



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

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

TO: Interested Parties / Applicant

DATE: June 19, 2008

RE: General Aluminum Manufacturing Company - Richmond Plant / 177-20368-00050

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

## Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures  
FNPER.dot12/03/07



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**New Source Review and Minor Source Operating  
Permit  
OFFICE OF AIR QUALITY**

**General Aluminum Manufacturing Co. - Richmond Plant  
1561 Northwest 11th Street  
Richmond, Indiana 47374**

(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.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

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 MSOP under 326 IAC 2-6.1.

|   |                                |
|---|--------------------------------|
| Operation Permit No.: M177-20368-00050                                  |                                |
| Issued by/Original Signed By:   | Issuance Date: June 19, 2008   |
| Iryn Calilung, Section Chief<br>Permits Branch<br>Office of Air Quality | Expiration Date: June 19, 2013 |

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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 and A.2 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 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

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The Permittee owns and operates a stationary aluminum molding and casting facility that only processes clean scrap, internal scrap, and customer returns.

|                              |   |
|------------------------------|---|
| Source Address:              | 1561 Northwest 11th Street, Richmond, Indiana 47374   |
| Mailing Address:             | 1561 Northwest 11th Street, Richmond, Indiana 47374   |
| General Source Phone Number: | (765) 966-6161  |
| SIC Code:                    | 3365  |
| County Location:             | Wayne   |
| Source Location Status:      | Attainment for all criteria pollutants  |
| Source Status:               | Minor Source Operating Permit Program<br>Minor Source, under PSD and Emission Offset Rules<br>Minor Source, Section 112 of the Clean Air Act<br>Not 1 of 28 Source Categories |

### A.2 Emission Units and Pollution Control Equipment Summary

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

#### (a) Casting Operations consisting of the following emission units:

- (1) One (1) natural gas-fired jet melter, identified as jet melter #2, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #2, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.
- (2) One (1) natural gas-fired jet melter, identified as jet melter #3, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #3, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
- (3) One (1) natural gas-fired jet melter, identified as jet melter #5, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #5, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
- (4) One (1) natural gas-fired jet melter, identified as jet melter #6, installed in June 1993, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #6, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.
- (5) One (1) natural gas-fired reverberatory furnace, identified as reverberatory furnace #1, installed in January 2007, with propane as a back-up fuel, exhausting to roof vent reverberatory furnace #1, rated at 10 million British thermal units per hour, capacity: 5,500 pounds of aluminum ingots per hour.

- (b) Die Re-Conditioning Processes consisting of the following emission units:
  - (1) One (1) electric die furnace, identified as electric die furnace, installed in 1992, exhausting to Stack electric die furnace, capacity: 4 dies per hour.
  - (2) One (1) die coating booth, identified as die coating booth, utilizing non-VOC coatings, equipped with HVLP or equivalent spray applicators and dry filters, exhausting inside the building, installed in 1992, capacity: 4 dies per hour.
  - (3) One (1) abrasive blast booth, identified as abrasive blast booth, equipped with an integral baghouse to recirculate blast media, identified as abrasive blast booth baghouse, which is considered integral to the blasting operation, exhausted back into the booth, installed in 1992, capacity: 4 dies per hour.
  - (4) One (1) dry ice cleaning booth, identified as dry ice cleaning booth, approved for construction in 2008, exhausting to the indoors, capacity: cleaning 0.07 gallons of coatings per hour.
- (c) One (1) cold cleaner, identified as cold cleaner, using an organic solvent, with a maximum capacity of 30 gallons.
- (d) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour, including:
  - (1) One (1) natural gas-fired space heater, with propane as a back-up fuel, installed in 1992, approved for modification in 2008, rated at 0.016 million British thermal units per hour.
  - (2) Five (5) natural gas-fired air makeup units, identified as F15 through F19, installed in 1992, rated at 3.00 million British thermal units per hour each.
  - (3) Two (2) natural gas-fired dock heaters, identified as N and S dock heaters, installed in 1992, rated at 0.010 million British thermal units per hour each.
  - (4) One (1) natural gas-fired aging furnace, identified as aging furnace, installed in 1992, rated at 1.60 million British thermal units per hour.
  - (5) One (1) natural gas-fired sow mold preheater, identified as sow mold preheater, installed in 1992, rated at 0.300 million British thermal units per hour.
- (e) One (1) wastewater storage tank, identified as wastewater storage tank, installed in 1992, capacity: 5,000 gallons of wastewater.
- (f) Machining where an aqueous cutting coolant continuously floods the machining interface.
- (g) Brazing, soldering, or welding operations and associated equipment
- (h) Equipment used for surface coating, painting, dipping or spraying operation, except those that will emit VOCs and HAPs.
- (i) Paved and unpaved roads and parking lots with public access.
- (j) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (k) Closed loop heating and cooling systems.
- (l) Non-contact cooling tower systems with either of the following:

- (1) Natural draft cooling towers not regulated under a NESHAP
- (2) Forced and induced draft cooling tower systems not regulated under a NESHAP.
- (m) Combustion emissions from propulsion of mobile sources.
- (n) Pressurized storage tanks and associated piping for the following:
  - (1) Liquid natural gas
  - (2) Nitrogen dioxide
- (o) Air compressors and pneumatically operated equipment, including hand tools.
- (p) Compressor or pump lubrication and seal oil systems.
- (q) Salt baths using nonvolatile salts including caustic solutions that do not result in emissions of any regulated pollutants.

