceed twenty percent (20%) opacity, as determined by a six (6) minute average (24 readings taken in accordance with EPA Method 9, Appendix A), except for one 6-minute average per hour that does not exceed twenty seven percent (27%) opacity.
>
> Compliance with the relevant monitoring provisions of 40 CFR Part 63, Subpart EEEEE will be used to determine compliance with this limit.

BACT for VOC – Pouring and Casting Operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4), Casting Cooling Operations (EU-3b1, EU-3b2, EU-3b3 and EU-3b4) and Shakeout Operations (EU-4 and EU-5a)

The following units are covered in this BACT determination:

One (1) Line 1 pouring and casting operation; identified as EU-3a1; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 2 pouring and casting operation; identified as EU-3a2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 3 pouring and casting operation; identified as EU-3a3; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 4 pouring and casting operation; identified as EU-3a4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 1 casting cooling operation; identified as EU-3b1; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3b.

One (1) Line 2 casting cooling operation; identified as EU-3b2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3b.

One (1) Line 3 casting cooling operation; identified as EU-3b3; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3d.

One (1) Line 4 casting cooling operation; identified as EU-3b4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3d.

One (1) Line 3 and Line 4 shakeout operation; identified as EU-4; constructed in 1995; a nominal capacity of 19 tons of metal and 110 tons of sand molds and cores per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand molds and cores per hour; emissions controlled by baghouse DC-4; exhausting to stack S-4.

One (1) Line 1 and Line 2 shakeout operation; identified as EU-5a; constructed in 1995; a nominal capacity of 18 tons of metal and 110 tons of sand molds and cores per hour; a

maximum capacity of 22.5 tons of metal and 125 tons of sand molds and cores per hour; emissions controlled by baghouse DC-5; exhausting to stack S-5.

Background

VOC emissions from pouring, cooling and shakeout operations are the result of the pyrolysis of organic materials that comprise the mold sand and resin-bonded cores. Hot metal quickly comes in contact with the mold causing the formation of organic gases that are pushed out of the mold through displacement of the cavity space. As the mold cools, emissions continue to exit the mold and declines over time. When the mold and core are removed from the solidified casting during shakeout, the remaining trapped VOCs are released.

Step 1 – Identify Control Options

Considerable research has been done over the past several years to identify how changes in materials and processes could bring about a reduction in organic HAPs and VOCs from the use of newer and/or alternative materials. Work has also been done to specifically evaluate the impact of various variables in the casting process that may also affect the emission rates of VOCs and organic HAPs. Of particular note is the work done under the Casting Emission Reduction Program (CERP) conducted at the Technikon Environmental Development Center. The various technical papers published by the CERP program have been relied upon in this assessment, and some of the findings associated with work done at CERP include:

(1) A number of alternative materials have been evaluated to determine if they provide emission reductions as compared with a common baseline of materials. The bulk of the testing was aimed at greensand material substitute materials and Phenolic Urethane Cold Box (PUCB) core resin binders. Testing was primarily designed to document reductions in organic HAP emissions, but the information developed also showed significant reductions in VOC emissions from new materials. Absent from much of this testing was a concurrent evaluation of casting quality. While some materials showed promise for emissions reductions, the application of these materials would be a case by case evaluation for individual foundries based on the casting parameters for their products.

(2) CERP report “Casting Emission Reduction Program Process Variable Evaluation”, documents a number of tests:

(a) One test evaluates the emissions magnitude testing at different percent loss on ignition (%LOI) values over a range of 2% to 8%. Over this range, emissions dropped approximately 18% for every 1% drop in the LOI. However, the production of quality castings requires that a sufficient %LOI be maintained and each foundry has a minimum level required to produce an adequate casting.

(b) Another test evaluated the effect of varying casting weight and casting surface area and determined that emission levels were independently related to both variables. Casting with the same surface area, but higher casting weight showed proportionally higher emissions. Similarly, castings with the same weight, but higher surface area showed proportionally higher emissions.

(c) Another test evaluated the effect of pouring time on emissions. The results of which indicate that the length of time from pouring to shakeout can also affect the level of emissions. As the overall time is increased, the overall emission level increases, with the relative amount of emissions from the

cooling portion of the process decreasing and the relative amount of emissions from the shakeout process decreases.

(3) In a series of reports, the CERP evaluated the potential emissions impact of the use of the Advanced Oxidation process, and found that the system showed reductions in VOCs from greensand molding operations

There are two fundamental conclusions that can be drawn from the collective work performed by the CERP. First, there are alternate materials and process changes which can reduce VOC emissions, but the selection of materials and process changes is foundry specific and depends on the specific product mix. Secondly, VOC emissions can vary significantly from foundry to foundry and even within a single casting line based on a number of variables in the casting process. Based on testing at CERP as well as testing at various foundries, the following variables can affect the VOC emission levels:

- Casting size and relative surface area;
- Seacoal and resin content.
- Volatility of carbon materials in the greensand molds.
- Specific type of cores used. (Cold box, shell, no bake, etc.)
- Mold Vent design.
- Type of metal poured.
- Temperature, humidity.
- Cooling time (cooling line length)
- Exhaust and Ventilation configuration.
- Proximity of other background VOC sources.
- Impact of particulate control devices.
- Use of different test methods: Method 25 vs. 25A vs. 18

Due to the large number of variables, it is very difficult to predict the specific level of VOC emissions measured from the casting process. As a result, the use of a traditional fixed permit limit in pounds per ton of iron poured or pounds per hour may not be viable.

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors,* the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, a review of research completed by the Casting Emission Reduction Program (CERP) conducted at the Technikon Environmental Development Center and other appropriate references, the OAQ has determined that VOC emissions from pouring, cooling and shakeout operations could be controlled and/or mitigated using:

(a) Regenerative Thermal Oxidation;

(b) Catalytic Oxidation;

(c) Carbon Adsorption;

(d) Material Substitution in Molds;

(e) Core Binder Resin Content Control;

(f) Mold Process Optimization; and

(g) Work Practice Changes.

Step 2 – Eliminate Technically Infeasible Control Options

(a) Regenerative Thermal Oxidation (RTO)

Thermal oxidizers are refractory lined enclosures with one or more burners in which the waste gas stream is routed through a high temperature combustion zone where it is heated and the combustible materials are burned. Thermal oxidizers typically operate at 1200 to 2100 degrees Fahrenheit with residence times typically ranging from 0.5 to 2 seconds. An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time; the more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer. Regenerative thermal oxidation uses a ceramic bed to transfer recovered heat from the high-temperature oxidized gases to the low-temperature polluted stream. This form of oxidation achieves higher destruction efficiencies and greater fuel economy than traditional 'straight' thermal oxidation. Note that RTO has not been used to control VOCs from pouring, cooling and shakeout operations at other permitted sources.

Therefore, RTO is considered technically feasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

(b) Catalytic Oxidation

Catalytic oxidizers are similar to thermal oxidizers - the units are enclosed structures that use heat to oxidize the combustible materials. However, in a catalytic oxidizer, a catalyst is used to lower the operating temperature needed to oxidize the VOCs by lowering the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of the VOC without being permanently altered itself. Note that steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

The effectiveness of catalytic oxidizers is largely dependent on the presence of active catalyst. The exhaust streams from the respective operations contain a number of organic and inorganic contaminants that would foul the catalyst bed.

