INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53 IGCN 1003
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: November 30, 2007

RE: General Aluminum Manufacturing Company/ 069-19499-00048

FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot 03/23/06

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FEDERALLY ENFORCEABLE STATE OPERATING PERMIT
OFFICE OF AIR QUALITY

General Aluminum Manufacturing Company
1345 Henry Street
Huntington, Indiana 46750

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

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

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

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

Operation Permit No.: F069-19499-00048	
Issued by/Original Signed By: Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date: November 30, 2007 Expiration Date: November 30, 2012

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SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary aluminum foundry.

Source Address:	1345 Henry Street, Huntington, Indiana 46750
Mailing Address:	1345 Henry Street, Huntington, IN 46750
General Source Phone Number:	(260) 356-3900
SIC Code:	3365
County Location:	Huntington
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

(a) Nine (9) natural gas-fired reverberatory furnaces, each melting clean scrap as defined in the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR. Fluxing is used in the furnace on an as needed basis.

(1) Furnace #2 constructed in 1992 with a maximum heat input rate of 3.55 million (MM) British thermal units (Btu) per hour with a melting capacity of 0.75 tons per hour (TPH) exhausted through stack #2. Furnace #2 is capable of lost foam casting.

(2) Furnace #4 constructed in 1994 with a maximum heat input capacity of 3.55 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #4;

(3) Furnace #5 constructed in 2005 with a maximum heat input capacity of 2.90 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through Stack #5;

(4) Furnace #6 constructed in 1990 with a maximum heat input capacity of 4.62 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #6.

(5) Furnace #7 constructed in 1990 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #7.

(6) Furnace #8 constructed in 1996 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #8.

(7) Furnace #9 constructed in 1992 with a maximum heat input capacity of 3.35 MM Btu per hour and a melting capacity of 0.5 TPH exhausting through stack #9. Furnace #9 is dedicated to lost foam casting.

(8) Furnace #10 constructed in 2005 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #10.

(9) Furnace #11 constructed in 1990 with a maximum heat input capacity of 3.35 MM Btu per hour and a melting capacity of 0.5 TPH exhausting through stack #11.

All the furnaces use a small amount of flux only for cleaning purposes. Two separate types of flux are used, the first is a "wall flux" (FC-212-CC) for removing oxides from the walls of the furnaces, and the second is a "drossing flux" (WF-132) that is applied directly to the melt booth. Actual usage is approximately 150 pounds per month of each flux type per furnace.

(b) One (1) natural gas-fired dry hearth furnace (identified as DHF #14) constructed in 2005, melting clean scrap as defined in 40 CFR 63 Subpart RRR, with a maximum throughput rate of 0.75 tons per hour and utilizing three (3) burners. Two (2) burners are rated at 1.5 MMBtu per hour, and one (1) burner is rated at 1.0 MMBtu per hour.

(c) Seven (7) natural gas-fired core machines with a combined maximum capacity to produce 710 lbs of cores per hour, two (2) identified as Dependable 600 #1 and #2, each with a maximum heat input rate of 0.38 MMBtu/hr; two (2) identified as Dependable 400 #1 and #2, each with a maximum heat input rate of 0.27 MMBtu/hr; one (1) Dependable 200 with a maximum heat input rate of 0.17 MMBtu/hr; one (1) U360 with a maximum heat input rate of 1.00 MMBtu/hr; and one (1) Redford with a maximum heat input rate of 0.37 MMBtu/hr. Shell cores are made on all seven (7) natural gas-fired core machines. The core machines were constructed between 1970 and 1990.

(d) One (1) lost foam casting operation with a maximum throughput of 0.5 tons per hour with a filter box to control PM emissions exhausting indoors. The filter box controls a combination of emissions from pouring on the lost foam casting line and emissions from sand (extraction and fill stations). Small amounts of sand are used in the lost foam casting operation. The sand is recycled within the process. The casting operation was constructed in 1992.

(e) One (1) casting, grinding, cleaning, and finishing operation with a maximum throughput of 1.01 tons of aluminum per hour. Operation consists of band saws to cut off gates and risers as well as other hand-held finishing equipment (i.e., grinders, belt sealers, etc). The casting, grinding, cleaning, and finishing operation was constructed between 1950 and 1955.

(f) One (1) sanding handling operation with a maximum throughput of 0.4765 tons per hour.

(g) One (1) pouring and casting operation with a maximum throughput of 5.25 tons of aluminum per hour. Pouring and casting operations are permanent and semi-permanent mold systems that do not require sand.

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

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

(a) Three (3) natural gas-fired boilers (ID #1, #2 and #3) each with a maximum heat input of 0.244 MMBtu/hr, exhausting through stack #14. Boilers #1 and #2 were constructed in 1985. Boiler #3 was constructed in 1989 [326 IAC 6-2-4].

(b) One (1) natural gas-fired steam generating boiler (ID #4) with a maximum heat input capacity of 1.344 MMBtu/hr, exhausting through stacks 15 and 16. Boiler #4 was constructed in 1965 [326 IAC 6-2-3].

(c) Twenty (20) natural gas-fired torches venting to the interior of the building.

(d) Fifty-six (56) natural gas-fired space heaters each with a maximum heat input of 0.05 MMBtu/hr, venting to the interior of the building.

(e) One (1) natural gas-fired cafeteria furnace, with a maximum heat input of 0.075 MMBtu/hr, exhausting through stack # 12.

(f) One (1) natural gas-fired office furnace with a maximum heat input of 0.075 MMBtu/hr, exhausting through stack # 13.

A.4 FESOP Applicability [326 IAC 2-8-2]

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

SECTION B GENERAL CONDITIONS

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

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

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

(a) This permit, F069-19499-00048, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

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

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

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

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

B.4 Enforceability [326 IAC 2-8-6]

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

B.5 Severability [326 IAC 2-8-4(4)]

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

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

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

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" 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) An "authorized individual" is defined at 326 IAC 2-1.1-1(1)

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

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

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

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

The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) 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.

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

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

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

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

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

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

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

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

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, 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

(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 2-8-4(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

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

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

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

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

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

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

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

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

(h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

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

(a) All terms and conditions of permits established prior to F069-19499-00048 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

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

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

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

(1) That this permit contains a material mistake.

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

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.17 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
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Indianapolis, Indiana 46204-2251

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

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

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

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

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

Indiana Department of Environmental Management
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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:

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

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

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

(4) The Permittee notifies the:

Indiana Department of Environmental Management
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 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

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

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

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

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

B.20 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

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

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

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

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

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

B.22 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

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

Indiana Department of Environmental Management
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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ 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) Failure to pay may result in administrative enforcement action or revocation of this permit.

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

B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

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

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

C.2 Overall Source Limit [326 IAC 2-8]

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

(a) Pursuant to 326 IAC 2-8:

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

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

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

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

C.3 Opacity [326 IAC 5-1]

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

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

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

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

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

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

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

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

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

C.7 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

(g) Indiana Accredited 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 Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

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

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

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

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

Compliance Requirements [326 IAC 2-1.1-11]

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

C.10 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.13 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

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

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

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall 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 and 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.16 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. 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.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

Stratospheric Ozone Protection

C.18 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 2-8-4(10)]:

(a) Nine (9) natural gas-fired reverberatory furnaces, each melting clean scrap as defined in the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR. Fluxing is used in the furnace on an as needed basis.

(1) Furnace #2 constructed in 1992 with a maximum heat input rate of 3.55 million (MM) British thermal units (Btu) per hour with a melting capacity of 0.75 tons per hour (TPH) exhausted through stack #2. Furnace #2 is capable of lost foam casting.

(2) Furnace #4 constructed in 1994 with a maximum heat input capacity of 3.55 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #4;

(3) Furnace #5 constructed in 2005 with a maximum heat input capacity of 2.90 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through Stack #5;

(4) Furnace #6 constructed in 1990 with a maximum heat input capacity of 4.62 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #6.

(5) Furnace #7 constructed in 1990 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #7.

(6) Furnace #8 constructed in 1996 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #8.

(7) Furnace #9 constructed in 1992 with a maximum heat input capacity of 3.35 MM Btu per hour and a melting capacity of 0.5 TPH exhausting through stack #9. Furnace #9 is dedicated to lost foam casting.

(8) Furnace #10 constructed in 2005 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #10.

(9) Furnace #11 constructed in 1990 with a maximum heat input capacity of 3.35 MM Btu per hour and a melting capacity of 0.5 TPH exhausting through stack #11.

All the furnaces use a small amount of flux only for cleaning purposes. Two separate types of flux are used, the first is a "wall flux" (FC-212-CC) for removing oxides from the walls of the furnaces, and the second is a "drossing flux" (WF-132) that is applied directly to the melt booth. Actual usage is approximately 150 pounds per month of each flux type per furnace.

(b) One (1) natural gas-fired dry hearth furnace (identified as DHF #14) constructed in 2005, melting clean scrap as defined in 40 CFR 63 Subpart RRR, with a maximum throughput rate of 0.75 tons per hour and utilizing three (3) burners. Two (2) burners are rated at 1.5 MMBtu per hour, and one (1) burner is rated at 1.0 MMBtu per hour.

(c) Seven (7) natural gas-fired core machines with a combined maximum capacity to produce 710 lbs of cores per hour, two (2) identified as Dependable 600 #1 and #2, each with a maximum heat input rate of 0.38 MMBtu/hr; two (2) identified as Dependable 400 #1 and #2, each with a maximum heat input rate of 0.27 MMBtu/hr; one (1) Dependable 200 with a maximum heat input rate of 0.17 MMBtu/hr; one (1) U360 with a maximum heat input rate of 1.00 MMBtu/hr; and one (1) Redford with a maximum heat input rate of 0.37 MMBtu/hr. Shell cores are made on all seven (7) natural gas-fired core machines. The core machines were constructed between 1970 and 1990.

(d) One (1) lost foam casting operation with a maximum throughput of 0.5 tons per hour with a filter box to control PM emissions exhausting indoors. The filter box controls a combination of emissions from pouring on the lost foam casting line and emissions from sand (extraction and

fill stations). Small amounts of sand are used in the lost foam casting operation. The sand is recycled within the process. The casting operation was constructed in 1992.

(e) One (1) casting, grinding, cleaning, and finishing operation with a maximum throughput of 1.01 tons of aluminum per hour. Operation consists of band saws to cut off gates and risers as well as other hand-held finishing equipment (i.e., grinders, belt sealers, etc). The casting, grinding, cleaning, and finishing operation was constructed between 1950 and 1955.

(f) One (1) sanding handling operation with a maximum throughput of 0.4765 tons per hour.