## **SECTION B GENERAL CONDITIONS**

### **B.1 Definitions [326 IAC 2-1.1-1]**

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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 2-1.1-1) shall prevail.

### **B.2 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]**

- 
- (a) This permit, M177-20368-00050, 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]**

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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**

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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**

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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**

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

### **B.7 Duty to Provide Information**

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- (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

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- (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 Notification [326 IAC 2-6.1-5(a)(5)]

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- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) The annual notice shall be submitted in the format attached no later than March 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, IN 46204-2251
- (c) The notification 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.

## B.10 Preventive Maintenance Plan [326 IAC 1-6-3]

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- (a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (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.11 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of permits established prior to M177-20368-00050 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.12 Termination of Right to Operate [326 IAC 2-6.1-7(a)]**

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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 ninety (90) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

**B.13 Permit Renewal [326 IAC 2-6.1-7]**

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- (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 2-6.1-7. Such information shall be included in the application for each emission unit at this source. 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  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
  - (1) Submitted at least ninety (90) days 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 2-6.1 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.14 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]**

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- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 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 shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

**B.15 Source Modification Requirement**

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

**B.16 Inspection and Entry  
[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]**

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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 permitted 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.17 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]**

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- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 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 notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

**B.18 Annual Fee Payment [326 IAC 2-1.1-7]**

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- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.
- (b) 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.19 Credible Evidence [326 IAC 1-1-6]**

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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 2-6.1-5(a)(1)]

#### C.1 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

#### C.2 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

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

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

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

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

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

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

C.6 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 Licensed Asbestos Inspector  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

### **Testing Requirements [326 IAC 2-6.1-5(a)(2)]**

#### **C.7 Performance Testing [326 IAC 3-6]**

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- (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.8 Compliance Requirements [326 IAC 2-1.1-11]**

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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 2-6.1-5(a)(2)]**

#### **C.9 Compliance Monitoring [326 IAC 2-1.1-11]**

---

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

#### **C.10 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.11 Instrument Specifications [326 IAC 2-1.1-11]**

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- (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**

**C.12 Response to Excursions or Exceedances**

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- (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.13 Actions Related to Noncompliance Demonstrated by a Stack Test**

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- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]**

**C.14 Malfunctions Report [326 IAC 1-6-2]**

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Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

**C.15 General Record Keeping Requirements [326 IAC 2-6.1-5]**

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- (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.16 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) 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

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

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) Casting Operations consisting of the following emission units:
- (1) One (1) natural gas-fired jet melter, identified as jet melter #2, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #2, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.
  - (2) One (1) natural gas-fired jet melter, identified as jet melter #3, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #3, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
  - (3) One (1) natural gas-fired jet melter, identified as jet melter #5, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #5, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
  - (4) One (1) natural gas-fired jet melter, identified as jet melter #6, installed in June 1993, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #6, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.
  - (5) One (1) natural gas-fired reverberatory furnace, identified as reverberatory furnace #1, installed in January 2007, with propane as a back-up fuel, exhausting to roof vent reverberatory furnace #1, rated at 10 million British thermal units per hour, capacity: 5,500 pounds of aluminum ingots per hour.
- (b) Die Re-Conditioning Processes consisting of the following emission units:
- (1) One (1) electric die furnace, identified as electric die furnace, installed in 1992, exhausting to Stack electric die furnace, capacity: 4 dies per hour.
  - (2) One (1) die coating booth, identified as die coating booth, utilizing non-VOC coatings, equipped with HVLP or equivalent spray applicators and dry filters, exhausting inside the building, installed in 1992, capacity: 4 dies per hour.
  - (3) One (1) abrasive blast booth, identified as abrasive blast booth, equipped with an integral baghouse to recirculate blast media, identified as abrasive blast booth baghouse, which is considered integral to the blasting operation, exhausted back into the booth, installed in 1992, capacity: 4 dies per hour.
  - (4) One (1) dry ice cleaning booth, identified as dry ice cleaning booth, approved for construction in 2008, exhausting to the indoors, capacity: cleaning 0.07 gallons of coatings per hour.

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

### **Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]**

#### **D.1.1 Clean Charge [326 IAC 2-2] [326 IAC 20-70] [40 CFR 63.1500, Subpart RRR]**

---

The casting operations, consisting of jet melters #2, #3, #5, #6, and reverberatory furnace #1, shall only melt clean charge, internal scrap, or customer returns, as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Aluminum Production, 40 CFR 63.1503, Subpart RRR.

Compliance with this shall render the requirements of 326 IAC 2-2-1(gg)(1) (Major Stationary Source) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Aluminum Production, 326 IAC 20-70 (40 CFR 63.1500, Subpart RRR) not applicable.

#### **D.1.2 Particulate [326 IAC 6.5-1-2]**

---

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate emissions from the jet melters (#2, #3, #5, and #6), reverberatory furnace, die coating booth, abrasive blast booth, and dry ice cleaning booth shall not exceed 0.03 grains per dry standard cubic foot (dscf), each.

### **Compliance Determination Requirements**

#### **D.1.3 Particulate**

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In order to comply with Condition D.1.2, the baghouse for particulate control shall be in operation at all times, when the abrasive blast booth is in operation.