Therefore, catalyst oxidation is considered technically infeasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

(c) Carbon Adsorption

Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered. Carbon adsorption systems operated in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOC in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. Regulatory considerations dictate that the adsorbent be

regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

The effectiveness of carbon adsorption is largely dependent on available carbon sites. The exhaust streams from the respective operations contain a number of organic and inorganic contaminants that would foul and clog the carbon surface.

Therefore, carbon adsorption is considered technically infeasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

(d) Material Substitution in Molds

The mold sand system is designed to mix sand with other additives to achieve a mold sand that will: maintain its dimensional integrity during the casting process, produce a suitable surface finish, and result in castings that meet a number of physical and chemical specifications. As a result, the sand system and its operation are at the heart of the casting process. The mold sand is most typically a mixture of sand and “bond” - a composition of bentonite and a finely ground carbon source such as seacoal. It is the carbon source that forms the building block for the generation of VOCs and organic HAPs during the casting process. Water is also an important component in the “greensand” system, as it serves to activate the physical properties of the mold clays. The production of the mold sand is part batch process and part continuous process. While the mold sand is mixed as a batch in a Muller, the entire system involves a continuous recycling of used sand from the process. Thus a single batch is comprised of used sand material (which contains a certain amount of sand, bentonite and seacoal), to which are added additional amounts of these materials and water to bring the mix to the desired ratio of materials. The “sand system” is therefore a dynamic system that needs to be “conditioned” over a period of time if changes in materials or process are introduced.

The principle change to the mold sand system materials evaluated at the CERP foundry involved the substitution of the seacoal with other sources of carbon. Testing of certain substitution materials resulted in a significant reduction (greater than 50% reduction in some cases) in emissions from a standard baseline with some of the substituted materials; some materials of which are currently in use by other sources. A concern with the CERP testing is centered around the fact that the tests did not include a quantitative evaluation of casting quality. As a result, the degree of emission reduction that can be actually achieved may vary as the system is adjusted to meet product quality demands.

Therefore, the use of material substitution in the molds is considered technically feasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

(e) Core Binder Resin Content Control

MTA uses purchased Shell and Phenolic Urethane Cold Box (PUCB) Cores. The shell cores are produced off-site by heating a resin coated sand in a core machine. The cores retain the resins which can degrade into VOCs during the casting process. Specifically, the PUCB cores are formed by combining two separate resin parts with the core sand, forming the shape of the core in a core machine and passing a tertiary amine gas through the core to catalyze a polymerization reaction forming the Phenolic Urethane resin which holds the core together.

There are binder systems for both shell and PUCB core product that have been shown to reduce emissions of specific organic compounds. MTA has not had the opportunity to: evaluate whether these products could meet the product quality demands, assess its compatibility with the existing production process or determine the specific level of VOC reductions that could be obtained. However, MTA believes these new resin materials may be a viable and effective option for VOC reductions.

Therefore, the use of material substitution in cores is considered technically feasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

(e) Mold Process Optimization

MTA evaluated the option of optimizing the mold process with the use of Advanced Oxidation (AO). The AO system reduces the formation of VOC by altering the characteristics of the mold sand system. Specifically, the AO system operates by the incorporation of ozone and hydrogen peroxide in the water supply to the muller (sand mixer) which is further acted on by acoustic sonication. The system must be incorporated over time to achieve a stable sand system through the operation of the casting line. As the sand system acclimates to the AO system, the bond characteristics change, and it is necessary to reduce the amount of bond additives (clay and seacoal mix) to maintain the desired bond strength.

Testing done by the CERP investigated the air emission impact of various material changes and process modifications. Results showed VOC reductions of 43% when testing was conducted on a greensand mold using sodium silicate cores (cores without organic resins). For the non-core production trials, one-half of the achieved emission reduction was attributed to the AO system with the remaining benefit the result of reduced organics in the mold mix (as measured by %LOI). Unfortunately, it was noted that testing with the AO system resulted in degraded casting quality to the point that the castings were unacceptable.

MTA spent considerable effort with Furness-Newburge, Inc. (FNI), the only supplier of the AO system, to further investigate the technical feasibility and benefits of an AO system at MTA. FNI completed multiple studies and concluded that the AO system can guarantee MTA a 20% reduction in VOC emissions from its greensand mold system only. MTA produces both cored and non-cored castings and VOC emissions from the core material are not addressed by this guarantee. It is therefore difficult to predict the overall emission rate that could be achieved by the system when cored product is cast. Even though research test trials indicate that emission reduction benefits in greensand systems have been achieved, casting quality and system stability at MTA can not be predicted. Furthermore, ongoing servicing of the AO system is required to ensure continued stability of the system, and the servicing of the system would either have to come from assistance provided by FNI or MTA would have to develop sufficient in-house capability over time. Additional VOC reductions may very well be possible with the optimization of the sand system to minimize the %LOI in the sand system. MTA would need to evaluate the impact of any such changes in materials and or process changes to ensure that casting quality issues and process stability issues were addressed.

The few existing AO systems at other sources have not demonstrated that they meet BACT limits or emission reduction objectives. While AO systems have effectively reduced VOCs, validation of the reduction has not been successful. In addition, research test trials have indicated that reduction benefits can be obtained for greensand systems, but casting quality and system stability have not been adequately evaluated for MTA's specific operations.

If MTA was to utilize an AO system, its customers would reasonably require MTA to conduct significant qualification trials to ensure consistent and reliable casting quality. These trials would require the commitment of a significant portion of MTA's production due to the amount of time needed to condition the sand system with the AO system. If qualification testing failed to produce adequate castings, MTA would not be able to operate the AO system and would have to cease operations.

Ultimately, MTA cannot commit to an unproven technology with a questionable effectiveness that could compromise product quality.

Therefore, the use of mold process optimization (using advanced oxidation) is considered technically infeasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

(f) Work Practice Changes

VOC emissions can be reduced by ensuring that the molds “light-off” downstream of the pouring process. The iron and steel foundry MACT standard requires that a mold light-off plan be included in the Operation and Maintenance Plan. The plan documents whether the molds light-off spontaneously, cannot light-off, or require assistance in the form of an external ignition source to ensure mold light-off.

Therefore, the use of work practice changes is considered technically infeasible for controlling VOC emissions from the pouring, cooling and shakeout operations.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated VOC Control Efficiency
Regenerative Thermal Oxidization	88%
Material Substitution in Molds	Greater than 30% *
Core Binder Resin Content Control	
Work Practice Changes	

* Collectively estimated by MTA to reduce VOC emissions by 30% or more. Note that the specific VOC reductions associated with changes to work practices have not been assessed.

These estimated efficiencies are based on information provided in the references cited in Step 1.

Step 4 - Evaluate Control Options

Pouring and Cooling

The OAQ reviewed the EPA’s RBLC (RACT-BACT-LAER Clearinghouse) to identify established VOC BACT limitations for pouring and cooling operations. Specifically, the OAQ reviewed 10 facilities and 13 processes listed under the RBLC Code 81.450 (Iron Foundries – Casting and Pouring) that implement BACT to control VOC emissions.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control VOC emissions from pouring and cooling operations.