(g) One (1) pouring and casting operation with a maximum throughput of 5.25 tons of aluminum per hour. Pouring and casting operations are permanent and semi-permanent mold systems that do not require sand.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes), the allowable particulate emission rate from the following emission units shall not exceed the emission limits listed in the table below:

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

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

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Reverberatory Furnace # 2	0.75	3.38
Reverberatory Furnace # 4	0.50	2.58
Reverberatory Furnace # 5	0.50	2.58
Reverberatory Furnace # 6	0.50	2.58
Reverberatory Furnace # 7	0.50	2.58
Reverberatory Furnace # 8	0.50	2.58
Reverberatory Furnace # 9	0.50	2.58
Reverberatory Furnace # 10	0.50	2.58
Reverberatory Furnace # 11	0.50	2.58
Dry Hearth Furnace DHF #14	0.75	3.38
Dependable 600 # 1	0.04	0.47
Dependable 600 # 2	0.04	0.47
Dependable 400 # 1	0.04	0.47
Dependable 400 # 2	0.04	0.47
Dependable 200	0.04	0.47
U360	0.04	0.47
Redford	0.04	0.47
Lost Foam Casting	0.50	2.58
Casting/Grinding/Cleaning/ Finishing	1.01	4.13
Sanding/Grinding/Handling	0.48	2.50

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Pouring and Casting	5.25	12.5

D.1.2 Standards for Reverberatory Furnaces [40 CFR 63 Subpart RRR][326 IAC 20-70]

The reverberatory furnaces (identified as #2, #4, #5, #6, #7, #8, #9, #10, and #11) and the dry hearth furnace (identified as DHF #14) shall melt only clean charge as defined by the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR.

D.1.3 Hazardous Air Pollutants [326 IAC 2-8]

Pursuant to 326 IAC 2-8 (Federally Enforceable State Operating Permit Program), the lost foam usage from furnaces #9 and #2 shall be limited to less than 19,795 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month. This limit is necessary to limit styrene, VOC, and individual HAP to less than 9.9 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

This limit renders the provisions of 326 IAC 2-7 (Part 70 Permit Program) not applicable.

D.1.4 Volatile Organic Compounds BACT [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall control VOC emissions from the lost foam casting (furnaces #2 and #9) with a Best Available Control Technology (BACT), which has been determined to be the following:

(a) The total VOC input to lost foam casting (furnaces #2 and #9), including the use of lost foam shall be limited to less than 9.9 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) Lost foam usage shall be limited to less than 19,795 pounds per twelve (12) consecutive month period, which is equivalent to 9.9 tons per year of VOC emissions.

D.1.5 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 lost foam casting operation and its control device.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.6 Record Keeping Requirements

(a) To document compliance with Condition D.1.2, the Permittee shall maintain records that document that only clean charge, as defined by the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR, has been used in the source furnaces.

(b) To document compliance with Conditions D.1.3 and D.1.4, the Permittee shall maintain records of the amount of lost foam used on monthly basis. Records shall include purchase orders and invoices necessary to verify the type and amount used. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the HAP and VOC usage limits established in Conditions D.1.3 and D.1.4. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

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

D.1.7 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.3 and D.1.4 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 "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 EMISSION UNITS OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]

(a) Three (3) natural gas-fired boilers (ID #1, #2 and #3) each with a maximum heat input of 0.244 MMBtu/hr, exhausting through stack #14. Boilers #1 and #2 were constructed in 1985. Boiler #3 was constructed in 1989 [326 IAC 6-2-4].

(b) One (1) natural gas-fired steam generating boiler (ID #4) with a maximum heat input capacity of 1.344 MMBtu/hr, exhausting through stacks 15 and 16. Boiler #4 was constructed in 1965 [326 IAC 6-2-3].

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Particulate [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: emission limitations for facilities specified in 326 IAC 6-2-1 (b)), the PM emissions from each of the three (3) 0.244 MMBtu/hr boilers shall be limited to 0.6 pounds per MMBtu heat input.

D.2.2 Particulate [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3(d) (Particulate Emission Limitations for Sources of Indirect Heating: emission limitations for facilities specified in 326 IAC 6-2-1 (b)), the PM emissions from the one (1) natural gas-fired steam generating boiler (identified as Boiler # 4 and constructed in 1965) rated at 1.344 MMBtu per hour heat input shall be limited to 0.8 pounds per MMBtu heat input.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: General Aluminum Manufacturing Company
Source Address: 1345 Henry Street, Huntington, Indiana 46750
Mailing Address: 1345 Henry Street, Huntington, IN 46750
FESOP Permit No.: F069-19499-00048

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

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

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

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: General Aluminum Manufacturing Company
Source Address: 1345 Henry Street, Huntington, Indiana 46750
Mailing Address: 1345 Henry Street, Huntington, IN 46750
FESOP Permit No.: F069-19499-00048

This form consists of 2 pages **Page 1 of 2**

□ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
SEMI- ANNUAL NATURAL GAS FIRED BOILER CERTIFICATION

Source Name: General Aluminum Manufacturing Company
Source Address: 1345 Henry Street, Huntington, Indiana 46750
Mailing Address: 1345 Henry Street, Huntington, IN 46750
FESOP Permit No.: F069-19499-00048

☐ Natural Gas Only ☐ Alternate Fuel burned From:_____ To:_____

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: General Aluminum Manufacturing Company
Source Address: 1345 Henry Street, Huntington, Indiana 46750
Mailing Address: 1345 Henry Street, Huntington, IN 46750
FESOP Permit No.: F069-19499-00048
Facility: Lost Foam Operations
Parameter: Lost foam usage
Limit: Less than 19,795 pounds of lost foam per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: General Aluminum Manufacturing Company
Source Address: 1345 Henry Street, Huntington, Indiana 46750
Mailing Address: 1345 Henry Street, Huntington, IN 46750
FESOP Permit No.: F069-19499-00048
Facility: Lost Foam Casting (Furnaces #2 and #9)
Parameter: VOC input
Limit: Less than 9.9 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: General Aluminum Manufacturing Company
Source Address: 1345 Henry Street, Huntington, Indiana 46750
Mailing Address: 1345 Henry Street, Huntington, IN 46750
FESOP Permit No.: F069-19499-00048

Months: _____ **to** _____ **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.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document
For a Federally Enforceable State Operating Permit (FESOP) Renewal

Source Background and Description

Source Name:	General Aluminum Manufacturing Company
Source Location:	1345 Henry Street, Huntington, Indiana
SIC Code:	3365
Operation Permit No.:	F069-19499-00048
Permit Reviewer:	ERG/BL

On October 12, 2007, the Office of Air Quality (OAQ) had a notice published in The Herald Press, of Huntington, Indiana, stating that General Aluminum Manufacturing Company had applied for a Renewal to their Federally Enforceable State Operating Permit (FESOP). The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On November 11, 2007, comments on the draft permit were submitted by Nicole M. Hamilton of ERM on behalf of General Aluminum. The summary of the comments is as follows. Changes made as a result of these comments are shown throughout this addendum. New language is in **bold** while deleted language is in ~~strikeout~~. The Table of Contents has been updated as necessary.

General Aluminum Comments

Comment 1:

General Aluminum commented that several insignificant activities, ovens (ID #5 and #6) and LP storage tanks, have been removed from the facility and therefore should be removed from the FESOP.

Response to Comment 1:

No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. The following changes have been made to Condition A.3 of the permit:

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

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

(a) Three (3) natural gas-fired boilers (ID #1, #2 and #3) each with a maximum heat input of 0.244 MMBtu/hr, exhausting through stack #14. Boilers #1 and #2 were constructed in 1985. Boiler #3 was constructed in 1989 [326 IAC 6-2-4].

(b) One (1) natural gas-fired steam generating boiler (ID #4) with a maximum heat input capacity of 1.344 MMBtu/hr, exhausting through stacks 15 and 16. Boiler #4 was constructed in 1965 [326 IAC 6-2-3].

(c) ~~Two (2) natural gas-fired aging ovens (ID #5 and #6), each with a maximum heat input of~~

~~0.6 MMBtu/hr venting to the interior of the building.~~

~~(d)~~ Twenty (20) natural gas-fired torches venting to the interior of the building.

~~(e)~~**(d)** Fifty-six (56) natural gas-fired space heaters each with a maximum heat input of 0.05 MMBtu/hr, venting to the interior of the building.

~~(f)~~**(e)** One (1) natural gas-fired cafeteria furnace, with a maximum heat input of 0.075 MMBtu/hr, exhausting through stack # 12.

~~(g)~~**(f)** One (1) natural gas-fired office furnace with a maximum heat input of 0.075 MMBtu/hr, exhausting through stack # 13.

~~(h) Four (4) 1,000 gallon above ground storage tanks to store LP gas.~~

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	General Aluminum Manufacturing Company
Source Location:	1345 Henry Street, Huntington, Indiana 46750
County:	Huntington
SIC Code:	3365
Permit Renewal No.:	069-19499-00048
Permit Reviewer:	ERG/BL

The Office of Air Quality (OAQ) has reviewed an application from General Aluminum Manufacturing Company for a Federally Enforceable State Operating Permit (FESOP) for the operation of an aluminum foundry.

History

General Aluminum Manufacturing Company, Inc. was issued a Minor Source Operating Permit on December 6, 1999. On April 2, 2001, General Aluminum Manufacturing Company, Inc. received a minor permit revision to reflect the removal of a baghouse. The associated baghouse was used to control emissions from the casting/grinding/cleaning/finishing operations; the lost foam casting baghouse remained in operation. The Permittee submitted more accurate emission factors which demonstrated a baghouse is not required to meet 326 IAC 6-3-2. Since the baghouse was removed, the associated preventive maintenance plan and recordkeeping requirements were removed. On April 1, 2002, the Permittee received the first notice only change requesting a transfer of ownership from the previous owner, the Maco Corporation. On September 9, 2002, the Permittee received its second notice only change to construct two additional reverberatory furnaces (#12 and #13) which it did not construct. On January 8, 2004, the Permittee received its third notice only change to add one dry hearth furnace #14 and remove several emission units including furnace #3, two (2) natural-gas fired core machines, two (2) electric-fired core machines, one (1) pot furnace, one (1) SO_2 gassing chamber, and two (2) 10,000 gallon underground storage tanks. In 2005 the source constructed the dry hearth furnace #14. The Permittee submitted an application for a MSOP renewal on August 18, 2004. On January 27, 2006 new emissions data were provided by the Permittee. The new data indicated that previous permit applications had underestimated HAP emissions from the lost foam casting operation and that this source was subject to 326 IAC 2-7 (Part 70 Permit Program). The source has elected to operate under a FESOP permit.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) Nine (9) natural gas-fired reverberatory furnaces, each melting clean scrap as defined in the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR. Fluxing is used in the furnace on an as needed basis.