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description: Insignificant activities

- (c) One (1) cold cleaner, identified as cold cleaner, using an organic solvent, with a maximum capacity of 30 gallons.
- (d) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour, including:
  - (1) One (1) natural gas-fired space heater, with propane as a back-up fuel, installed in 1992, approved for modification in 2008, rated at 0.016 million British thermal units per hour.
  - (2) Five (5) natural gas-fired air makeup units, identified as F15 through F19, installed in 1992, rated at 3.00 million British thermal units per hour each.
  - (3) Two (2) natural gas-fired dock heaters, identified as N and S dock heaters, installed in 1992, rated at 0.010 million British thermal units per hour each.
  - (4) One (1) natural gas-fired aging furnace, identified as aging furnace, installed in 1992, rated at 1.60 million British thermal units per hour.
  - (5) One (1) natural gas-fired sow mold preheater, identified as sow mold preheater, installed in 1992, rated at 0.300 million British thermal units per hour.

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

### Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

#### D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### D.2.2 Particulate [326 IAC 6.5-1-2]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate emissions from the insignificant natural gas-fired units shall not exceed 0.03 grains per dry standard cubic foot (dscf), each.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY**

**MINOR SOURCE OPERATING PERMIT (MSOP)  
CERTIFICATION**

Source Name: General Aluminum Manufacturing Co. - Richmond Plant  
Source Address: 1561 Northwest 11th Street, Indiana 47374  
Mailing Address: 1561 Northwest 11th Street, Indiana 47374  
MSOP No.: M177-20368-00050

**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 Notification
- 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**

**MINOR SOURCE OPERATING PERMIT  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

|                      |   |
|----------------------|---|
| <b>Company Name:</b> | General Aluminum Manufacturing Co. - Richmond Plant |
| <b>Address:</b>      | 1561 Northwest 11th Street                          |
| <b>City:</b>         | Richmond, Indiana 47374                             |
| <b>Phone #:</b>      | (765) 966-6161                                      |
| <b>MSOP #:</b>       | M177-20368-00050                                    |

I hereby certify that General Aluminum Manufacturing Co.  still in operation.  
Richmond Plant is:

no longer in operation.

I hereby certify that General Aluminum Manufacturing Co.  in compliance with the requirements of  
Richmond Plant is : MSOP M177-20368-00050.

not in compliance with the requirements of  
MSOP M177-20368-00050.

|                                       |
|---------------------------------------|
| <b>Authorized Individual (typed):</b> |
| <b>Title:</b>                         |
| <b>Signature:</b>                     |
| <b>Date:</b>                          |

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

|                       |
|-----------------------|
| <b>Noncompliance:</b> |
|                       |
|                       |
|                       |
|                       |

**MALFUNCTION REPORT**  
**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR QUALITY**  
**FAX NUMBER - 317 233-6865**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6  
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?\_\_\_\_, 25 TONS/YEAR SULFUR DIOXIDE ?\_\_\_\_, 25 TONS/YEAR NITROGEN OXIDES?\_\_\_\_, 25 TONS/YEAR VOC ?\_\_\_\_, 25 TONS/YEAR HYDROGEN SULFIDE ?\_\_\_\_, 25 TONS/YEAR TOTAL REDUCED SULFUR ?\_\_\_\_, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?\_\_\_\_, 25 TONS/YEAR FLUORIDES ?\_\_\_\_, 100 TONS/YEAR CARBON MONOXIDE ?\_\_\_\_, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?\_\_\_\_, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?\_\_\_\_, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?\_\_\_\_, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?\_\_\_\_. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION \_\_\_\_\_.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC \_\_\_\_\_ OR, PERMIT CONDITION # \_\_\_\_\_ AND/OR PERMIT LIMIT OF \_\_\_\_\_

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ?    Y        N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ?    Y        N

COMPANY: \_\_\_\_\_ PHONE NO. (    ) \_\_\_\_\_  
LOCATION: (CITY AND COUNTY) \_\_\_\_\_  
PERMIT NO. \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_  
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/20\_\_\_\_    \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/20\_\_\_\_    \_\_\_\_\_ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: \_\_\_\_\_

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

\*SEE PAGE 2

**Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1 Applicability of rule**

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

**326 IAC 1-2-39 "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

**\*Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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**Indiana Department of Environmental Management  
Office of Air Quality**

Addendum to the Technical Support Document (ATSD) for a  
New Source Review and Minor Source Operating Permit (MSOP)

**Source Background and Description**

|                              |   |
|------------------------------|---|
| <b>Source Name:</b>          | <b>General Aluminum Manufacturing Co. - Richmond Plant</b>            |
| <b>Source Location:</b>      | <b>1561 Northwest 11<sup>th</sup> Street, Richmond, Indiana 47374</b> |
| <b>County:</b>               | <b>Wayne</b>  |
| <b>SIC Code:</b>             | <b>3365</b>   |
| <b>Operation Permit No.:</b> | <b>177-20368-00050</b>  |
| <b>Permit Reviewer:</b>      | <b>Brian Williams</b>   |

On April 17, 2008, the Office of Air Quality (OAQ) had a notice published in the Palladium Item, Richmond Indiana, stating that General Aluminum Manufacturing Co. - Richmond Plant had applied for a new source review and MSOP to Plant to construct and operate an aluminum molding and casting facility that only processes clean scrap, internal scrap, and customer returns. The notice also stated that the OAQ proposed to issue a new source review and MSOP for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

**Comments and Responses**

No comments were received during the public notice period.