Of these facilities and processes reviewed, the following sources were identified that address VOC emissions from pouring and cooling:

Source	RBLC ID	Date of permit issuance	VOC BACT limit (lb/ton) [a]	Control
Thyssen Krupp	WI-0238	1/12/06	0.5	none
Thyssen Krupp	WI-0237	12/5/05	0.5	none
Dalton Foundry (IN)	NA	12/9/03	0.493	none
INTAT Precision (IN)	NA	9/2/03	0.14	none
Waupaca Foundry	WI-0190	6/11/02	0.05	none
Ardmore Foundry	OK-0077	9/14/01	5.25 lb/hr [b]	none
Waupaca Foundry	TN-0131	8/24/01	0.6 [c]	none
Waupaca Foundry	WI-0160	12/22/99	0.5	none
Waupaca Foundry	WI-0155	12/23/98	0.5	none
Arrow Cast	WI-0161	10/1/98	2.2 [d]	none
Waupaca Foundry	WI-0179	7/1/98	0.5	none
Waupaca Foundry	IN-0078	2/4/1998	0.5	none
Brillion Iron Works	WI-0092	8/6/97	8.0 [e]	none

(a) Facilities with RBLC IDs were listed under the RBLC category for 'casting and pouring' However, unless otherwise noted, the VOC BACT limits for those facilities were established for pouring and cooling.
(b) Information needed to determine the equivalent lb/ton BACT limit was not available.
(c) This VOC BACT limit covers only pouring.
(d)This VOC BACT limit covers pouring, cooling and shakeout.
(e) This VOC BACT covers cooling and shakeout but not pouring.
(IN) - Located in Indiana

The most stringent VOC BACT limit identified for pouring and cooling is 0.5 lb/ton. This limit was established for several sources; the most recent of which is Thyssen Krupp (RBLC ID: WI-0238).

Shakeout

The OAQ reviewed the EPA's RBLC (RACT-BACT-LAER Clearinghouse) to identify established VOC BACT limitations for shakeout operations. Specifically, the OAQ reviewed 13 facilities and 21 processes listed under the RBLC Code 81.460 (Iron Foundries – Shakeout) that implement BACT to control VOC emissions.

The OAQ also reviewed permits for other gray iron foundries located in Indiana that implement BACT to control VOC emissions from shakeout operations.

Of these facilities and processes reviewed, the following sources were identified that address VOC emissions from shakeout:

Source	RBLC ID	Date of permit issuance	VOC BACT limit (lb/ton)	Control
Thyssen Krupp	WI-0238	1/12/06	0.1	none
Thyssen Krupp	WI-0237	12/5/05	0.1	none
Dalton Foundry (IN)	NA	12/9/03	0.115	AO
INTAT Precision (IN)	NA	9/2/03	1.2	AO
Waupaca Foundry	WI-0190	6/11/02	0.1	none
Ardmore Foundry	OK-0077	9/14/01	33.38 lb/hr [(a)]	none
Waupaca Foundry	TN-0131	8/24/01	0.6 [(b)]	none
Waupaca Foundry	TN-0063	12/22/99	0.5	none
Waupaca Foundry	WI-0160	12/22/99	0.1	none
Waupaca Foundry	WI-0184	5/27/99	0.1	none
Arrow Cast	WI-0161	10/1/98	2.2 [(c)]	none
Waupaca Foundry	IN-0078	2/4/1998	0.1	none

(a) Information needed to determine the equivalent lb/ton BACT limit was not available.
(b) This VOC BACT limit covers cooling and shakeout but not pouring.
(c) This VOC BACT limit covers pouring, cooling and shakeout.
(IN) - Located in Indiana
AO - Advanced Oxidation

The most stringent VOC BACT limit identified for shakeout is 0.1 lb/ton. This limit was established for several sources; the most recent of which is Thyssen Krupp (RBLC ID: WI-0238).

MTA proposed the following as VOC BACT for the pouring, cooling and shakeout operations:

(a) The Permittee shall use low emitting greensand binding materials and core resin binders.

(b) The total VOC emissions from pouring, cooling and shakeout operations shall not exceed 0.8 pounds per ton of metal poured when using greensand molds without cores and 1.4 pounds per ton of metal poured when using greensand molds with cores as determined by validation testing in accordance with the requirements below.

(c) The greensand molding materials, %LOI, the shell and phenolic urethane cold box core resins and percent resin in the cores shall be consistent with the materials, %LOI and core resin content used during validation testing.

Economic Analysis

MTA provided IDEM with two (2) economic analyses of the most effective, technically feasible control option.

(1) The first analysis is an assessment of the economic feasibility of RTO for the pouring, cooling and shakeout operations.

(2) The second is an evaluation of RTO for only one operation (shakeout).

Separate assessments for pouring and cooling operations were not completed because the cost of the VOC controls and magnitude of the emissions from those operations approximates that of the shakeout operations.

See Appendix C for details.

The analyses estimate the total costs associated with the VOC control equipment, including the total capital investment of the various components intrinsic to the complete system, the estimated annual operating costs, and indirect annual costs. All costs, except for direct installation costs, were calculated using the methodology described in Section 3.2, Chapter 2 of the "EPA Air Pollution Control Cost Manual, Sixth Edition" (document # EPA 452-02-001). Direct capital cost is based on a vendor quote. Annualized costs are based on an interest rate of 6% and an equipment life of 10 years.

The basis of cost effectiveness, used to evaluate the control option, is the ratio of the annualized cost to the amount of VOC (tons) removed per year.

A summary of the cost figures determined in the analysis for the combined emissions from pouring, cooling and shakeout is provided in the table below:

Option	Total Capital Investment ($)	Total Annualized Cost ($/yr)	Potential VOC removal from add-on control (ton/yr)	Cost Effectiveness ($/ton VOC removed)
Regenerative Thermal Oxidation (for Pouring, Cooling and Shakeout)	$5,102,798	$3,449,553	154 *	$25,396

* See Appendix A for VOC emission calculations.

A summary of the cost figures determined in the analysis for the emissions from shakeout is provided in the table below:

Option	Total Capital Investment ($)	Total Annualized Cost ($/yr)	Potential VOC removal from add-on control (ton/yr)	Cost Effectiveness ($/ton VOC removed)
Regenerative Thermal Oxidation (for Shakeout)	$3,224,894	$2,154,703	34 *	$63,454

* See Appendix A for VOC emission calculations.

As indicated in the tables above, the use of regenerative thermal oxidation to control VOC emissions from pouring, cooling and shakeout is not a cost-effective control option.

Stack testing on non-cored and cored product, extensive research and a review of similar sources has led MTA to propose an aggregate VOC BACT emission limit of 0.8 pounds per ton of metal poured when not using cores and 1.4 pounds per ton of metal poured when using cores.

While more stringent VOC BACT limits for pouring, cooling and shakeout (0.6 pounds per ton, total) have been established, research completed by MTA and a review of technically and economically feasible control options indicates that the proposed VOC emission rates are BACT.

Step 5 – Select BACT

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be VOC BACT for the pouring, cooling and shakeout operations (EU-3a1 through EU-3a4, EU-3b1 through EU-3b4, EU-4 and EU-5a):

Pursuant to 326 IAC 2-2-3 (PSD - BACT) and 326 IAC 8-1-6, VOC BACT for the pouring, cooling and shakeout operations (EU-3a1 through EU-3a4, EU-3b1 through EU-3b4, EU-4 and EU-5a) is as follows:

(a) The Permittee shall use low emitting greensand binding materials and core resin binders.