(1) Furnace #2 constructed in 1992 with a maximum heat input rate of 3.55 million (MM) British thermal units (Btu) per hour with a melting capacity of 0.75 tons per hour (TPH) exhausted through stack #2. Furnace #2 is capable of lost foam casting.

(2) Furnace #4 constructed in 1994 with a maximum heat input capacity of 3.55 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #4;

(3) Furnace #5 constructed in 2005 with a maximum heat input capacity of 2.90 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through Stack #5;

(4) Furnace #6 constructed in 1990 with a maximum heat input capacity of 4.62 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #6.

(5) Furnace #7 constructed in 1990 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #7.

(6) Furnace #8 constructed in 1996 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #8.

(7) Furnace #9 constructed in 1992 with a maximum heat input capacity of 3.35 MM Btu per hour and a melting capacity of 0.5 TPH exhausting through stack #9. Furnace #9 is dedicated to lost foam casting.

(8) Furnace #10 constructed in 2005 with a maximum heat input capacity of 3.35 MMBtu per hour and a melting capacity of 0.5 TPH exhausting through stack #10.

(9) Furnace #11 constructed in 1990 with a maximum heat input capacity of 3.35 MM Btu per hour and a melting capacity of 0.5 TPH exhausting through stack #11.

All the furnaces use a small amount of flux only for cleaning purposes. Two separate types of flux are used, the first is a "wall flux" (FC-212-CC) for removing oxides from the walls of the furnaces, and the second is a "drossing flux" (WF-132) that is applied directly to the melt booth. Actual usage is approximately 150 pounds per month of each flux type per furnace.

(b) One (1) natural gas-fired dry hearth furnace (identified as DHF #14) constructed in 2005, melting clean scrap as defined in 40 CFR 63 Subpart RRR, with a maximum throughput rate of 0.75 tons per hour and utilizing three (3) burners. Two (2) burners are rated at 1.5 MMBtu per hour, and one (1) burner is rated at 1.0 MMBtu per hour.

(c) Seven (7) natural gas-fired core machines with a combined maximum capacity to produce 710 lbs of cores per hour, two (2) identified as Dependable 600 #1 and #2, each with a maximum heat input rate of 0.38 MMBtu/hr; two (2) identified as Dependable 400 #1 and #2, each with a maximum heat input rate of 0.27 MMBtu/hr; one (1) Dependable 200 with a maximum heat input rate of 0.17 MMBtu/hr; one (1) U360 with a maximum heat input rate of 1.00 MMBtu/hr; and one (1) Redford with a maximum heat input rate of 0.37 MMBtu/hr. Shell cores are made on all seven (7) natural gas-fired core machines. The core machines were constructed between 1970 and 1990.

(d) One (1) lost foam casting operation with a maximum throughput of 0.5 tons per hour with a filter box to control PM emissions exhausting indoors. The filter box controls a combination of emissions from pouring on the lost foam casting line and emissions from sand (extraction and fill stations). Small amounts of sand are used in the lost foam casting operation. The sand is recycled within the process. The casting operation was constructed in 1992.

(e) One (1) casting, grinding, cleaning, and finishing operation with a maximum throughput of 1.01 tons of aluminum per hour. Operation consists of band saws to cut off gates and risers as well as other hand-held finishing equipment (i.e., grinders, belt sealers, etc).

The casting, grinding, cleaning, and finishing operation was constructed between 1950 and 1955.

(f) One (1) sanding handling operation with a maximum throughput of 0.4765 tons per hour.

(g) One (1) pouring and casting operation with a maximum throughput of 5.25 tons of aluminum per hour. Pouring and casting operations are permanent and semi-permanent mold systems that do not require sand.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

Emission Units and Pollution Control Equipment Removed From the Source

(a) Two (2) natural gas-fired aging ovens (ID #1 and #2), each with a maximum heat input of 0.6 MMBtu/hr venting to the interior of the building.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) Three (3) natural gas-fired boilers (ID #1, #2 and #3) each with a maximum heat input of 0.244 MMBtu/hr, exhausting through stack #14. Boilers #1 and #2 were constructed in 1985. Boiler #3 was constructed in 1989 [326 IAC 6-2-4].

(b) One (1) natural gas-fired steam generating boiler (ID #4) with a maximum heat input capacity of 1.344 MMBtu/hr, exhausting through stacks 15 and 16. Boiler #4 was constructed in 1965 [326 IAC 6-2-3].

(c) Two (2) natural gas-fired aging ovens (ID #5 and #6), each with a maximum heat input of 0.6 MMBtu/hr venting to the interior of the building.

(d) Twenty (20) natural gas-fired torches venting to the interior of the building.

(e) Fifty-six (56) natural gas-fired space heaters each with a maximum heat input of 0.05 MMBtu/hr, venting to the interior of the building.

(f) One (1) natural gas-fired cafeteria furnace, with a maximum heat input of 0.075 MMBtu/hr, exhausting through stack # 12.

(g) One (1) natural gas-fired office furnace with a maximum heat input of 0.075 MMBtu/hr, exhausting through stack # 13.

(h) Four (4) 1,000 gallon above ground storage tanks to store LP gas.

Existing Approvals

The source has been operating under MSOP 069-11249-00048, issued on December 6, 1999, and the following approvals:

(a) Minor Permit Revision No. 069-12102-00048, issued April 2, 2001.

(b) First Notice Only Change No. 069-15400-00048, issued April 1, 2002.

(c) Second Notice Only Change No. 069-16109-00048, issued September 9, 2002.

(d) Third Notice Only Change No. 069-18244-00048, issued January 8, 2004.

All conditions from previous approvals were incorporated into this FESOP.

Enforcement Issue

(a) The Permittee submitted an application for a MSOP renewal on August 18, 2004. During the permitting process IDEM determined the Permittee had underestimated historical HAP emissions. The potential to emit HAP was greater than 10 tons per year. Therefore, this source was subject to 326 IAC 2-7 (Part 70 Permit Program). Production data indicates that actual emissions have not exceeded 10 tons per year.

It is the responsibility of the source to submit the appropriate permit. IDEM is aware that the source was not issued a FESOP by December 14, 1996 nor did they submit a Part 70 application by that date. Emissions from the lost foam casting operation have the potential to emit more of ten (10) tons per year of styrene, a hazardous air pollutant (HAP).

(b) The source is currently operating under a MSOP. This proposed FESOP permit requires production limits to limit the amount of styrene that can be released. IDEM is reviewing this matter and will take appropriate action.

Recommendation

The staff recommends to the Commissioner that the FESOP 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 FESOP application for the purposes of this review was received on August 25, 2004. Additional information was received on January 27, 2006 and October 10, 2006.

There was no notice of completeness letter mailed to the source.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix A of this document (pages 1 through 11).

There are no CO emissions from the source's ten (10) furnaces, pouring, cooling, and shakeout operations. IDEM provided notice in an August 11, 2006 memorandum to Indiana Cast Metals Association that the combined emissions from pouring, cooling, and shakeout processes should be calculated using the emission factor of 6.0 pounds of CO per ton of metal poured. This emission factor was developed for operations in iron foundries where metal is poured into molds and cores made from sand and binder chemicals. Greensand and core/chemically bonded mold binders are sources of carbon and CO emissions.

CO emissions are also not appropriate for the source's furnace lines (Furnace #9 and furnace #2) which use sand and binder chemicals (the lost foam casting operation). At the temperatures at which aluminum is poured in the lost foam casting process, the polystyrene will be emitted as styrene which leaves no available carbon for the formation of CO.

Potential To Emit

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, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation

is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Unrestricted Potential Emissions (tons/yr)
PM	41.8
PM10	29.4
SO_2	1.08
VOC	63.7
CO	15.7
NO_x	18.9

HAPs	Potential to Emit (tons/year)
Formaldehyde	0.09
Hexane	0.34
Dimethylphthalate	0.85
Styrene	51.2
Methanol	0.38
Total HAPs	53.0

(a) 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. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.

(b) Fugitive Emissions
This source is not a secondary aluminum foundry, because (1) the facility uses feedstock such as ingots, billets, bars or sows that are a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required; and (2) the facility does not produce intermediate forms of feedstock for sale or use by other facilities. Therefore, the source is not one of the 28 listed categories.

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD applicability.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Potential To Emit (tons/year)						
Process/emission unit	PM	PM-10	SO_2	VOC	CO	NO_x	Combined HAPs
Reverberatory and Dry Hearth Furnaces	24.6	24.6	0.45	4.46	--	--	--
Aluminum Pouring/Casting	0.33	0.33	0.45	3.13	--	0.22	--
Aluminum Grinding/Cleaning	7.08	0.02	--	--	--	--	0.09
Sand Handling	7.51	1.13	--	--	--	--	--
Natural Gas Combustion	0.33	1.33	0.10	0.96	14.7	17.5	0.33
Core Department	--	--	--	3.22		--	1.30
Lost Foam Casting Operation	--	--	--	9.90	--	--	9.90[a]
Total Emissions	39.8	27.4	1.00	21.7	14.7	17.7	11.6

[a]Pursuant to 326 IAC 2-8, styrene used in the lost foam casting operation is limited to less than ten (10) tons per year. This limit makes the total combined HAP emissions less than twenty five (25) tons per year.

County Attainment Status

The source is located in Huntington County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO_2	Attainment
NO_2	Attainment
8-hour 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. Effective October 25, 2006, 326 IAC 1-4-1 has been revised revoking the one hour ozone standard in Indiana.

(a) Huntington County has been classified as unclassifiable or 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 surrogate for PM2.5 emissions. See the State Rule Applicability - Entire Source section.

(b) Volatile organic compounds (VOC) and Nitrogen Oxides are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Huntington County has been designated as attainment or unclassifiable for the 8-hour ozone standard. Therefore, VOC 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 section

(c) Huntington County has been classified as attainment or unclassifiable in Indiana for PM10, SO_2, NOx, CO and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability - Entire Source section.

(d) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD.

Source Status

Existing Source PSD, and FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	121
PM-10	66.6
SO_2	1.09
VOC	22.4
CO	40.1
NO_x	17.7
Styrene	9.9
Combination HAPs	11.6

This existing source is not a major stationary source under PSD because no attainment regulated pollutant is emitted at a rate of 250 tons per year or greater, and it is not in one of the 28 listed source categories.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this permit.

(b) The requirements of the New Source Performance Standard, 40 CFR 60, Subpart K and Ka (326 IAC 12) for the storage tanks are not included in this permit, because they have a storage capacity less than 151,416 liters (40,000 gallons).

(c) The New Source Performance Standards 40 CFR 60, Subpart Kb (as revised October 2003) are not included in this permit for the storage tanks, because they each have storage capacities less than 75 cubic meters (19,812 gallons).