**Additional Changes**

IDEM, OAQ has decided to make an additional revision to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

- (a) Upon further review, Condition B.10 (Preventive Maintenance Plan) has been revised as follows:

...

B.10 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) ~~If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:~~ **for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:**

...

**IDEM Contact**

- (a) Questions regarding this proposed new source review and MSOP can be directed to Brian Williams at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) (234-5375) or toll free at 1-800-451-6027 extension (4-5375).
- (b) A copy of the permit is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>

- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

## Indiana Department of Environmental Management Office of Air Quality

### Technical Support Document (TSD) for a New Source Review and Minor Source Operating Permit (MSOP)

#### Source Description and Location

|                              |   |
|------------------------------|---|
| <b>Source Name:</b>          | <b>General Aluminum Manufacturing Co. - Richmond Plant</b>            |
| <b>Source Location:</b>      | <b>1561 Northwest 11<sup>th</sup> Street, Richmond, Indiana 47374</b> |
| <b>County:</b>               | <b>Wayne</b>  |
| <b>SIC Code:</b>             | <b>3365</b>   |
| <b>Operation Permit No.:</b> | <b>177-20368-00050</b>  |
| <b>Permit Reviewer:</b>      | <b>Brian Williams</b>   |

On November 12, 2004, the Office of Air Quality (OAQ) has received an application from General Aluminum Manufacturing Co. - Richmond Plant related to the construction of new emission units and the continued operation of an existing aluminum molding and casting facility.

#### Existing Approvals

The source has been operating under CP No. 177-7118-00050, issued on October 14, 1997.

#### County Attainment Status

The source is located in Wayne County.

| Pollutant   | Designation   |
|---|---|
| SO <sub>2</sub>   | Better than national standards.   |
| CO  | Unclassifiable or attainment effective November 15, 1990.   |
| O <sub>3</sub>  | Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. <sup>1</sup> |
| PM <sub>10</sub>  | Unclassifiable effective November 15, 1990.   |
| NO <sub>2</sub>   | Cannot be classified or better than national standards.   |
| Pb  | Not designated.   |
| <sup>1</sup> Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.<br>Unclassifiable or attainment effective April 5, 2005, for PM <sub>2.5</sub> . |   |

(a) Ozone Standards

- (1) 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.
- (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, St. Joseph as attainment for the 8-hour ozone standard.
- (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (4) Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) 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. Wayne County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM2.5**  
Wayne County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.
- (c) **Other Criteria Pollutants**  
Wayne County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

#### **Fugitive Emissions**

- (a) The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability.
- (b) Based on an U.S. EPA memo on December 4, 1998, aluminum die casting facilities typically need not be considered as a secondary metal production plant because they do not use the feedstock, do not engage in the elaborate processes, and do not produce the end products that are characteristic of facilities engaged in secondary aluminum recovery. As a result, this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

#### **Background and Description of Permitted Emission Units and New Source Construction**

The Office of Air Quality (OAQ) has reviewed applications from General Aluminum Manufacturing Co. - Richmond Plant (formerly known as Amcast Automotive - Richmond) requesting to construct a dry ice cleaning booth and reverberatory furnace, to add propane as a backup fuel in the existing jet melters and reverberatory furnace, and the operation of an aluminum die casting source that processes only clean charge, internal scrap, and customer returns, as defined in 40 CFR 63.1503.

An application for a Minor Source Operating Permit (MSOP) "renewal" was received on November 12, 2004. However, this source did not have an MSOP. The former Amcast Automotive - Richmond source had a construction permit (CP) 177-7118-00050 that was issued on October 14, 1997. A second application to add a dry ice cleaning booth, identified as dry ice cleaning booth, was submitted on July 19, 2005 and has been combined with this MSOP. On March 19, 2007, General Aluminum Manufacturing Co. - Richmond Plant requested to add the capability to burn propane in the five (5) jet melters. A third application to add a reverberatory furnace and remove an existing jet melter was submitted on August 1, 2007 and has been combined with this MSOP.

The source consists of the following permitted emission unit(s):

- (a) Casting Operations consisting of the following emission units:
  - (1) One (1) natural gas-fired jet melter, identified as jet melter #2, installed in June 1992, exhausting to roof vent jet melter #2, rated at 6.27 million British thermal units per hour,

capacity: 4,500 pounds of aluminum ingots per hour.

- (2) One (1) natural gas-fired jet melter, identified as jet melter #3, installed in June 1992, exhausting to roof vent jet melter #3, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
- (3) One (1) natural gas-fired jet melter, identified as jet melter #5, installed in June 1992, exhausting to roof vent jet melter #5, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.
- (4) One (1) natural gas-fired jet melter, identified as jet melter #6, installed in June 1993, exhausting to roof vent jet melter #6, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.

Note: These jet melters are being modified. Refer to the next section for more details.