(b) The total VOC emissions from pouring, cooling and shakeout operations shall not exceed 0.8 pounds per ton of metal poured when using greensand molds without cores and 1.4 pounds per ton of metal poured when using greensand molds with cores as determined by validation testing in accordance with the requirements below.

(c) The greensand molding materials, %LOI, the shell and phenolic urethane cold box core resins and percent resin in the cores shall be consistent with the materials, %LOI and core resin content used during validation testing.

Compliance with these limits shall satisfy the requirements of 326 IAC 2-2 and 326 IAC 8-1-6.

BACT for CO – Pouring and Casting Operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4), Casting Cooling Operations (EU-3b1, EU-3b2, EU-3b3 and EU-3b4) and Shakeout Operations (EU-4 and EU-5a)

CO emissions from pouring, cooling and shakeout operations are the result of oxidized organic materials that comprise the mold sand and resin-bonded cores.

The following units are covered in this BACT determination:

One (1) Line 1 pouring and casting operation; identified as EU-3a1; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 2 pouring and casting operation; identified as EU-3a2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 3 pouring and casting operation; identified as EU-3a3; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 4 pouring and casting operation; identified as EU-3a4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions controlled by baghouse DC-2; exhausting to stack S-2.

One (1) Line 1 casting cooling operation; identified as EU-3b1; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3b.

One (1) Line 2 casting cooling operation; identified as EU-3b2; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3b.

One (1) Line 3 casting cooling operation; identified as EU-3b3; constructed in 1995; a nominal capacity of 10 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3d.

One (1) Line 4 casting cooling operation; identified as EU-3b4; constructed in 1995; a nominal capacity of 9 tons of metal and 55 tons of sand molds and cores per hour; a maximum capacity of 11.25 tons of metal and 62.5 tons of sand molds and cores per hour; emissions uncontrolled; exhausting to stack S-3d.

One (1) Line 3 and Line 4 shakeout operation; identified as EU-4; constructed in 1995; a nominal capacity of 19 tons of metal and 110 tons of sand molds and cores per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand molds and cores per hour; emissions controlled by baghouse DC-4; exhausting to stack S-4.

One (1) Line 1 and Line 2 shakeout operation; identified as EU-5a; constructed in 1995; a nominal capacity of 18 tons of metal and 110 tons of sand molds and cores per hour; a maximum capacity of 22.5 tons of metal and 125 tons of sand molds and cores per hour; emissions controlled by baghouse DC-5; exhausting to stack S-5.

Step 1 – Identify Control Options

According to information available in the RBLC, EPA's *Compilation of Air Pollutant Emission Factors,* the EPA's *CATC Technical Bulletins and Air Pollution Control Technology Fact Sheets*, and other appropriate references, CO emissions from pouring, casting cooling and shakeout operations could be controlled using Thermal Oxidation (TO).

Step 2 – Eliminate Technically Infeasible Control Options

Thermal Oxidation (TO) – Straight and Regenerative

Thermal oxidizers are refractory lined enclosures with one or more burners in which the waste gas stream is routed through a high temperature combustion zone where it is heated and the combustible materials are burned. Thermal oxidizers typically operate at 1200 to 2100 degrees Fahrenheit with residence times typically ranging from 0.5 to 2 seconds. An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for CO destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time; the more thorough the contact between the flame and CO, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming CO-laden stream to improve the efficiency of the oxidizer.

Regenerative thermal oxidation uses a ceramic bed to transfer recovered heat from the high-temperature oxidized gases to the low-temperature polluted stream. This form of oxidation achieves higher destruction efficiencies and greater fuel economy than traditional 'straight' thermal oxidation.

According to the EPA's Air Pollution Control Technology Fact Sheet, TO is capable achieving up to 98% control of CO emissions.

Therefore, TO is considered technically feasible for controlling CO emissions from the pouring, cooling and shakeout operations.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The only technically feasible control option identified is thermal oxidation; specifically regenerative thermal oxidation. Regenerative thermal oxidation is expected to be capable of controlling CO emissions by as much as 88% (based on 90% capture and 98% destruction).

Step 4 - Evaluate Control Options

Pouring and Casting Cooling

The OAQ reviewed 10 facilities and 13 processes listed in the EPA's RBLC (RACT-BACT-LAER Clearinghouse) under the RBLC Code 81.450 (Iron Foundries – Casting and Pouring) that implemented BACT to control CO emissions. Of these facilities and processes, the following five (5) most recent records were identified that address CO emissions from pouring and casting cooling operations:

Source	RBLC ID	Date of permit issuance	CO BACT limit (lb/ton) [(a)]	Control
Thyssen Krupp	WI-0238	1/12/06	5.0	none
Thyssen Krupp	WI-0237	12/5/05	5.0	none
Waupaca Foundry	WI-0190	6/11/02	5.0	none
Ardmore Foundry	OK-0077	9/14/01	3.5 [(b)]	none
Waupaca Foundry	WI-0160	12/22/99	5.0	none

(a) Facilities with RBLC IDs were listed under the RBLC category for 'casting and pouring'. However, the CO BACT limits for those facilities were established for pouring and cooling.
(b) Based on a CO emission limit of 82.3 lb/hr and nominal production rate of 23.3 ton/hr. The emission rate has not been verified and therefore is only listed for completeness and will not be used for BACT determination.

The most stringent CO BACT limit identified for pouring and cooling is 5.0 lb/ton. This limit was established for several sources; the most recent of which is Thyssen Krupp (RBLC ID: WI-0238).

Shakeout

The OAQ reviewed 13 facilities and 21 processes listed in the EPA's RBLC (RACT-BACT-LAER Clearinghouse) under the RBLC Code 81.460 (Iron Foundries – Shakeout) that implemented BACT to control CO emissions. Of these facilities and processes, the following five (5) most recent records were identified that address CO emissions <u>from shakeout operations</u>:

Source	RBLC ID	Date of permit issuance	CO BACT limit (lb/ton)	Control
Thyssen Krupp	WI-0238	1/12/06	1.0	none
Thyssen Krupp	WI-0237	12/5/05	1.0	none
Waupaca Foundry	WI-0190	6/11/02	1.0	none
Ardmore Foundry	OK-0077	9/14/01	1.15 [(a)]	none
Waupaca Foundry	WI-0160	12/22/99	1.0	none

(a) Based on a CO emission limit of 26.7 lb/hr and nominal production rate of 23.3 ton/hr. The emission rate has not been verified and therefore is only listed for completeness and will not be used for BACT determination.

The most stringent CO BACT limit identified for shakeout is 1.0 lb/ton. This limit was established for several sources; the most recent of which is Thyssen Krupp (RBLC ID: WI-0238).

Pouring, Cooling and Shakeout

As identified above, the most stringent (combined) CO BACT for pouring, cooling and shakeout is 6.0 lb/ton. This limit was established for several sources; the most recent of which is Thyssen Krupp (RBLC ID: WI-0238).

MTA has proposed CO BACT for pouring, cooling and shakeout as 6.0 lb/ton. This limit is as stringent as the sum of the most stringent limitations established in recent BACT determinations for identical operations at a gray iron foundry.