(d) The New Source Performance Standards (NSPS)(40 CFR Part 60, Subpart Da) is not included in the permit because the three (3) natural gas-fired boilers (maximum heat input of 0.24 MMBtu/hr each) and the one (1) natural gas-fired steam generating boiler (max. heat input of 1.34 MMBtu/hr) have heat input capacities that are less than 250 MMBtu/hr.

(e) The New Source Performance Standards (NSPS)(40 CFR Part 60, Subpart Db) is not included in the permit because the three (3) natural gas-fired boilers (maximum heat input of 0.24 MMBtu/hr each) and the one (1) natural gas-fired steam generating boiler (max. heat input of 1.34 MMBtu/hr) have heat input capacities that are less than 100 MMBtu/hr.

(f) The New Source Performance Standards (NSPS)(40 CFR Part 60, Subpart Dc) is not included in the permit because the three (3) natural gas-fired boilers (maximum heat input of 0.24 MMBtu/hr each) and the one (1) natural gas-fired steam generating boiler (max. heat input of 1.34 MMBtu/hr) have heat input capacities that are less than 10 MMBtu/hr.

(g) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart RRR are not included in the permit because pursuant to 40 CFR 63.1503, this source does not meet the definition of a secondary aluminum production facility. All furnaces melt only clean charge.

"Aluminum die casting facilities, aluminum foundries, and aluminum extrusion facilities are not considered to be secondary aluminum production facilities if the only materials they melt are clean charge, customer returns, or internal scrap, and if they do not operate sweat furnaces, thermal chip dryers, or scrap dryers, delacquering kilns, or decoating kilns."

(h) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63, Subpart DDDDD are not included in this permit. The conditions of the FESOP 069-19499-00048 require production limits to limit the amount of HAP that can be released to a level below major source thresholds as defined in §63.2. The 40 CFR Part 63, Subpart DDDDD compliance date is September 13, 2007, and therefore does not apply.

On June 8th, the DC Court of Appeals vacated the National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD). Since NESHAP 40 CFR Part 63, Subpart DDDDD has been vacated, pursuant to Section 112(j) of the Clean Air Act, major sources of Hazardous Air Pollutants (HAPs), in specified source categories, require a case-by-case MACT determination when EPA fails to promulgate a scheduled MACT Standard by the regulatory deadline. However, this source is not a major source of Hazardous Air Pollutants (HAPs).

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

This source, which began operation in the 1950's, is not a secondary aluminum foundry, because (1) the facility uses feedstock such as ingots, billets, bars or sows that are of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required; and (2) the facility does not produce intermediate forms of feedstock for sale or use by other facilities. Therefore, the source is not one of the 28 listed categories and fugitive emissions are not counted towards applicability of PSD. The PTE for all criteria pollutants is less than 250 tons per year. Therefore, pursuant to 326 IAC 2-2, this source is a PSD minor source and has not triggered PSD review.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The lost foam casting operation was constructed in 1980 and has the potential to emit greater than 10 tons per year of a single HAP. Since the facility was constructed prior to the July 27, 1997 applicability date, the provisions of 326 IAC 2-4.1 are not applicable.

326 IAC 2-6 (Emission Reporting)

This source is located in Huntington County and is not subject to the Part 70 permit program and has potential lead emissions less than five (5) tons per year. Therefore, this source is only subject to 326 IAC 2-6-5 (Additional Information Requests).

326 IAC 2-8 (Federally Enforceable State Operating Permit Program)

This source submitted an application for a MSOP renewal on August 18, 2004. On January 27, 2006 new emissions data were provided by the Permittee. The new data indicated that previous permit applications had underestimated HAP emissions from the lost foam casting operation. The conditions of the FESOP 069-19499-00048 require production limits to limit the potential to emit to less than ten (10) tons per year of any HAP and less than twenty-five (25) tons per year of any combination of HAPs.

HAP emissions from the lost foam process are directly proportional to the amount of lost foam used in casting. The Permittee has made the worst case assumption that 100% of the foam used in the lost foam casting operation is emitted as styrene. Lost foam usage shall be limited to less than 19,795 pounds per twelve (12) consecutive month period, which is equivalent to 9.9 tons per year of styrene emissions.

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 6-5 (Fugitive Particulate Matter Emission Limitations)

The source is located in Huntington County and was constructed after December 13, 1985. The requirements of 326 IAC 6-5 for the lost foam mold sand handling operation and the grinding operation are not included in this permit. The particulate emissions from the lost foam mold sand handling operation pass through an exhaust vent in the roof and are not fugitive emissions as defined by 326 IAC 6-5-2. The aluminum crushing/grinding operation was installed in 1950. Pursuant to 326 IAC 6-5-1(b), this source is exempt from the requirements of 326 IAC 6-5.

State Rule Applicability – Boilers

326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating)

The one (1) natural gas-fired steam generating boiler (identified as Boiler # 4) rated at 1.344 MMBtu/hr and constructed in 1965, is subject to the particulate limitations of 326 IAC 6-2-3. The particulate limit shall be calculated for all facilities using the equation below:

$$Pt = (C \times a \times h) / (76.5 \times Q^{0.75} \times N^{0.25})$$

Where $C = 50\ u/m^3$
Pt = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)
Q = total source maximum operating capacity rating (MMBtu/hr)
N = number of stacks = 2
a = plume rise factor (0.67)
h = stack height (ft) = 28

$Pt = (50*0.67*28)/(76.5*1.344^{0.75}*2^{0.25}) = 8.26$ lbs PM/MMBtu

However, pursant to 326 IAC 6-2-3(d) particulate emissions from facilities used for indirect heating purposes which were in operation June 8, 1972, shall in no case exceed 0.8 lb/MMBtu. Therefore, PM emissions from Boiler # 4 shall be limited to 0.8 lb/MMBtu.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The three (3) natural gas-fired boilers (identified as Boiler # 1, 2, and 3) each rated at 0.244 MMBtu/hr are subject to the particulate limitations of 326 IAC 6-2-4. The particulate limit shall be calculated for all facilities using the equation below:

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

Where Pt = maximum allowable particulate matter (PM) emitted per MMBtu/hr heat input
Q = total source max. indirect heater input = 2.076 MMBtu/hr

$Pt = (1.09)/(2.076^{0.26}) = 0.90$ MMBtu/hr

However, pursuant to 326 IAC 6-2-4, indirect heating units with a heat input rate (Q) of less than 10 MMBtu/hr shall not exceed 0.6 lb/MMBtu. Therefore, the PM emissions from each of the three (3) 0.244 MMBtu/hr boilers shall be each limited to 0.60 lb/MMBtu heat input. Boiler #1 and 2 were constructed in 1985 and boiler #3 was constructed in 1989.

State Rule Applicability – Reverberatory and Dry Hearth Furnaces

326 IAC 6-3-2 (Particulate)

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes), the allowable particulate emission rate from the following emission units shall not exceed the emission limits listed in the table below:

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

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

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Reverberatory Furnace # 2	0.75	3.38
Reverberatory Furnace # 4	0.50	2.58
Reverberatory Furnace # 5	0.50	2.58
Reverberatory Furnace # 6	0.50	2.58
Reverberatory Furnace # 7	0.50	2.58
Reverberatory Furnace # 8	0.50	2.58
Reverberatory Furnace # 9	0.50	2.58
Reverberatory Furnace # 10	0.50	2.58
Reverberatory Furnace # 11	0.50	2.58
Dry Hearth Furnace DHF #14	0.75	3.38
Dependable 600 # 1	0.04	0.47
Dependable 600 # 2	0.04	0.47
Dependable 400 # 1	0.04	0.47
Dependable 400 # 2	0.04	0.47
Dependable 200	0.04	0.47
U360	0.04	0.47
Redford	0.04	0.47
Lost Foam Casting Operation	0.50	2.58
Casting/Grinding/Cleaning/ Finishing	1.01	4.13
Sanding/Grinding/Handling	0.48	2.50
Pouring and Casting	5.25	12.5

Emission calculations based on STAPPA/ALAPCO, AP-42, and EPA's FIRE emission factors indicate that each emission unit is able to comply with this limit without using a control device.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

On January 27, 2006, new VOC emission data were provided by the Permittee. The new data indicated that previous permit applications had underestimated styrene emissions from the lost foam casting operation. The lost foam casting operations were constructed after January 1, 1980 and have the potential to emit styrene, a hazardous air pollutant (HAP) and volatile organic compound (VOC), greater than twenty-five (25) tons per year. The source failed to take twenty-five (25) tons per year limit before the foam casting furnaces began operation. General Aluminum Manufacturing Company is subject to 326 IAC 8-1-6, because of the once-in-always-in provisions in 326 IAC 8-1-1(a).

Permittee is required to control VOC emissions from lost foam casting operations using the Best Available Control Technology (BACT). Based on the information provided in Appendix B, BACT for lost foam casting (furnaces #2 and #9) has been determined to be the following:

(a) The total VOC input to lost foam casting (furnaces #2 and #9) shall be limited to less than 9.9 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) Lost foam usage shall be limited to less than 19,795 pounds per twelve (12) consecutive month period, which is equivalent to 9.9 tons per year of VOC emissions.

Testing Requirements

Lost Foam Casting Operation
Testing is not required for HAP from the lost foam casting operation because this permit includes a foam usage limit that will ensure that emission of styrene are less ten (10) tons per year and 326 IAC 2-4.1 does not apply. Testing is also not required for VOC from the lost foam casting operation. Compliance with this limit shall be based on the assumption that 100% of the polystyrene foam used is emitted as VOC and all emitted VOC is styrene.

Conclusion

The operation of this aluminum foundry shall be subject to the conditions of the FESOP F069-19499-00048.