(b) Die Re-Conditioning Processes consisting of the following emission units:

- (1) One (1) electric die furnace, identified as electric die furnace, installed in 1992, exhausting to Stack electric die furnace, capacity: 4 dies per hour.
- (2) One (1) die coating booth, identified as die coating booth, utilizing non-VOC coatings, equipped with HVLP or equivalent spray applicators and dry filters, exhausting inside the building, installed in 1992, capacity: 4 dies per hour.
- (3) One (1) abrasive blast booth, identified as abrasive blast booth, equipped with a baghouse to recirculate blast media, identified as abrasive blast booth baghouse, which is considered integral to the blasting operation, exhausted back into the booth, installed in 1992, capacity: 4 dies per hour.

(c) One (1) cold cleaner, identified as cold cleaner, using an organic solvent, with a maximum capacity of 30 gallons.

(d) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour, including:

- (1) One (1) natural gas-fired space heater, installed in 1992, rated at 0.016 million British thermal units per hour.
- (2) One (1) natural gas-fired aging furnace, identified as aging furnace, installed in 1992, rated at 1.60 million British thermal units per hour.
- (3) One (1) waste water storage tank, identified as wastewater storage tank, installed in 1992, capacity: 5,000 gallons of wastewater.
- (4) Five (5) natural gas-fired air makeup units, identified as F15 through F19, installed in 1992, rated at 3.00 million British thermal units per hour each.
- (5) Two (2) natural gas-fired dock heaters, identified as N and S dock heaters, installed in 1992, rated at 0.010 million British thermal units per hour each.
- (6) One (1) natural gas-fired sow mold preheater, identified as sow mold preheater, installed in 1992, rated at 0.300 million British thermal units per hour.

(e) One (1) wastewater storage tank, identified as wastewater storage tank, installed in 1992, capacity: 5,000 gallons of wastewater.

- (f) Machining where an aqueous cutting coolant continuously floods the machining interface.
- (g) Brazing, soldering, or welding operations and associated equipment
- (h) Equipment used for surface coating, painting, dipping or spraying operation, except those that will emit VOCs and HAPs.
- (i) Paved and unpaved roads and parking lots with public access.
- (j) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (k) Closed loop heating and cooling systems.
- (l) Non-contact cooling tower systems with either of the following:
  - (1) Natural draft cooling towers not regulated under a NESHAP
  - (2) Forced and induced draft cooling tower systems not regulated under a NESHAP.
- (m) Combustion emissions from propulsion of mobile sources.
- (n) Pressurized storage tanks and associated piping for the following:
  - (1) Liquid natural gas
  - (2) Nitrogen dioxide
- (o) Air compressors and pneumatically operated equipment, including hand tools.
- (p) Compressor or pump lubrication and seal oil systems.
- (q) Salt baths using nonvolatile salts including caustic solutions that do not result in emissions of any regulated pollutants.

The following is a list of the new and modified emission unit(s) and pollution control device(s):

- (a) Casting Operations consisting of the following emission units:
  - (1) One (1) natural gas-fired jet melter, identified as jet melter #2, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #2, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.
  - (2) One (1) natural gas-fired jet melter, identified as jet melter #3, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #3, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
  - (3) One (1) natural gas-fired jet melter, identified as jet melter #5, installed in June 1992, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof vent jet melter #5, rated at 6.27 million British thermal units per hour, capacity: 4,500 pounds of aluminum ingots per hour.
  - (4) One (1) natural gas-fired jet melter, identified as jet melter #6, installed in June 1993, approved for modification in 2008, with propane as a back-up fuel, exhausting to roof

vent jet melter #6, rated at 4.80 million British thermal units per hour, capacity: 4,000 pounds of aluminum ingots per hour.

- (b) Die Re-Conditioning Processes consisting of the following emission units:
  - (4) One (1) dry ice cleaning booth, identified as dry ice cleaning booth, approved for construction in 2008, exhausting to the indoors, capacity: cleaning 0.07 gallons of coatings per hour.
- (d) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour, including:
  - (1) One (1) natural gas-fired space heater, with propane as a back-up fuel, installed in 1992, approved for modification in 2008, rated at 0.016 million British thermal units per hour.

#### **Unpermitted Emission Units and Pollution Control Equipment**

The source consists of the following unpermitted emission unit:

- (a) Casting Operations consisting of the following emission units:
  - One (1) natural gas-fired reverberatory furnace, identified as reverberatory furnace #1, installed in January 2007, with propane as a back-up fuel, exhausting to roof vent reverberatory furnace #1, rated at 10 million British thermal units per hour, capacity: 5,500 pounds of aluminum ingots per hour.

#### **“Integral Part of the Process” Determination**

IDEM, OAQ determined in CP 177-7118-00050, issued on October 14, 1997, that the baghouse to recirculate the blast media associated with the abrasive blast booth, identified as abrasive blast booth, installed in 1992, was integral to the process.

The baghouse is used to recycle the shot blasting media, which costs \$8 per 50 pounds to replace. At a shot usage rate of 62,400 pounds per year, the savings in shot replacement is \$9,984 per year. This exceeds the cost of operating the baghouse and substantiates the determination made by IDEM, OAQ in 1997 that the baghouse serves a primary purpose other than air pollution control. Therefore, this baghouse is integral to the process. IDEM, OAQ has evaluated the information submitted and agrees that the baghouse should be considered an integral part of the abrasive blast booth process. Therefore, the permitting level will be determined using the potential to emit after the baghouse. Operating conditions in the proposed permit will specify that this baghouse shall operate at all times when the abrasive blast booth is in operation.

#### **Enforcement Issues**

IDEM is aware that the reverberatory furnace has been constructed prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules.