Emissions impact of CO control using thermal oxidation

Modeling completed by MTA (submitted to the OAQ in September 2007) indicated that:

(1) The impact of uncontrolled CO emissions was approximately 5% of the 1-hour CO standard and 10% of the 8-hour standard;

(2) The impact area extended only one kilometer from the MTA facility; and

(3) The impact of uncontrolled CO emissions, combined with the CO emissions from other major sources in the area and background concentrations, was approximately 14% of the 1-hour CO standard and 33% of the 8-hour standard.

Given the small magnitude and impact area of uncontrolled CO emissions from MTA, the OAQ believes that decreases that would be associated with thermal oxidation of CO would not result in health benefits.

Increased emissions associated with thermal oxidation

An evaluation of the emissions produced by a thermal oxidation system indicated that the use of thermal oxidation to control CO emissions would cause an increase in NOx emissions by 10 tons per year. NOx emissions contribute to ambient NO2 concentrations and are a precursor to the formation of ground level ozone and PM2.5.

Economic Analysis

MTA provided IDEM with an economic analyses of the only technically feasible control option; thermal oxidation. See Appendix C for details.

The analysis estimates the total costs associated with the CO control equipment, including the total capital investment of the various components intrinsic to the complete system, the estimated annual operating costs, and indirect annual costs. All costs, except for direct annual costs, were calculated using the methodology described in Section 3.2, Chapter 2 of the "EPA Air Pollution Control Cost Manual, Sixth Edition" (document # EPA 452-02-001). Direct capital cost is based on a vendor quote. Annualized costs are based on an interest rate of 6% and an equipment life of 10 years.

The basis of cost effectiveness, used to evaluate the control option, is the ratio of the annualized cost to the amount of VOC (tons) removed per year.

A summary of the cost figures determined in the analysis for the combined emissions from pouring, cooling and shakeout is provided in the table below:

Option	Total Capital Investment ($)	Total Annualized Cost ($/yr)	Potential VOC removal from add-on control (ton/yr)	Cost Effectiveness ($/ton VOC removed)
Regenerative Thermal Oxidation (for Pouring, Cooling and Shakeout)	$5,102,798	$3,591,582	582 *	$6,170

* See Appendix A for CO emission calculations.

The BACT limit proposed by MTA for pouring, cooling and shakeout operations is 6.0 lb/ton, combined. This combined limit is proposed because of the amount of CO emissions that may be released during these operations which may vary based on factors such as cooling time and process material used. In addition, these other comparable BACT emission limitations are uncontrolled units, based on a determination by the permitting authorities that controls

are not feasible for these types of operations. Therefore, given that the proposed limit is not significantly higher than other comparable limits, and given that the materials produced at these facilities vary significantly, which affects the emission characteristic of pouring, cooling and shakeout operations, it is reasonable to conclude that MTA's proposed limit of 6.0 pounds of CO per ton of metal should be considered BACT for the pouring, cooling, and shakeout operations.

Step 5 – Select BACT

Regenerative Thermal Oxidation is not economically feasible due to high operating cost of this equipment.

Based on the evaluations described above, the Permittee shall comply with the following requirements determined to be CO BACT for the pouring, cooling and shakeout operations (EU-3a1 through EU-3a4, EU-3b1 through EU-3b4):

Pursuant to 326 IAC 2-2-3 (PSD), CO BACT for the pouring, cooling and shakeout is as follows:

(a) The CO emissions from the pouring and casting operations (EU-3a1, EU-3a2, EU-3a3 and EU-3a4, stack S-2), casting cooling operations (EU-3b1 and EU-3b2, stack S-3b; EU-3b3 and EU-3b4, stack S-3d) and shakeout operations (EU-4, stack S-4 and EU-5a, stack S-5) shall not exceed 6.0 pounds per ton of metal.

(b) Compliance with the production limit on EU-2 and (a) above limits total CO emissions from the respective units to less than 660 tons per twelve consecutive month period.

Compliance with these limitations shall satisfy the requirements of 326 IAC 2-2.

Appendix C: BACT Economic Analysis of a Fabric Filter Collector

Company Name: Metal Technologies Auburn, LLC
Address City IN Zip: 1401 South Grandstaff Drive, Auburn IN 46706
Permit Number: T033-21760-00042
Reviewer: ERG/BS
Date: March 15, 2007

Purchase Costs	Factor		
basic equipment (a)	-	$	182,000
instrumentation	10%	$	18,200
taxes	5%	$	9,100
freight	5%	$	9,100
other	-	$	-
Purchased Equipment Cost		**$**	**218,400**
Direct Installation Costs			
foundation & supports	4%	$	8,736
handling and erection	50%	$	109,200
electrical	8%	$	17,472
piping	1%	$	2,184
insulation	7%	$	15,288
painting	4%	$	8,736
other		$	-
Total Direct Cost		**$**	**161,616**
Indirect Costs			
engineering	10%	$	21,840
construction expense	20%	$	43,680
contractor fee	10%	$	21,840
start-up fee	1%	$	2,184
performance test	1%	$	2,184
contingency	3%	$	6,552
Total Indirect Cost		**$**	**98,280**
TOTAL CAPITAL INVESTMENT		**$**	**478,296**

Direct Annual Costs	Factor		
operating labor	$22.5/hr, 2 hr/shift	$	49,275
supervisory labor	(15% of operator)	$	7,391
maintenance labor	$40/hr, 1hr/shift	$	43,800
replacement parts	5% of eqiupment	$	9,100
maintenance materials	(100% of labor)	$	43,800
utilities: electricity (97.5 kW)	$0.036 per kWhr	$	30,748
utilities: compressed air	-	$	13,140
Total Direct Annual Cost		**$**	**197,254**
Indirect Annual Costs			
overhead	60% O&M	$	86,560
administration charges	1% TCI	$	4,783
insurance	1% TCI	$	4,783
property tax	2% TCI	$	9,566
capital recovery cost	6%, 10 years	$	64,985
Total Indirect Annual Cost		**$**	**170,677**
TOTAL ANNUALIZED COST		**$**	**367,931**
Total uncontrolled PM/PM10 PTE of Cooling Lines 1-4 =			22.50
(See Appendix A)			
Total controlled PM/PM10 PTE of Cooling Lines 1-4 =			5.33
(based on 0.003 gr/dscf, 50,000 acfm)			
Removed Emissions (tons/yr) =			17.2
Cost Effectiveness ($/ton of PM/PM10 removed)		**$**	**21,428**

(a) Based on a vendor estimate provided to MTA

Appendix C: BACT Economic Analysis
of Regenerative Thermal Oxidation
for Pouring, Cooling and Shakeout Operations

Company Name: **Metal Technologies Auburn, LLC**
Address City IN Zip: **1401 South Grandstaff Drive, Auburn IN 46706**
Permit Number: **T033-21760-00042**
Reviewer: **ERG/BS**
Date: **March 15, 2007**