Appendix A: Emission Calculations
Secondary Metal Production: Aluminum Furnaces

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

	Date Installed	Melting Capacity (tons/hr)	Heat Imput Capacity (MMBtu/hr)	Melting Capacity (lbs/hr)
Furnace #2	Nov-92	0.75	3.55	1,500
Furnace #4	Jun-94	0.5	3.55	1,000
Furnace #5	Nov-05	0.5	2.90	1,000
Furnace #6	Jun-90	0.5	4.62	1,000
Furnace #7	Jun-90	0.5	3.35	1,000
Furnace #8	Apr-96	0.5	3.35	1,000
Lost foam (Furnace #9 or Furnace #2) *	Nov-92	0.5	3.35	1,000
Furnace #10	Nov-05	0.5	3.35	1,000
Furnace #11	Jun-90	0.5	3.35	1,000
Furnace #14 (DHF14)	Sep-05	0.75	3.00	1,500
Total		**5.50**	**34.4**	**11,000**

Potential to Emit for Reverberatory Furnaces #2, #4, #5, #6, #7, #8, #9, #10, #11, and DHF14

Maximum Throughput (lbs/hr)	Maximum Throughput (tons/hr)
11,000	5.50

Emission Factor (lbs/ton metal produced)					
PM **	**PM10**	**SOx *****	**NOx**	**VOC *****	**CO**
1.10	1.10	0.02	--	0.20	--

	Potential to Emit (tons/yr)					
	PM	**PM10**	**SOx**	**NOx**	**VOC**	**CO**
PTE (lbs/hr)	6.05	6.05	0.11	--	1.10	--
PTE (lbs/day)	145	145	2.64	--	26.4	--
PTE (tons/yr)	26.5	26.5	0.48	--	4.82	--

All the furnaces use a small amount of flux only for cleaning purposes.
All the furnaces melt clean scrap as defined in the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR.
* Melting capacity shall be limited to remain a minor source for HAP (see emissions from lost foam, page 9).
** PM/PM10 emission factor of 1.1 lb/ton is for furnaces with clean metal charge from Air Quality Permits, Vol. 1 (1991 Edition) by STAPPA/ALAPCO.
*** Emission factors are from FIRE version 6.24 (SCC#s 3-04-001-01, 3-04-001-03).

Methodology

PTE (lbs/hr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal)
PTE (lbs/day) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 24 (hrs/day)
PTE (tons/yr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 8760 (hrs/yr) x 1/2000 (ton/lbs)

Appendix A: Emission Calculations
Production Limited, Secondary Metal Production: Aluminum Furnaces

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

	Date Installed	Melting Capacity (tons/hr)	Heat Imput Capacity (MMBtu/hr)	Limited Capacity (lbs/hr)
Furnace #2	Nov-92	0.75	3.55	1,500
Furnace #4	Jun-94	0.5	3.55	1,000
Furnace #5	Nov-05	0.5	2.90	1,000
Furnace #6	Jun-90	0.5	4.62	1,000
Furnace #7	Jun-90	0.5	3.35	1,000
Furnace #8	Apr-96	0.5	3.35	1,000
Lost foam (Furnace #9 or Furnace #2) *	Nov-92	0.10	0.65	193
Furnace #10	Nov-05	0.5	3.35	1,000
Furnace #11	Jun-90	0.5	3.35	1,000
Furnace #14 (DHF14)	Sep-05	0.75	3.00	1,500
Total		**5.10**	**31.7**	**10,193**

Potential to Emit for Reverberatory Furnaces #2, #4, #5, #6, #7, #8, #9, #10, #11, and DHF14

Maximum Throughput (lbs/hr)	Maximum Throughput (tons/hr)
10,193	5.10

Emission Factor (lbs/ton metal produced)					
PM **	**PM10**	**SOx *****	**NOx**	**VOC *****	**CO**
1.10	1.10	0.02	--	0.20	--

	Potential to Emit (tons/yr)					
	PM	**PM10**	**SOx**	**NOx**	**VOC**	**CO**
PTE (lbs/hr)	5.6	5.6	0.10	--	1.02	--
PTE (lbs/day)	135	135	2.45	--	24.5	--
PTE (tons/yr)	25	24.6	0.45	--	4.46	--

No fluxing is required for these furnaces. Only clean charge is used in the furnaces.
* Melting capacity shall be limited to remain a minor source for HAP (see emissions from lost foam, page 9).
** PM/PM10 emission factor of 1.1 lb/ton is for furnaces with clean metal charge from Air Quality Permits, Vol. 1 (1991 Edition) by STAPPA/ALAPCO.
*** Emission factors are from FIRE version 6.24 (SCC#s 3-04-001-01, 3-04-001-03).

Methodology
PTE (lbs/hr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal)
PTE (lbs/day) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 24 (hrs/day)
PTE (tons/yr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 8760 (hrs/yr) x 1/2000 (ton/lbs)

Appendix A: Emission Calculations
Secondary Metal Production: Aluminum Pouring/Casting

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

Maximum Throughput (lbs/hr)
11,000

Maximum Throughput (tons/hr)
5.50

	Emission Factor (lbs/ton metal poured)					
	PM *	**PM10 ***	**SOx ****	**NOx ****	**VOC ****	**CO *****
	0.015	0.015	0.02	0.01	0.14	--
	Potential to Emit (tons/yr)					
	PM *	**PM10 ***	**SOx ****	**NOx ****	**VOC ****	**CO**
PTE (lbs/hr)	0.08	0.08	0.11	0.06	0.77	--
PTE (lbs/day)	1.98	1.98	2.64	1.32	18.5	--
PTE (tons/yr)	0.36	0.36	0.48	0.24	3.37	--

* Emission factors are from FIRE version 6.24 for zinc casting (3-04-008-73), which is the only available emission factor in FIRE for a pure metal of similar atomic weight.

** Emission Factors are from FIRE version 6.24 (SCC# 3-04-001-14) for aluminum pouring and casting.

*** Emission Factors referenced in the August 11, 2006 memo from IDEM to Indiana Cast Metals Association were developed for pouring/casting operations in iron foundries where metal is poured into molds and cores made from sand and binder chemicals. Aluminum die casting has less available carbon.

Pouring and casting operations are permanent and semi-permanent mold systems that do not require sand.

Methodology

PTE (lbs/hr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal)

PTE (lbs/day) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 24 (hrs/day)

PTE (tons/yr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 8760 (hrs/yr) x 1/2000 (ton/lbs)

Appendix A: Emission Calculations

Production Limited, Secondary Metal Production: Aluminum Pouring/Casting

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

Maximum Throughput (lbs/hr)	Maximum Throughput (tons/hr)
10,193	5.10

	Emission Factor (lbs/ton metal poured)					
	PM *	**PM10 ***	**SOx ****	**NOx ****	**VOC ****	**CO *****
	0.015	0.015	0.02	0.01	0.14	--
	Potential to Emit (tons/yr)					
	PM *	**PM10 ***	**SOx ****	**NOx ****	**VOC ****	**CO**
PTE (lbs/hr)	0.08	0.08	0.10	0.05	0.71	--
PTE (lbs/day)	1.83	1.83	2.45	1.22	17.1	--
PTE (tons/yr)	0.33	0.33	0.45	0.22	3.13	--

* Emission factors are from FIRE version 6.24 for zinc casting (3-04-008-73), which is the only available emission factor in FIRE for a pure metal of similar atomic weight.

** Emission Factors are from FIRE version 6.24 (SCC# 3-04-001-14) for aluminum pouring and casting.

*** Emission Factors referenced in the August 11, 2006 memo from IDEM to Indiana Cast Metals Association were developed for pouring/casting operations in iron foundries where metal is poured into molds and cores made from sand and binder chemicals. Aluminum die casting has less available carbon.

Pouring and casting operations are permanent and semi-permanent mold systems that do not require sand.

Methodology

PTE (lbs/hr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal)

PTE (lbs/day) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 24 (hrs/day)

PTE (tons/yr) = Maximum Throughput (lbs metal/hr) x 1/2000 (ton metal/lbs metal) x Emission Factor (lbs/ton metal) x 8760 (hrs/yr) x 1/2000 (ton/lbs)

Appendix A: Emission Calculations
Secondary Metal Production: Aluminum Grinding, Cleaning and Sand Handling

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

Process:	Maximum Throughput Rate	Pollutant	Emission Factor	PTE Before Controls	Type of control	Control Efficiency	PTE After Controls
	(tons metal/hr)		(lb/ton metal produced)	(ton/yr)		(%)	(ton/yr)
Grinding Cleaning	1.01	PM	1.60	7.08	none	0.00%	7.08
SCC# 3-04-003-40		PM-10	4.50E-03	0.02	none	0.00%	0.02
		chromium	8.00E-04	3.54E-03	none	0.00%	3.54E-03
		cobalt	8.00E-04	3.54E-03	none	0.00%	3.54E-03
		nickel	8.80E-03	3.89E-02	none	0.00%	3.89E-02
		manganese	8.80E-03	3.89E-02	none	0.00%	3.89E-02
		lead	8.00E-04	3.54E-03	none	0.00%	3.54E-03

Process:	Maximum Throughput Rate	Pollutant	Emission Factor	PTE Before Controls	Type of control	Control Efficiency	PTE After Controls
	(tons sand/hr)		(lb/ton sand handled)	(ton/yr)		(%)	(ton/yr)
Sand Handling *	0.48	PM	3.60	7.51	none	0.00%	7.51
SCC# 3-04-003-50		PM-10	0.54	1.13	none	0.00%	1.13

Emission factors for PM from grinding/finishing operations are from a Bernard S. Gutow Article, Modern Castings, January 1972.
Emission factors for PM10 grinding/finishing are from FIRE version 6.23 - Grey Iron Foundries, Castings Finishing (SCC 3-04-003-60).
Emission factors for metal HAPs are from SPECIATE version 3.2 - Aluminum Foundry, Reverberatory Furnace (Profile # 42304).
Emission factors for sand handling are from FIRE version 6.23 - Grey Iron Foundries, Sand Grinding/Handling (SCC 3-04-003-50).
* Small amounts of sand are used in the lost foam operation. The sand is recycled within the process.