General Aluminum Manufacturing Co. - Richmond Plant (formerly owned by Amcast Automotive) was issued a CP No. 177-7118-00050 on October 14, 1997, for an aluminum molding and casting facility. Pursuant to 326 IAC 2-6.1-3, the source was required to apply for a MSOP no later than ninety (90) days prior to the expiration date of that permit (2002). On August 26, 2004, IDEM, OAQ, received a self-disclosure letter from Amcast Automotive, noting their failure to submit the required permit application. On November 12, 2004, IDEM, OAQ received an application from the new owner, General Aluminum Manufacturing Company. This proposed approval is intended to satisfy the requirements of the operating

permit rules.

**Emission Calculations**

See Appendix A of this TSD for detailed emission calculations.

**Permit Level Determination – MSOP**

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| Pollutant           | Potential To Emit (tons/year) |
|---------------------|-------------------------------|
| PM                  | 78.95                         |
| PM10 <sup>(1)</sup> | 77.86                         |
| SO <sub>2</sub>     | 0.19                          |
| NO <sub>x</sub>     | 29.24                         |
| VOC                 | 1.42                          |
| CO                  | 17.76                         |

(1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

| HAPs                | Potential to Emit (tons/yr) |
|---------------------|-----------------------------|
| Benzene             | 4.30E-04                    |
| Dichlorobenzene     | 2.46E-04                    |
| Formaldehyde        | 1.54E-02                    |
| Hexane              | 3.68E-01                    |
| Toluene             | 6.96E-04                    |
| Lead Compounds      | 1.02E-04                    |
| Cadmium Compounds   | 2.25E-04                    |
| Chromium Compounds  | 2.87E-04                    |
| Manganese Compounds | 7.78E-05                    |
| Nickel Compounds    | 4.30E-04                    |
| Hydrochloric Acid   | 0.046                       |
| Hydrofluoric Acid   | 0.085                       |
| <b>Total HAPs</b>   | <b>0.52</b>                 |

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of PM10 and NOx are each less than one hundred (100) tons per year, but greater than or equal to twenty-five (25) tons per year. The PTE of all other regulated criteria pollutants are less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1. A Minor Source Operating Permit (MSOP) will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

|   |
|---|
| <b>Federal Rule Applicability Determination</b> |
|---|

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard (NSPS), 40 CFR 60.110, Subpart Kb (Volatile Organic Liquid Storage Vessels) are not included in the permit, because this source does not have storage tanks with a capacity greater than or equal to 75 cubic meters (19,813 gallons).
- (b) The requirements of the New Source Performance Standard (NSPS), 40 CFR 60.190, Subpart S (Primary Aluminum Production Plants) are not included in the permit, because this source is not a primary aluminum production plant.
- (c) The requirements of the New Source Performance Standard (NSPS), 40 CFR.260, Subpart Z (Ferroalloy Production Facilities) are not included in the permit, because this source does not operate an electric submerged arc furnace.
- (d) There are no New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (e) The requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAPs), 326 IAC 20-24 (40 CFR 63.840, Subpart LL for Primary Aluminum Production Plants, are not included in this permit because this source is not a primary aluminum production plant.
- (f) Pursuant to National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Aluminum Production, 40 CFR 63.1503, Subpart RRR, the definition of a secondary aluminum production states that for purposes of this subpart, 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/decoating kilns. This source shall only melt clean charge, customer returns, or internal scrap as defined by 40 CFR 63.1503, Subpart RRR and does not operate a sweat furnace, thermal chip dryer or scrap dryer/delacquering kiln/decoating kiln. Therefore, the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), 326 IAC 20-70 (40 CFR 63.1500, Subpart RRR) are not included in this permit.
- (g) The requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAPs), 326 IAC 20-6 (40 CFR 63.460, Subpart T (Halogenated Solvent Cleaning)), are not included in this permit for the degreasing operations because this source does not use halogenated solvents.
- (h) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (i) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

### State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 2-6.1 (Minor Source Operating Permits (MSOP))  
MSOP applicability is discussed under the Permit Level Determination – MSOP section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))  
This source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit of all attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))  
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (d) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (e) 326 IAC 5-1 (Opacity Limitations)  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
  - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (f) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)  
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

### Casting Operations

- (g) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)  
The jet melters and reverberatory furnace, are not subject to 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating), because, pursuant to 326 IAC 1-2-19, these emission units do not meet the definition of an indirect heating unit.
- (h) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)  
This aluminum molding and casting facility is located in Wayne County. This source is not specifically listed in 326 IAC 6.5-10 and does not have the unlimited potential to emit greater than one hundred (100) tons of particulate matter per year. However, this source has actual particulate

matter emissions greater than ten (10) tons per year. Pursuant to 326 IAC 6.5-1-2(a), PM emissions from the casting operations (Jet Melters #2, #3, #5, #6, and the Reverberatory Furnace) shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) each.