Purchase Costs	Factor		
basic equipment (a)	-	$	2,641,200
instrumentation	10%	$	264,120
taxes	5%	$	132,060
freight	5%	$	132,060
other	-	$	-
Purchased Equipment Cost		**$**	**3,169,440**
Direct Installation Costs			
foundation & supports	8%	$	253,555
handling and erection	14%	$	443,722
electrical	4%	$	126,778
piping	2%	$	63,389
insulation	1%	$	31,694
painting	1%	$	31,694
other		$	-
Total Direct Cost		**$**	**950,832**
Indirect Costs			
engineering	10%	$	316,944
construction expense	5%	$	158,472
contractor fee	10%	$	316,944
start-up fee	2%	$	63,389
performance test	1%	$	31,694
contingency	3%	$	95,083
Total Indirect Cost		**$**	**982,526**
TOTAL CAPITAL INVESTMENT		**$**	**5,102,798**

Direct Annual Costs	Factor		
operating labor	$22.5/hr, 1.5 hr/shift	$	36,956
supervisory labor	(15% of operator)	$	5,543
maintenance labor	$40/hr, 1.5 hr/shift	$	65,700
replacement parts	5% of eqiupment	$	132,060
maintenance materials	(100% of labor)	$	65,700
utilities: electricity (234 kW)	$0.036 per kWhr	$	73,794
utilities: natural gas (23 MMBtu/hr) (b)	$10.23/MMBtu	$	2,068,041
Total Direct Annual Cost		**$**	**2,447,795**
Indirect Annual Costs			
overhead	60% O&M	$	104,340
administration charges	1% TCI	$	51,028
insurance	1% TCI	$	51,028
property tax	2% TCI	$	102,056
capital recovery cost	6%, 10 years	$	693,307
Total Indirect Annual Cost		**$**	**1,001,759**
TOTAL ANNUALIZED COST		**$**	**3,449,553**
Total uncontrolled VOC PTE of Pouring, Cooling and Shakeout =			154.00
(See Appendix A)			
Control Efficiency (98% destruction, 90% capture)			88.2%
Removed Emissions (tons/yr) =			135.8
Cost Effectiveness ($/ton VOC removed)		**$**	**25,396**

(a) Based on a vendor estimate provided to MTA
(b) Engineering estimate

Appendix C: BACT Economic Analysis
of Regenerative Thermal Oxidation
for Shakeout Operations

Company Name: Metal Technologies Auburn, LLC
Address City IN Zip: 1401 South Grandstaff Drive, Auburn IN 46706
Permit Number: T033-21760-00042
Reviewer: ERG/BS
Date: March 15, 2007

Purchase Costs	Factor		
basic equipment (a)	-	$	1,669,200
instrumentation	10%	$	166,920
taxes	5%	$	83,460
freight	5%	$	83,460
other	-	$	-
Purchased Equipment Cost		**$**	**2,003,040**
Direct Installation Costs			
foundation & supports	8%	$	160,243
handling and erection	14%	$	280,426
electrical	4%	$	80,122
piping	2%	$	40,061
insulation	1%	$	20,030
painting	1%	$	20,030
other		$	-
Total Direct Cost		**$**	**600,912**
Indirect Costs			
engineering	10%	$	200,304
construction expense	5%	$	100,152
contractor fee	10%	$	200,304
start-up fee	2%	$	40,061
performance test	1%	$	20,030
contingency	3%	$	60,091
Total Indirect Cost		**$**	**620,942**
TOTAL CAPITAL INVESTMENT		**$**	**3,224,894**

Direct Annual Costs	Factor		
operating labor	$22.5/hr, 0.5 hr/shift	$	12,319
supervisory labor	(15% of operator)	$	1,848
maintenance labor	$40/hr, 0.5 hr/shift	$	21,900
replacement parts	5% of eqiupment	$	83,460
maintenance materials	(100% of labor)	$	21,900
utilities: electricity (156 kW)	$0.036 per kWhr	$	49,196
utilities: natural gas (15.2 MMBtu/hr) (b)	$10.23/MMBtu	$	1,362,145
Total Direct Annual Cost		**$**	**1,552,768**
Indirect Annual Costs			
overhead	60% O&M	$	34,780
administration charges	1% TCI	$	32,249
insurance	1% TCI	$	32,249
property tax	2% TCI	$	64,498
capital recovery cost	6%, 10 years	$	438,160
Total Indirect Annual Cost		**$**	**601,936**
TOTAL ANNUALIZED COST		**$**	**2,154,703**
Uncontrolled VOC PTE of Shakeout Lines 1-4 =			38.50
(See Appendix A)			
Control Efficiency (98% destruction, 90% capture)			88.2%
Removed Emissions (tons/yr) =			34.0
Cost Effectiveness ($/ton VOC removed)		**$**	**63,454**

(a) Based on a vendor estimate provided to MTA
(b) Engineering estimate

Appendix C: BACT Economic Analysis
of Regenerative Thermal Oxidation
for Pouring, Cooling and Shakeout Operations

Company Name: **Metal Technologies Auburn, LLC**
Address City IN Zip: **1401 South Grandstaff Drive, Auburn IN 46706**
Permit Number: **T033-21760-00042**
Reviewer: **ERG/BS**
Date: **March 15, 2007**

Purchase Costs	Factor		
basic equipment (a)	-	$	2,641,200
instrumentation	10%	$	264,120
taxes	5%	$	132,060
freight	5%	$	132,060
other	-	$	-
Purchased Equipment Cost		**$**	**3,169,440**
Direct Installation Costs			
foundation & supports	8%	$	253,555
handling and erection	14%	$	443,722
electrical	4%	$	126,778
piping	2%	$	63,389
insulation	1%	$	31,694
painting	1%	$	31,694
other		$	-
Total Direct Cost		**$**	**950,832**
Indirect Costs			
engineering	10%	$	316,944
construction expense	5%	$	158,472
contractor fee	10%	$	316,944
start-up fee	2%	$	63,389
performance test	1%	$	31,694
contingency	3%	$	95,083
Total Indirect Cost		**$**	**982,526**
TOTAL CAPITAL INVESTMENT		**$**	**5,102,798**

Direct Annual Costs	Factor		
operating labor	$22.5/hr, 1.5 hr/shift	$	36,956
supervisory labor	(15% of operator)	$	5,543
maintenance labor	$40/hr, 1.5 hr/shift	$	65,700
replacement parts	5% of eqiupment	$	132,060
maintenance materials	(100% of labor)	$	65,700
utilities: electricity (234 kW)	$0.049 per kWhr	$	100,442
utilities: natural gas (23 MMBtu/hr) (b)	$10.79/MMBtu	$	2,183,421
Total Direct Annual Cost		**$**	**2,589,823**
Indirect Annual Costs			
overhead	60% O&M	$	104,340
administration charges	1% TCI	$	51,028
insurance	1% TCI	$	51,028
property tax	2% TCI	$	102,056
capital recovery cost	6%, 10 years	$	693,307
Total Indirect Annual Cost		**$**	**1,001,759**
TOTAL ANNUALIZED COST		**$**	**3,591,582**
Total uncontrolled CO PTE of Pouring, Cooling and Shakeout =			660.00
(See Appendix A)			
Control Efficiency (98% destruction, 90% capture)			88.2%
Removed Emissions (tons/yr) =			582.1
Cost Effectiveness ($/ton CO removed)		**$**	**6,170**

(a) Based on a vendor estimate provided to MTA
(b) Engineering estimate

Appendix D: Air Quality Analysis

Metal Technologies Auburn, LLC

Auburn, Indiana (DeKalb County)

Tracking and Plant ID: T033-21760-00042

Proposed Project

Metal Technologies Auburn, LLC has submitted a request for a significant source modification of their facility in Auburn, Indiana with an increase in the Particulate Matter less than 10 microns (PM_{10}), and Carbon Monoxide (CO) emissions.