Methodology:
PTE (tons/yr) = Maximum Throughput (tons metal/hr) x Emission Factor (lbs/ton metal) x 8760 (hrs/yr) x 1/2000 (ton/lbs)
HAP Emission Factor (lb/ton metal produced) = PM emission factor (lb/ton metal) x weight percent HAP (%)

Appendix A: Emissions Calculations
Natural Gas Combustion

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

Total Heat Input Capacity
MMBtu/hr
43.4

Total Potential Throughput
MMSCF/yr
373

Facility Description	Emission Unit IDs	No. of Units	Total MMBtu/hr
Reverberatory Furnaces and Dry Hearth Furnaces	#2, #4, #5, #6, #7, #8, #9, #10, #11, DHF14	10	34.4
Aging Ovens	#5, #6	2	1.20
Core Machines	Dep 600 #1, Dep 600 #2, Dep 400 #1, Dep 400 #2, Dep 200, U360, Redford	7	2.84
Space Heaters		56	2.80
Cafeteria Furnace		1	0.075
Office Furnace		1	0.075
Boilers	#1, #2, #3, #4	4	2.08
Total		**81**	**43.4**

Total Natural Gas Combustion

	PM*	PM10*	SO_2	NOx **	VOC	CO
Emission Factors (lb/MMSCF)	1.90	7.60	0.60	100	5.50	84.0
Potential to Emit (tons/yr)	0.35	1.42	0.11	18.7	1.03	15.7

* PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM combined
** Emission Factors for NOx (Uncontrolled) = 100 lb/MMSCF
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMSCF = 1,000,000 Standard Cubic Feet of Gas
Emission factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998)

Methodology
Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 MMSCF/1,020 MMBtu
Potential to Emit (tons/yr) = Total Potential Throughput (MMSCF/yr) x Emission Factor (lbs/MMSCF) x 1/2,000 (ton/lbs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor (lb/MMCF)	2.10E-03	1.20E-03	7.50E-02	1.80E+00	3.40E-03
PTE (tons/yr)	3.92E-04	2.24E-04	1.40E-02	3.36E-01	6.34E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor (lb/MMCF)	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03
PTE (tons/yr)	9.33E-05	2.05E-04	2.61E-04	7.09E-05	3.92E-04

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998

Methodology
Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 MMCF/1,000 MMBt
PTE (tons/yr) = Total Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1/2,000 (ton/lbs

Appendix A: Emissions Calculations
Production Limited, Natural Gas Combustion

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

Total Heat Input Capacity
MMBtu/hr
40.7

Total Potential Throughput
MMSCF/yr
350

Facility Description	Emission Unit IDs	No. of Units	Total MMBtu/hr
Reverberatory Furnaces and Dry Hearth Furnaces	#2, #4, #5, #6, #7, #8, #9, #10, #11, DHF14	10	31.7 *
Aging Ovens	#5, #6	2	1.20
Core Machines	Dep 600 #1, Dep 600 #2, Dep 400 #1, Dep 400 #2, Dep 200, U360, Redford	7	2.84
Space Heaters		56	2.80
Cafeteria Furnace		1	0.075
Office Furnace		1	0.075
Boilers	#1, #2, #3, #4	4	2.08
Total		**81**	**40.7**

Total Natural Gas Combustion

	PM**	PM10**	SO_2	NOx ***	VOC	CO
Emission Factors (lb/MMSCF)	1.90	7.60	0.60	100	5.50	84.0
Potential to Emit (tons/yr)	0.33	1.33	0.10	17.5	0.96	14.7

* The melting capacity of aluminum furnaces #9 is production limited such that the source can remain a minor source for HAP (see emissions from lost foam, page 9
** PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM combined
*** Emission Factors for NOx (Uncontrolled) = 100 lb/MMSCF

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMSCF = 1,000,000 Standard Cubic Feet of Gas
Emission factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998

Methodology
Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 MMSCF/1,020 MMBtu
Potential to Emit (tons/yr) = Total Potential Throughput (MMSCF/yr) x Emission Factor (lbs/MMSCF) x 1/2,000 (ton/lbs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor (lb/MMCF)	2.10E-03	1.20E-03	7.50E-02	1.80E+00	3.40E-03
Potential to Emit (tons/yr)	3.67E-04	2.10E-04	1.31E-02	3.15E-01	5.95E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor (lb/MMCF)	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03
Potential to Emit (tons/yr)	8.75E-05	1.92E-04	2.45E-04	6.65E-05	3.67E-04

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998)

Methodology
Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 MMCF/1,000 MMBtu
PTE (tons/yr) = Total Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1/2,000 (ton/lbs)

Appendix A: Emission Calculations
VOC and HAP Emissions from Core Department

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

Process: Core Department (Iron-surface coating chemicals used)	Maximum Throughput Rate (tons/hr)	Pollutant	Weight % Pollutant (lb/ton coating)	PTE VOC (ton/yr)
Instadraw 1700	0.000023	VOC	100%	0.20
Furan Binder 1000	0.00043	VOC	35.0%	1.32
MEKP 1400	0.00023	VOC	52.0%	1.05
Black Diamond	0.000075	VOC	100%	0.66
Total				**3.22**

Methodology:
PTE (tons/yr) = Max. Throughput Rate (tons/hr) x 8760 (hrs/yr) x Weight % pollutant
Note: There are no controls utilized in the core department.

Process: SO_2 Core Forming Chemicals Used	HAP	Material Usage (lbs/hr)	Weight % HAP in Material	PTE HAP (lbs/hr)	PTE HAP (tons/yr)
Furan Binder 1000	Methanol	0.86	10.0%	0.09	0.38
	Formaldehyde	0.86	2.00%	0.02	0.08
MEKP 1400	Dimethylphthalate	0.46	42.0%	0.19	0.85
Total HAP Emissions				**0.30**	**1.30**

Notes: The heat core forming process does not emit any HAPs.

Methodology
PTE HAP (tons/yr) = Material Usage (lbs/hr) x 8760 (hrs/yr) x Weight % HAP x 1 ton/2000 lbs.
PTE VOC (tons/yr) = Maximum Throughput Rate (tons/hr) x 8760 (hrs/yr) x Weight % VOC

Appendix A: Emission Calculations
VOC and HAP Emissions from Lost Foam

Company Name: General Aluminum Manufacturing Company
Address: 1345 Henry Street, Huntington, Indiana, 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

	Maximum Aluminum Poured		Lost Foam			CO		VOC		Styrene	
	(lbs/yr)	(tons/yr)	(oz./casting	(lbs/casting)	(lbs/yr)	(lbs/ton)*	(tons/yr)	(lbs/yr)	(tons/yr)	(lbs/yr)	(tons/yr)
Potential (Based on Furnace #2 and #9 Capacity)	21,900,000	109,500	3	0.1875	102,496	0	0	102,496	51.2	102,496	51.2
Potential (Limited PTE)	**1,691,835**	**8,459**	**3**	**0.1875**	**19,795**	**0**	**0.0**	**19,795**	**9.9**	**19,795**	**9.9**

Potential to emit is based on the production capacity for Furnace #9. Furance #2 can also pour to the lost foam casting line, but it has not been used to date.
VOC and HAP emissions from the lost foam process are directly proportional to the amount of lost foam used in casting. The Permittee has made the worst case assumption that 100% of the foam used in the lost foam molding operation is emitted as VOC and all the VOC is styrene. casting process, the polystyrene will be emitted as styrene which leaves no available carbon for the formation of CO. The emission factor for CO contained in August 11, 2006 memo from IDEM to Indiana Cast Metals Association is not appropriate. It was developed for pouring/casting operations in iron foundries where metal is poured into molds and cores made from sand and binder chemicals.

Methodology
PTE HAP (tons/yr) = Material Usage (lbs/hr) x 8760 (hrs/yr) x Weight % HAP x 1 ton/2000 lbs.
PTE VOC (tons/yr) = Maximum Throughput Rate (tons/hr) x 8760 (hrs/yr) x Weight % VOC

Appendix A: Emission Calculations
Summary

Company Name: General Aluminum Manufacturing
Address: 1345 Henry Street, P.O.Box 709, Huntington, Indiana 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

POTENTIAL TO EMIT IN TONS PER YEAR (CRITERIA POLLUTANTS)

Process	PM	PM10	SO_2	VOC	CO	NOx
Reverberatory and Dry Hearth Furnaces	26.5	26.5	0.48	4.82	--	--
Aluminum Pouring/Casting	0.36	0.36	0.48	3.37	--	0.24
Aluminum Grinding/Cleaning	7.08	0.02	--	--	--	--
Sand Handling	7.51	1.13	--	--	--	--
Natural Gas Combustion	0.35	1.42	0.11	1.03	15.7	18.7
Core Department	--	--	--	3.22	--	--
Lost Foam	--	--	--	51.2	--	--
TOTAL	41.8	29.4	1.08	63.7	15.7	18.9

POTENTIAL TO EMIT IN TONS PER YEAR (HAPS)

Process	Dimethylphthalate	Formaldehyde	Hexane	Methanol	Styrene
Natural Gas Combustion	--	0.01	0.34	--	--
Core Department	0.85	0.08	--	0.38	--
Lost Foam	--	--	--	--	51.2
TOTAL	0.85	0.09	0.34	0.38	51.2

Process	Lead	Cobalt	Chromium	Manganese	Nickel
Aluminum Grinding/Cleaning	3.54E-03	3.54E-03	3.54E-03	3.89E-02	3.89E-02
Natural Gas Combustion	9.33E-05	--	2.61E-04	7.09E-05	3.92E-04
Core Department	--	--	--	--	--
TOTAL	3.63E-03	3.54E-03	3.80E-03	0.04	0.04

Appendix A: Emission Calculations
Production Limited Summary

Company Name: General Aluminum Manufacturing
Address: 1345 Henry Street, P.O.Box 709, Huntington, Indiana 46750
Permit Number: 069-19499-00048
Plt ID: 069-00048
Reviewer: ERG/BL
Date: September 21, 2004

POTENTIAL TO EMIT IN TONS PER YEAR (CRITERIA POLLUTANTS)

Process	PM	PM10	SO_2	VOC	CO	NOx
Reverberatory and Dry Hearth Furnaces	24.6	24.6	0.45	4.46	--	--
Aluminum Pouring/Casting	0.33	0.33	0.45	3.13	--	0.22
Aluminum Grinding/Cleaning	7.08	0.02	--	--	--	--
Sand Handling	7.51	1.13	--	--	--	--
Natural Gas Combustion	0.33	1.33	0.10	0.96	14.7	17.5
Core Department	--	--	--	3.22	--	--
Lost Foam	--	--	--	9.90	--	--
TOTAL	39.8	27.4	1.00	21.7	14.7	17.7

POTENTIAL TO EMIT IN TONS PER YEAR (HAPS)

Process	Dimethylphthalate	Formaldehyde	Hexane	Methanol	Styrene
Natural Gas Combustion	--	0.01	0.31	--	--
Core Department	0.85	0.08	--	0.38	--
Lost Foam	--	--	--	--	9.90
TOTAL	0.85	0.09	0.31	0.38	9.90

Process	Lead	Cobalt	Chromium	Manganese	Nickel
Aluminum Grinding/Cleaning	3.54E-03	3.54E-03	3.54E-03	3.89E-02	3.89E-02
Natural Gas Combustion	8.75E-05	--	2.45E-04	6.65E-05	3.67E-04
Core Department	--	--	--	--	--
TOTAL	3.63E-03	3.54E-03	3.78E-03	0.04	0.04

Appendix B
Best Available Control Technology (BACT) Determinations

Source Background and Description

Source Name:	General Aluminum Manufacturing Company
Source Location:	1345 Henry Street, Huntington, Indiana 46750
County:	Huntington
SIC Code:	3365
Permit Renewal No.:	069-19499-00048
Permit Reviewer:	ERG/BL

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) review for a New Source Construction and Federally Enforceable State Operating Permit (FESOP) for an existing aluminum foundry, owned and operated by General Aluminum Manufacturing Company (GAMCO) located at 1345 Henry Street, Huntington, Indiana 46750. This permit includes the operation of the following source of VOC emissions with potential emissions in excess of twenty-five (25) tons per year:

(d) One (1) lost foam casting operation with a maximum throughput of 0.5 tons per hour with a filter box to control PM emissions exhausting indoors. The filter box controls a combination of emissions from pouring on the lost foam casting line and emissions from sand (extraction and fill stations). Small amounts of sand are used in the lost foam casting operation. The sand is recycled within the process. The casting operation was constructed in 1992.