- (i) 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)  
The source is not subject to 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations) because the potential to emit sulfur dioxide from the jet melters and reverberatory furnace is less than twenty-five (25) tons per year and ten (10) pounds per hour each.
- (j) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)  
The reverberatory furnace and each jet melter are not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each unit is less than twenty-five (25) tons per year.
- (k) 326 IAC 9-1-1 (Carbon Monoxide Emission Limits)  
The jet melters and reverberatory furnace are not subject to 326 IAC 9-1-1 (Carbon Monoxide Emission Limits) because there is no applicable emission limits for the source under 326 IAC 9-1-2.
- (l) 326 IAC 10-1-1 (Nitrogen Oxides Control)  
The jet melters and reverberatory furnace, are not subject to 326 IAC 10-1-1 (Nitrogen Oxides Control) because the source is not located in Clark or Floyd counties.
- (m) 326 IAC 12 (New Source Performance Standards)  
See Federal Rule Applicability Section of this TSD.
- (n) 326 IAC 20 (Hazardous Air Pollutants)  
See Federal Rule Applicability Section of this TSD.

#### Die Re-Conditioning

- (o) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
The requirements of 326 IAC 6-3-2 are not applicable to the die re-conditioning process because they are subject to a more stringent particulate matter limit under 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).
- (p) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)  
This aluminum molding and casting facility is located in Wayne County. This source is not specifically listed in 326 IAC 6.5-10 and does not have the unlimited potential to emit greater than one hundred (100) tons of particulate matter per year. However, this source has actual particulate matter emissions greater than ten (10) tons per year. Pursuant to 6.5-1-2(a), PM emissions from the abrasive blast booth, dry ice cleaning booth, and die coating booth shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) each.  
  
Since the baghouse is considered an integral part of the abrasive blast booth and is necessary to comply with the requirements of 326 IAC 6.5-1-2, particulate from the abrasive blast booth shall be controlled by the baghouse at all times that the abrasive blast booth is in operation.
- (q) 326 IAC 8-2-9 (Volatile Organic Compounds, Miscellaneous Metal Coating Operations)  
Pursuant to 326 IAC 8-2-1(a)(2) and 326 IAC 8-2-1(a)(4) (Applicability) and 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), this rule applies to facilities constructed after November 1, 1980 located in any county, and with potential VOC emissions of greater than twenty-five (25) tons per year or facilities constructed after July 1, 1990 located in any county, and with actual VOC emissions of greater than fifteen (15) pounds per day before add-on controls.

The die coating booth is not subject to the requirements of 326 IAC 8-2-9 because the booth utilizes non-VOC coatings.

#### Insignificant Activities

- (r) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)  
The natural gas-fired combustion units, are not subject to 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating), because, pursuant to 326 IAC 1-2-19, these emission units do not meet the definition of an indirect heating unit.
- (s) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
The natural gas-fired combustion units are exempt from the requirements of 326 IAC 6-3, because, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight.
- (t) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)  
This aluminum molding and casting facility is located in Wayne County. This source is not specifically listed in 326 IAC 6.5-10 and does not have the unlimited potential to emit greater than one hundred (100) tons of particulate matter per year. However, this source has actual particulate matter emissions greater than ten (10) tons per year. Pursuant to 6.5-1-2(a), PM emissions from the insignificant natural gas and propane-fired emission units shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) each.
- (u) 326 IAC 8-3-2 (Cold Cleaner Operations)  
The cold cleaner is subject to the requirements of 326 IAC 8-3-2 (Cold cleaner operation) since it was constructed after January 1, 1980. Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations) for cold cleaning operations the owner or operator shall:
  - (1) Equip the cleaner with a cover;
  - (2) Equip the cleaner with a facility for draining cleaned parts;
  - (3) Close the degreaser cover whenever parts are not being handled in the cleaner;
  - (4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
  - (5) Provide a permanent, conspicuous label summarizing the operation requirements;
  - (6) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.
- (v) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)  
The wastewater storage tank has a storage capacity less than thirty-nine thousand (39,000) gallons and does not store volatile organic compounds; therefore, it is not subject to the requirements of 326 IAC 8-4-3.
- (w) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)  
The wastewater storage tank is located in Wayne county, has a storage capacity less than thirty-nine thousand (39,000) gallons and does not store volatile organic compounds; therefore, it is not subject to the requirements of 326 IAC 8-9.
- (x) 326 IAC 12 (New Source Performance Standards)  
See Federal Rule Applicability Section of this TSD.

- (y) 326 IAC 20 (Hazardous Air Pollutants)  
See Federal Rule Applicability Section of this TSD.

|   |
|---|
| <b>Compliance Monitoring and Testing Requirements</b> |
|---|

- (a) There are no compliance monitoring requirements applicable to this source.
- (b) There are no testing requirements applicable to this source.

|                                      |
|--------------------------------------|
| <b>Conclusion and Recommendation</b> |
|--------------------------------------|

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on November 12, 2004.

The operation of this source shall be subject to the conditions of the attached proposed New Source Review and MSOP No. 177-20368-00050. The staff recommends to the Commissioner that this New Source Review and MSOP be approved.

|                     |
|---------------------|
| <b>IDEM Contact</b> |
|---------------------|

- (a) Questions regarding this proposed permit can be directed to Brian Williams at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) (234-5375) or toll free at 1-800-451-6027 extension (4-5375).
- (b) A copy of the findings is available on the Internet at: [www.in.gov/idem/permits/air/pending.html](http://www.in.gov/idem/permits/air/pending.html).
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.in.gov/idem/permits/guide/](http://www.in.gov/idem/permits/guide/).