Environmental Resources Management, Inc. (ERM) in Indianapolis, Indiana prepared the air quality analysis portion of the Prevention of Significant Deterioration (PSD) permit application for Metal Technologies Auburn. The Modeling Section in the Office of Air Quality (QAQ) received the air quality analysis portion of the permit application on October 10, 2007 with revised PM_{10} emission information received on March 27, 2008. This technical support document provides the air quality analysis review of the permit application.

Analysis Summary

Based on the potential emissions after controls, a Prevention of Significant Deterioration (PSD) air quality analysis was triggered for CO and PM_{10}. The significant impact analysis determined that modeling concentrations for CO and PM_{10} exceeded the significant impact levels. A refined analysis, PSD increment analysis and National Ambient Air Quality Standards (NAAQS) analysis was required. The pre-construction monitoring requirement was triggered, but the post-construction monitoring requirement was not triggered as a result of this analysis. A Hazardous Air Pollutant (HAP) analysis was not performed since there were no HAP emissions increases above 10 tons per year for any individual HAP or above 25 tons per year for all HAPs. An additional impact analysis was conducted and showed no significant impact. Based on the modeling results, the proposed modification will not have a significant impact upon federal air quality standards.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.

B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid used for the analyses.

C. Determine the significant impact level, the area impacted by the source's emissions and background air quality levels.

D. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or Prevention of Significant Deterioration (PSD) increment if the applicant exceeds significant impact levels.

E. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park.

F. Summarize the Air Quality Analysis

Section A - Pollutants Analyzed for Air Quality Impact

Applicability

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Register (CFR) 52.21(b)(23)(i).

Proposed Project Emissions

Particulate Matter less than 10 microns (PM_{10}), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2) and Volatile Organic Compounds (VOCs) are the pollutants that will be emitted from the revision of Metal Technologies emission limits. An air quality analysis is required for PM_{10} and CO pollutants because potential emissions after controls exceed the significant emission rate as shown in Table 1.

TABLE 1
Significant Emission Rates for PSD Applicability

POLLUTANT	POTENTIAL EMISSION RATE (Source Totals)	SIGNIFICANT EMISSION RATE	PRELIMINARY AQ ANALYSIS REQUIRED
	(tons/year)	(tons/year)	
PM_{10}	42.8	15	Yes
CO	660.0	100	Yes
NO_2	1.97	40	No
SO_2	3.94	40	No
VOC	99.55	40	No[1]

[1] An air quality analysis was not performed for VOCs because they are photochemically reactive. Photochemical models like CAMx or UAM-V are used in regulatory or policy assessments to simulate the impacts from all sources by estimating pollutant concentrations and deposition of both inert and chemically reactive pollutants over large spatial scales. Currently, U.S. EPA has no regulatory photochemical models which can take into account small spatial scales or single source PSD modeling for ozone.

Modeled emission rates were taken from Appendix A of the Metal Technologies Auburn permit technical support document.

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid

Stack Height Compliance with Good Engineering Practice (GEP)

Applicability

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur. Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which would affect the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$Hg = H + 1.5L$$

Where: Hg is the GEP stack height
H is the structure height
L is the structure's lesser dimension (height or width)

Existing Stack

Since the existing stack height of the unit for which the modification is proposed is below GEP stack height, the effect of aerodynamic downwash will be accounted for in the air quality analysis for the project.

Meteorological Data

The meteorological data used in the American Meteorological Society Environmental Protection Agency Regulatory Model (AERMOD) model consisted of 1986 through 1990 surface data from the Fort Wayne, Indiana National Weather Service (NWS) station merged with the upper air data from the Dayton, Ohio NWS station. The meteorological data was preprocessed into AERMOD ready format by the Indiana Department of Environmental Management (IDEM) Office of Air Quality (OAQ) using U.S.EPA's AERMET.

Model Description

Environmental Resources Management used AERMOD, Version 07026. OAQ used the same model version to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Register Part 51, Appendix W "Guideline on Air Quality Models".

The Auer Land Use Classification Scheme was used to determine the land use in the area. The area is considered primarily rural; therefore, a rural classification was used.

Receptor Grid

The receptor grid extended to approximately 2 kilometers from the plant. Fence line receptors were closely spaced at 50 to 75 meters along the plant fence line and spaced every 100 meters out to a distance of 2000 meters from the plant property lines to identify the influence of aerodynamic building downwash. A total of 1680 receptors were used in this air quality analysis for PM_{10} and a total of 624 receptors were used for the CO air quality analysis.

Section C - Significant Impact Level/Area (SIA) and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source exceeded the PSD significant impact levels (concentrations). If the source's concentrations exceed these levels, further air quality analysis is required. Refined modeling for CO and PM_{10} was required because the results did exceed significant impact levels. Significant impact levels are defined by the following time periods in Table 2 below with all maximum-modeled concentrations from the worst case operating scenarios.

TABLE 2
Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (ug/m^3)	SIGNIFICANT IMPACT LEVEL (ug/m^3)	REFINED AQ ANALYSIS REQUIRED
PM_{10}	24 Hour	25.2	5	Yes
PM_{10}	Annual	4.3	1	Yes
CO	1 Hour	2171.3	2000	Yes
CO	8 Hour	1084.4	500	Yes

Pre-construction Monitoring Analysis

Applicability

The PSD requirements, 326 IAC 2-2-4, require an air quality analysis of the new source or the major modification to determine if the pre-construction monitoring threshold is triggered. In most cases, post construction monitoring can satisfy this requirement if the pre-construction monitoring threshold has been exceeded.

Modeling Results

A comparison of the preliminary modeling results was compared to the PSD preconstruction monitoring thresholds. The modeling results are listed in Table 3 below.

TABLE 3
Preconstruction Monitoring Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (ug/m^3)	DE MINIMIS LEVEL (ug/m^3)	ABOVE DE MINIMIS LEVEL
PM_{10}	24 Hour	25.2	13	Yes
CO	8 Hour	1084.4	575	Yes

The criteria pollutants, CO and PM_{10} did trigger the preconstruction monitoring requirement. As a result, the preconstruction monitoring requirement for CO and PM_{10} is required for this PSD major modification. But, the requirement is met by using existing air quality monitoring data for CO and PM_{10}.

Background Concentrations

Applicability

EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (EPA-450/4-87-007) Section 2.4.1 is cited for approval of the monitoring sites for this area. Background monitoring concentrations for PM_{10} and CO were required as part of this analysis since the modeling results were above the significant impact levels for PM_{10} and CO and a subsequent NAAQS analysis was required.

Background Monitors

Background data were taken from monitoring data in the Fort Wayne area using the PM_{10} monitor located at 2022 North Beacon and the CO monitor located at 203 East Douglas Street. The maximum 2nd high concentrations were used for the 24-hour PM_{10}, the 1-hour CO, and the 8-hour CO concentrations. The annual PM_{10} concentration used the highest annual concentration for the latest three years of data. All background concentrations were taken from 2005 to 2007 monitoring data.