On July 16, 2007, GAMCO submitted an application to the IDEM, OAQ requesting to continue to operate an aluminum foundry that includes a total of nine (9) natural gas-fired reverberatory furnaces which melt clean charge and internal runaround. Molten metal from the furnaces is cast via semi-permanent / permanent molds or lost foam casting (LFC). One furnace is dedicated to foam casting (Furnace #9) and a second theoretically can use foam (Furnace #2), both units were installed in 1992. The LFC operations potential to emit VOC is greater than twenty-five (25) tons per year are not otherwise regulated by any other provisions of 326 IAC 8, 20-48, or 20-56. The source failed to take a 25 ton per year limit before the foam casting furnaces began operation, GAMCO is subject to 326 IAC 8-1-6, because of the once-in-always-in provisions in 326 IAC 8-1-1(a). Pursuant to 326 IAC 8-1-6, the Permittee shall reduce VOC emissions using best available control technology (BACT).

IDEM, OAQ conducts BACT analyses in accordance with the “Top-Down” Best Available Control Technology process, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

(a) Identify all potentially available control options;
(b) Eliminate technically infeasible control options;
(c) Rank remaining control technologies by control effectiveness;
(d) Evaluate the most effective controls and document the results as necessary; and
(e) Select BACT.

In accordance with EPA guidance, the BACT analysis should take into account the energy, environmental, and economic impacts. Emission reductions may be achieved through the application of available control techniques, changes in process design, and/or operational limitations. These BACT determinations are based on the following information:

(a) The BACT analysis information submitted by GAMCO on July 16, 2007;

(b) Information from vendors/suppliers;

(c) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;

(d) State and local air quality permits; and

(e) The surface coating material content limits contained in NESHAP, Subpart II - National Emission Standards for Hazardous Air Pollutants from Shipbuilding and Ship Repair (Surface Coating).

VOC BACT

LFC is the process by which polystyrene molds are placed in a flask and surrounded by compacted sand. When the molten metal is poured into the cap the polystyrene mold evaporates leaving a void which is filled by the molten aluminum. GAMCO assumes 100% of polystyrene is emitted as VOC.

Step 1 - Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the lost foam casting operations:

(a) IDEM, OAQ reviewed the following three control technologies:

(1) Thermal Incineration:

Thermal incinerators generally consist of auxiliary fuel-fired burners and a combustion chamber with controlled oxygen or combustion air introduction. The principle of destruction is to raise the exhaust gases to a sufficient temperature and for a minimum amount of time so that oxidation occurs (USEPA recommends 1,800°F for 2 seconds). The combustion chamber configuration must provide effective mixing within the chamber to completely combust VOCs. With concentrated pollutant streams of VOC, the destruction and removal efficiency (DRE) of a thermal incinerator is expected to be in the range of 95 to 99 percent. However, little, if any, information exists for VOC concentrations below 20 ppm.

In general, the primary difference between thermal and catalytic incinerators is that the catalytic type uses a catalyst bed to effectively reduce reaction temperatures to the range of 400 to 800°F. The thermal type does not utilize a catalyst bed and has typical operating temperatures ranging from 1,200 to 1,800°F. Both thermal and catalytic types of incinerators can be configured with recuperative heat exchangers to recover the exiting exhaust gas heat. When so configured, thermal incinerators are generally classified thermal recuperative incinerators.

(A) Thermal Regenerative:

The expected heat energy recovery is approximately 95 percent. This type of thermal incineration is generally applicable for exhausts with contaminants that are present at less than 10 percent of the Lower Explosive Limit (LEL).

(B) Thermal Recuperative:

Same as the “thermal regenerative” except that recuperative heat exchangers are used to recover the exiting exhaust gas heat and reduce the auxiliary fuel consumption. Secondary energy recovery is typically 40 to 70 percent. This type of thermal incineration is generally applicable for exhausts with contaminants that are present at 10 to 25 percent of the LEL.

Thermal incinerators are currently available and have been installed on a wide variety of processes to control VOCs and hazardous air pollutants. This technology has not been successfully demonstrated on VOC emissions from lost foam casting.

(2) Catalytic Incineration:

Catalytic incinerators use a bed of active material (catalyst) that facilitates the overall oxidation of combustible gases. The catalyst increases the reaction rate and allows the destruction of VOC at lower temperatures than a thermal incinerator. However, the DRE is only 90 to 95 percent, which is lower than that of a thermal incinerator. The catalyst is typically a porous noble metal material that is supported in individual compartments within the unit. An auxiliary fuel-fired burner ahead of the bed heats the entering exhaust gases to 500 to 800°F to maintain proper bed temperature.

Catalytic incinerators can be equipped with recuperative heat exchangers to recover the exiting exhaust gas heat. When so configured, catalytic incinerators are generally classified catalytic recuperative incinerators. Without recuperative heat exchangers, they are generally classified as catalytic regenerative incinerators.

(A) Catalytic Regenerative:

The expected heat energy recovery is approximately 90 percent. This type of incineration is generally applicable for exhausts with contaminants that are present at 5 to 10 percent of the LEL.

(B) Catalytic Recuperative:

Same as the “catalytic regenerative” except that recuperative heat exchangers are used to recover the exiting exhaust gas heat. Secondary energy recovery is typically 70 percent. This type of incineration is generally applicable for exhausts with contaminants that are present at 10 to 25 percent of the LEL.

Catalytic systems are limited in application due to potential poisoning, deactivation or blinding of the catalyst. Lead, arsenic, vanadium, and phosphorus are generally considered poisons to oxidation catalysts and deactivate the available reaction sites on the catalyst surface. Particulate also can build up on the catalyst, effectively blocking the porous catalyst matrix and rendering the catalyst inactive. In cases of significant poisoning compounds and particulate loading, catalyst replacement costs are significant.

Catalytic incinerators are currently available and have been installed on a wide variety of processes to control VOCs and hazardous air pollutants. Additionally, this technology has been successfully demonstrated on VOC emissions from LFC. The costs associated with catalytic incinerators are prohibitive.

(3) Carbon Adsorber:

Carbon Adsorption is a commonly used as a pollution control and/or solvent recovery technique. Although carbon is the most widely used adsorption media, other adsorption media include silica gel and alumina. Typically removal efficiencies of 95 to 99 percent can be achieved via this technology, which typically corresponds to outlet concentrations around 50 ppm. Carbon adsorption therefore is not recommended for applications with low inlet concentrations below 700 ppm.

Based on the estimated inlet concentration from the lost foam operation this technology is not technically feasible.

(4) Absorber

Absorption is widely used as a raw material or product recovery technique in separation and purification of gaseous streams containing high concentrations of VOCs. This emissions technique is more commonly employed for inorganic vapors than for organic vapors. There are many factors that affect the suitability of absorption including, but not

limited to, the availability of a suitable solvent and disposal costs associated with absorber effluent. In some cases removal efficiencies in excess of 99 percent can be achieved, however absorbers are not recommended for applications with VOC inlet concentrations below 250 ppm.

Therefore due to the low inlet VOC concentration associated with the lost foam casting process in addition to the high cost that would be associated with disposal of the absorber effluent, if a suitable effluent could be found, this technology is not technically feasible.

(5) Condensor

Condensors are widely used as raw material and product recovery devices in applications with high VOC concentrations in the inlet stream (usually > 5,000 ppm). Removal efficiencies of 50 top 90 percent can be achieved by condensers. Condensers are not typically recommended for streams with flow rates greater than 2,000 scfm. Therefore, based on the estimated flow rate and low inlet VOC concentration from the lost foam casting operation, this control technology is not technically feasible.

(b) The search for secondary aluminum casting lines in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified two (2) facilities with similar process. However, per confirmation from Tennessee Department of Environment and Conservation (TDEC) and facility personnel, the Norandal USA facility (950089P) does not operate a lost foam casting line but rather operates an ingot casting line. Review of the RBCL did find one similar source, GM Saginaw, MI (412-97B), with a catalytic oxidizer for control of VOCs from the lost foam casting operation. Due to the lack of data on the RBLC there is no consensus on the prevailing control method for VOC emissions from lost foam casting operations. Additionally, it is important to note that the one similar operation listed in the RBLC is similar due to type of operation only and in fact operates a LFC operation that is nearly an order of magnitude larger than the LFC operation at the GAMCO Huntington, IN facility. The GM Saginaw facility has a permitted allowable daily casting rate of 109 tons per day metal versus GAMCOs potential throughput of 12 tons per day metal.

Company	Permit #	Date Issued and State	Type of Operation	VOC Content Limits
Norandal USA, INC	950089P	11/25/1998 (TN)	Aluminum Casting Facility	Per confirmation from Tennessee Department of Environment and Conservation (TDEC) and facility personnel, Norandal USA facility (RBLC ID TN-0140) does not operate a lost foam casting line but rather operates an ingot casting line.
General Motors Powertrain, Saginaw Metal Casting	412-97B	08/25/2000 (MI)	Auto manufacturer uses clean aluminum to cast engine heads and blocks	Source uses a catalytic oxidizer to control VOCs from the lost foam casting operation. The GM Saginaw facility has a permitted allowable daily casting rate of 109 tons per day metal versus GAMCOs potential throughput of 12 tons per day metal. The lost foam casting operation is limited to 2.33 lbs/hr of VOC. Before pouring operations can commence the catalytic oxidizers shall be operated at a minimum temperature of 650^{o}F. The permit does not include oxidizer control efficiency, but test data demonstrated 1.21 pounds per hour and 96 percent efficiency.

Step 2 - Eliminate Technically Infeasible Control Options

Based on the results from the RBLC and technical feasibility analysis, IDEM, OAQ has determined that the only feasible control options for the lost foam casting process are: Catalytic Incinerators (Regenerative or Recuperative) and/or Thermal Incinerators (Regenerative or Recuperative). The cost effectiveness analysis was therefore limited to only those add-on control devices which were determined to be technically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The technically feasible approaches for controlling VOC emissions from facilities that have a VOC PTE comparable in magnitude to the surface coating operations at this source are:

Options for VOC Control	VOC Destruction Efficiency (%)
Catalytic Regenerative	94%
Catalytic Recuperative	94%
Thermal Regenerative	98%
Thermal Recuperative	98%

Step 4 - Evaluate the Most Effective Controls and Document Results

IDEM has evaluated an economic analysis of the technically feasible control options submitted by GAMCO. The analysis estimated the cost of the VOC control equipment, including the initial capital cost of the various components intrinsic to the complete system, and the estimated annual operating costs. The estimated total capital cost was calculated with the use of a factoring method of determining direct and indirect installation costs. The basic equipment costs were obtained from vendor's quoted prices. Annualized costs were developed based on information from vendors and a literature review. The analysis assumed an interest rate of 7% and an equipment life of 10 years.

The basis of cost effectiveness, used to evaluate the control options, is the ratio of the annualized cost to the amount of VOC (tons) removed per year. Note that the cost effectiveness of each option only accounts for the portion of VOC removed by the add-on controls. The Permittee stated that the electricity costs they expect to incur are higher than the values provided in the EPA Cost Analysis Manual ($0.041 per kWh). The labor costs reported by the source are $0.071 per kWh.

The Permittee also stated that the capture efficiency of lost foam casting ventilation system will probably be less than 100%. In order to achieve the estimated capture rate of 100% vast improvements would need to be made to the existing ventilation, including additional capture hooding for the cooling conveyor, which in turn would cause not only an increase in the cost of installation of the catalytic oxidizer but also a decrease in the inlet concentration to the oxidizer. Therefore, the add-on control devices will be less cost effective than shown in this analysis.

A complete breakdown of the costs associated with the catalytic and thermal incinerators are included in Appendix C. A summary of the cost figures determined in the analysis is provided in the table below:

Option	Equipment Cost ($)	Total Operating Cost ($/yr)	Total Annualized Costs ($/yr)	Potential VOC removal (ton/yr)	Cost Effectiveness ($/ton VOC removed)
Catalytic Regenerative	43,920	1,053,977	1,066,059	41.8	22,150
Catalytic Recuperative	107,929	1,546,031	1,575,720	41.8	32,740
Thermal Regenerative	75,842	1,004,360	1,025,222	50.2	20,433
Thermal Recuperative	107,929	1,512,089	1,541,778	50.2	30,727

*Note: Overall Reduction Efficiency = Control Efficiency x Capture Efficiency (100%)

Step 5 - Select BACT

IDEM, OAQ has determined that the add-on VOC control equipment is not required for the reverberatory furnaces based on the following reasons:

(a) Based on the results of searching the EPA's RACT/BACT/LAER Clearinghouse (RBLC) database and Indiana Air Permits, no BACT determinations were found for secondary aluminum casting lines. However, GAMCO provided examples of sources with similar operations.

(b) The GM facility in Saginaw, MI uses clean aluminum to cast engine heads and blocks, and VOC emissions from the lost foam casting are controlled with a catalytic oxidizer. The economy of scale at the GM facility is much different. The GM Saginaw facility has a permitted allowable daily casting rate of 109 tons per day metal versus GAMCO's potential throughput of 12 tons per day metal.

(c) The installation and operation of a regenerative catalytic incinerator, a recuperative catalytic incinerator, a regenerative thermal incinerator, and a recuperative thermal incinerator are considered economically infeasible ($20,433 per ton of VOC removed for the least expensive option, regenerative thermal incinerator). IDEM considers this cost to be excessive because IDEM has not identified any other similar source within this industry that has spent this much to control VOC emissions.

Based on the results of this BACT analysis, IDEM, OAQ has determined BACT requirements for the lost foam casting (furnaces #2 and #9) to be the following:

The total VOC input to lost foam casting (furnaces #2 and #9) shall be limited to less than 9.9 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Lost foam usage shall be limited to less than 19,795 pounds per twelve (12) consecutive month period, which is equivalent to 9.9 tons per year of VOC emissions.

Appendix C: Cost Analysis for Control Devices

Company Name: General Aluminum Manufacturing Company
Location: 1345 Henry Street, Huntington, Indiana 46750
FESOP: 069-19499-00048
Reviewer: ERG/BL
Date: July 18, 2007

				Catalytic Incineration (Regenerative)	Catalytic Incineration (Recuperative)	Thermal Incineration (Regenerative)	Thermal Incineration (Recuperative)
Vender:				Anguil Environmental Systems, Inc.			
Design Air Flow Rate (scfm):				5,857	5,880	5,870	5,907
I. Capital Cost							
	(formula)						
1. Purchased Equipment:							
Basic Equipment & Auxiliaries (A)				$43,920	$107,929	$75,842	$107,929
Instrument Cost	0.1	A		$4,392	$10,793	$7,584	$10,793
Taxes	0.05	A		$2,196	$5,396	$3,792	$5,396
Freight	0.05	A		$2,196	$5,396	$3,792	$5,396
Total Purchase Cost (B)				**$52,704**	**$129,515**	**$91,010**	**$129,515**
2. Direct Installation Costs:							
Foundations & Supports	0.08	B		$4,216	$10,361	$7,281	$10,361
Erection & Handling	0.14	B		$7,379	$18,132	$12,741	$18,132
Electrical	0.04	B		$2,108	$5,181	$3,640	$5,181
Piping	0.02	B		$1,054	$2,590	$1,820	$2,590
Insulation	0.01	B		$527	$1,295	$910	$1,295
Painting	0.01	B		$527	$1,295	$910	$1,295
Site Preparation (As Required)				$0	$0	$0	$0
Facilities and buildings (As required)				$0	$0	$0	$0
Total Direct Installation Cost (C)				**$15,811**	**$38,854**	**$27,303**	**$38,854**
Total Direct Capital Cost (TDC)			**(B+C)**	**$68,515**	**$168,369**	**$118,314**	**$168,369**
3. Indirect Costs:							
Engineering	0.1	B		$5,270	$12,951	$9,101	$12,951
Loss of Production Cost				$0	$0	$0	$0
Construction & Field Expenses	0.05	B		$2,635	$6,476	$4,551	$6,476
Contractor Fees	0.1	B		$5,270	$12,951	$9,101	$12,951
Start Up and Performance Tests	0.03	B		$1,581	$3,885	$2,730	$3,885
Contingencies	0.03	B		$1,581	$3,885	$2,730	$3,885
Total Indirect Cost (D)				**$16,338**	**$40,150**	**$28,213**	**$40,150**
Total Install Capital Cost			**(B+C+D)**	**$84,853**	**$208,519**	**$146,527**	**$208,519**
Capital Recovery Factor (7%, 10 year)				0.14238	0.14238	0.14238	0.14238
Capital Recovery Cost (E)				**$12,081**	**$29,689**	**$20,862**	**$29,689**

II. ANNUALIZED COSTS

		Catalytic Incineration (Regenerative)	Catalytic Incineration (Recuperative)	Thermal Incineration (Regenerative)	Thermal Incineration (Recuperative)
1. Direct Operating Costs:					
Operating Labor (F)		$9,855	$9,855	$9,855	$9,855
a. Number of Employees		*1*	*1*	*1*	*1*
*b. Cost/Employee/Hour****		*$18.0*	*$18.0*	*$18.0*	*$18.0*
*c. Operating Hours/Year*****		*547.5*	*547.5*	*547.5*	*547.5*
Supervisory Labor (F1)	0.15 F	$1,478	$1,478	$1,478	$1,478
Maintenance Labor (F2)		$12,593	$12,593	$12,593	$12,593
a. Number of Employees		*1*	*1*	*1*	*1*
*b. Cost/Employee/Hour****		*$23.0*	*$23.0*	*$23.0*	*$23.0*
*c. Operating Hours/Year*****		*547.5*	*547.5*	*547.5*	*547.5*
Maintenance Material (F3)	1 F2	$12,593	$12,593	$12,593	$12,593
Utilities					
a. Natural Gas		$2,412,625	$2,422,099	$2,417,980	$2,433,221
MMBTU/HR Input		*28.19*	*28.30*	*28.25*	*28.43*
Operating Hours/Year		*8,760*	*8,760*	*8,760*	*8,760*
*Cost/MMBTU**		*$9.77*	*$9.77*	*$9.77*	*$9.77*
b. Electricity		$14,917	$14,976	$14,950	$13,612
KW Requirements/Hr		*1*	*1*	*1*	*1*
KWH/YR		*210,103*	*210,929*	*210,570*	*191,716*
*Cost/KWH***		*$0.071*	*$0.071*	*$0.071*	*$0.071*
Water		$0	$0	$0	$0
Air		$0	$0	$0	$0
Replacement Parts		$8,568	$8,604	$0	$0
Total Direct Operating Cost (G)		**$2,472,628**	**$2,482,197**	**$2,469,448**	**$2,483,351**
2. Indirect Operating Costs:					
Overhead	0.6 (F+F1+F2+F3)	$21,911	$21,911	$21,911	$21,911
Property Tax, Insurance, and Administrative Costs	0.04 (B+C+D)	$3,394	$8,341	$5,861	$8,341
Total Indirect Operating Cost (H)		**$25,305**	**$30,252**	**$27,772**	**$30,252**
3. Heat Recovery Credits (I):		**$1,443,956**	**$966,417**	**$1,492,861**	**$1,001,514**
MMBTU/HR Input		*28.19*	*28.30*	*28.25*	*28.43*
Operating Hours/Year		*8,760*	*8,760*	*8,760*	*8,760*
Unit Heat Efficiency		*95%*	*95%*	*98%*	*98%*
Heat Exchange Efficiency		*90%*	*60%*	*90%*	*60%*
Percent Heat Recovery		*70%*	*70%*	*70%*	*70%*
Cost/MMBTU		*$9.77*	*$9.77*	*$9.77*	*$9.77*
Total Annual Operating Cost	**(G+H-I)**	**$1,053,977**	**$1,546,031**	**$1,004,360**	**$1,512,089**
Total Annual Cost	**(E+G+H-I)**	**$1,066,059**	**$1,575,720**	**$1,025,222**	**$1,541,778**
Uncontrolled PTE (tons/yr)	**51.2**				
Destruction Efficiency		**94%**	**94%**	**98%**	**98%**
Capture Efficiency		**100%**	**100%**	**100%**	**100%**
Overall Control Efficiency		**94.0%**	**94.0%**	**98.0%**	**98.0%**
Pollution Removed (tons/yr)		**48.1**	**48.1**	**50.2**	**50.2**
Cost Effectiveness		**$22,150**	**$32,740**	**$20,433**	**$30,727**

*This is the price per MMBtu of natural gas for industrial use was provided by the Permittee.

**This is the national average price for industrial use in 2007 (for Electricity) was provided by the Permittee.

***Labor costs are provided by the source, $18/hr per operator and $23/hr per maintenance employee, including benefits and expected overtime.

****Operating and maintenance labor is based on 0.5 hours of labor per shift, 3 shifts per day, and 7 days a week.