TABLE 4
Existing Monitoring Data Used for Background Concentrations

POLLUTANT	MONITORING SITE	AVERAGING PERIOD	CONCENTRATION (ug/m^3)
PM_{10}	18-003-0004	24 Hour	44.3
PM_{10}	18-003-0004	Annual	24.4
CO	18-003-0001	1 Hour	3091.5
CO	18-003-0001	8 Hour	2141.2

Section D - NAAQS and PSD Increment

NAAQS Compliance Analysis and Results

NAAQS modeling for the appropriate time-averaging periods for CO and PM_{10} were required since the Metal Technologies PSD modification air quality analysis was above the significant impact levels for CO - 2000 ug/m^3 (1-hour) and 500 ug/m^3 (8-hour) and for PM_{10} - 5 ug/m^3 (24-hour) and 1 ug/m^3 (annual). OAQ modeling results are shown in Table 5 of this Air Quality Analysis. All maximum-modeled concentrations were compared to the respective NAAQS limit. All maximum-modeled concentrations during the five years were below the NAAQS limits and further modeling was not required.

TABLE 5
NAAQS Analysis

POLLUTANT	TIME AVERAGING PERIOD	YEAR	MODELED CONCENTRATION (ug/m^3)	BACKGROUND CONCENTRATION (ug/m^3)	TOTAL CONCENTRATION (ug/m^3)	NAAQS (ug/m^3)	NAAQS VIOLATION
PM_{10}	24 Hour	1987	102.4	44.3	146.7	150	No
PM_{10}	Annual	1988	6.8	24.4	31.2	50	No
CO	1 Hour	1990	1745.5	3091.5	4837	40,000	No
CO	8 Hour	1988	1009.5	2141.2	3150.7	10,000	No

Analysis and Results of Source Impact on the PSD Increment

Applicability

Maximum allowable increases (PSD increments) are established by 326 IAC 2-2 for PM_{10}. This rule also limits a source to no more than 80 percent of the available PSD increment to allow for future growth.

Source Impact

Since the impact for PM_{10} from Metal Technologies was above the significant impact levels, of 5 ug/m^3 (24-hour) and 1ug/m^3 (annual) a PSD increment analysis for the existing major sources and its surrounding counties was required as part of this air quality analysis. The results of the OAQ PSD PM_{10} increment analysis are shown in Table 6.

TABLE 6
PSD Increment Analysis

POLLUTANT	TIME AVERAGING PERIOD	YEAR	MODELED CONCENTRATION (ug/m^3)	PSD INCREMENT (ug/m^3)	80 PERCENT OF PSD INCREMENT (ug/m^3)	PSD INCREMENT VIOLATION
PM_{10}	24 Hour	1990	23.8	30	24	No
PM_{10}	Annual	1990	4.6	17	13.6	No

Part E – Qualitative Analysis

Additional Impact Analysis

All PSD permit applicants must prepare additional impacts analysis for each pollutant subject to regulation under the Clean Air Act. This analysis assesses the impacts on economic growth; soils and vegetation; wildlife and plant species; and visibility caused by any increase in emissions of any regulated pollutant from the source. The Metal Technologies PSD permit application provided an additional impact analysis performed by Environmental Resources Management.

Economic Growth

No expected impact from economic growth as the result of the Metal Technologies PSD permit modification since there will be no physical change at the Auburn foundry facility. The existing Auburn, Indiana community will be able to adequately handle potential commercial growth associated with any future plant expansion.

Soils and Vegetation Analysis

A soils and vegetation analysis was performed by Environmental Resources Management to asses the impact of the criteria pollutant air emissions. The results of soils and vegetation analysis show the modeled impacts are well below the thresholds necessary to have an adverse impact on the surrounding soils and vegetation. The results of the soils and vegetation analysis are listed in the Metal Technologies Auburn PSD Permit Application.

Federal Endangered Species Analysis

Federally endangered or threatened species are listed by the U.S. Fish and Wildlife Service; Division of Endangered Species for Indiana and includes 12 species of mussels, 2 species of birds, 2 species of bats, 2 species of butterflies, 1 specie of snake, and 5 plant species. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The Auburn facility is not expected to have any additional adverse effects on the habitats of the species other than what has already occurred from the industrial and residential activities in the area. The only endangered wildlife in the DeKalb County area is the Clubshell and Northern Riffleshell mussels, and the White Cat's Paw pearlymussel. These endangered species maintain habitats in rivers none of which are near the Auburn plant. Federally endangered or threatened plants as listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana lists no threatened or endangered species of plants in the DeKalb County area of northern Indiana.

Visibility Analysis

The VISCREEN model is designed as a screening model to determine the visual impact parameters from a single source plume. It is used basically to determine whether or not a plume is visible as an object itself.

The PM_{10} emission limits were used to run a local visibility Level 1 analysis. VISCREEN Version 1.01 was used to determine if the color difference parameter (Delta-E) or the plume (green) contrast limits were exceeded. The Delta-E was developed to specify the perceived magnitude of color and brightness changes and is used as the primary basis for determining the perceptibility of plume visual impacts. The plume constant can be defined at any wavelength as the relative difference in the intensity (called spectral radiance) between the viewed object and its background. This is used to determine how the human eye responds differently to different wavelengths of light. The highest Delta-E of 3.266 and the plume contrast of 0.018 occurred beyond Interstate I-69 with a Delta-E of 0.462 and a plume contrast of 0.002 visual impact at Interstate I-69 (inside the study area). The Delta-E and plume contrast values located at Interstate I-69 are below the threshold values for the Delta-E of 2.0 and for the plume contrast of 0.05.

Additional Analysis Conclusions

Finally, the results of the additional impact analysis conclude the operation of the Metal Technologies facility will have no significant impact on economic growth, soils, vegetation, endangered or threatened species, and visibility in the immediate vicinity or on any Class I area. Since the modeled impacts do not extend beyond the immediate area just beyond the plant property, no adverse impacts are expected from the modification at the Metal Technologies Auburn facility. Additionally, there are no threatened or endangered plant species in DeKalb County.

Part F - Summary of Air Quality Analysis

Metal Technologies has applied for a modification of their facility with a significant increase of their PM_{10} and CO emissions. Environmental Resources Management of Indianapolis, Indiana prepared the air quality analysis portion of the PSD application. DeKalb County is designated as attainment for all criteria pollutants. PM_{10} and CO emission rates associated with the proposed facility exceeded the respective significant emission rates. Modeling results taken from the latest version of the AERMOD model showed CO and PM_{10} modeled impacts were predicted to be less than the PM_{10} PSD increments and the CO and PM_{10} NAAQS. Metal Technologies did triggered the preconstruction monitoring for PM_{10} and CO. The NAAQS and PSD increment modeling for PM_{10} and the NAAQS modeling for CO were required as part of the air quality analysis since the Metal Technologies PSD modification exceeded the significant impact levels for PM_{10} and CO. An air toxic analysis was not preformed because there was no increase above the thresholds of 10 tons (a single HAP) and 25 tons per year (all HAPs) in Hazardous Air Pollutants (HAP). The nearest Class I area is Mammoth Cave National Park in Kentucky over 300 kilometers away from the source. An additional impact analysis was required but the operation of the proposed facility will have no significant impact.