**Appendix A: Emissions Calculations  
Summary of Emissions**

**Company Name:** General Aluminum Manufacturing Co. - Richmond Plant  
**Address City IN Zip:** 1561 Northwest 11th Street, Richmond, Indiana 47374  
**Permit Number:** 177-20368-00050  
**Reviewer:** Brian Williams

| Unlimited Potential to Emit (PTE)                     |              |              |             |              |             |              |             |             |        |
|---|--------------|--------------|-------------|--------------|-------------|--------------|-------------|-------------|--------|
| Emission  | PM           | PM-10        | SO2         | NOx          | VOC         | CO           | Total HAPs  | Single HAP  |        |
| Units   | (tons/yr)    | (tons/yr)    | (tons/yr)   | (tons/yr)    | (tons/yr)   | (tons/yr)    | (tons/yr)   | (tons/yr)   |        |
| Reverberatory Furnace #1                              | 13.25        | 13.25        | 0.05        | 6.90         | 0.32        | 3.68         | -           | -           |        |
| Jet Melter #2   | 9.64         | 9.64         | 0.02        | 3.31         | 0.15        | 1.77         | -           | -           |        |
| Jet Melter #3   | 10.84        | 10.84        | 0.03        | 4.33         | 0.20        | 2.31         | -           | -           |        |
| Jet Melter #5   | 10.84        | 10.84        | 0.03        | 4.33         | 0.20        | 2.31         | -           | -           |        |
| Jet Melter #6   | 9.64         | 9.64         | 0.02        | 3.31         | 0.15        | 1.77         | -           | -           |        |
| Fluxing Operations*                                   | 3.20         | 1.70         | 0.00        | 0.00         | 0.00        | 0.00         | 0.13        | 0.085       | HF     |
| Nat. Gas Combustion (Heaters, Furnace, Air Make Up)** | 0.134        | 0.536        | 0.042       | 7.058        | 0.388       | 5.929        | 0.386       | 0.37        | Hexane |
| Space Heater (Propane)                                | 4.65E-04     | 5.33E-04     | 4.20E-05    | 1.08E-02     | 3.87E-04    | 5.89E-03     | 1.32E-04    | 1.26E-04    | Hexane |
| Abrasive Blast Booth                                  | 4.51         | 4.51         | 0.00        | 0.00         | 0.00        | 0.00         | 0.00        | 0.00        |        |
| Dry Ice Cleaning Booth                                | 15.2         | 15.2         | 0.00        | 0.00         | 0.00        | 0.00         | 0.00        | 0.00        |        |
| Die Coating Booth                                     | 1.69         | 1.69         | 0.00        | 0.00         | 0.00        | 0.00         | 0.00        | 0.00        |        |
| Cold Cleaner  | 0.00         | 0.00         | 0.00        | 0.00         | negligible  | 0.00         | negligible  | 0.00        |        |
| <b>Total</b>  | <b>78.95</b> | <b>77.86</b> | <b>0.19</b> | <b>29.24</b> | <b>1.42</b> | <b>17.76</b> | <b>0.52</b> | <b>0.37</b> | Hexane |

\*Includes PM, PM10, and HAPs emissions from fluxing used in reverberatory furnace #1 and jet melters #2, #3, #5, and #6.

\*\*Includes reverberatory furnace and jet melter(s) natural gas combustion HAPs emissions.

**Appendix A: Emission Calculations  
Jet Melters**

Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374  
Permit Number: 177-20368-00050  
Reviewer: Brian Williams

| Jet Melter #2 on Natural Gas    |            |        |                 |          |         |       |
|---------------------------------|------------|--------|-----------------|----------|---------|-------|
| Type of Material                | Throughput |        | Capacity        |          |         |       |
|                                 | lbs/hr     | ton/hr |                 | MMBtu/hr | MMCF/hr |       |
| Aluminum                        | 4000       | 2      |                 | 4.80     | 0.0048  |       |
|                                 |            |        |                 |          |         |       |
|                                 | PM         | PM10   | SO <sub>2</sub> | NOx      | VOC     | CO    |
| Emission Factors                |            |        |                 |          |         |       |
| lb/ton                          | 1.1        | 1.1    |                 |          |         |       |
| lb/mmcft                        |            |        | 1.05            | 157.5    | 7.35    | 84    |
| Potential Emissions (lbs/hr)    | 2.20       | 2.20   | 0.0050          | 0.756    | 0.0353  | 0.403 |
| Potential Emissions (lbs/day)   | 52.8       | 52.8   | 0.121           | 18.1     | 0.847   | 9.68  |
| Potential Emissions (tons/year) | 9.64       | 9.64   | 0.022           | 3.31     | 0.155   | 1.77  |

**Methodology**

PM, PM-10, SO<sub>2</sub>, NO<sub>x</sub>, AND VOC emission factors from STAPPA/ALAPCO handbook, section 11  
CO Emission Factor from AP 42, Chapter 1.4, Table 1.4-1 (SUPPLEMENT D 3/98).  
PM/PM10 Emissions (tons/yr) = Throughput (tons/hr) x Emission Factor (lbs/ton) x 8,760 hrs/yr x 1 ton/2,000 lbs  
All emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMCF = 1,000,000 Cubic Feet of Gas  
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 1 MMCF/1,000 MMBtu  
SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO Emission (lbs/hr) = Capacity (MMCF/hr) x Emission Factor (lb/MMCF)  
SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO Emissions (tons/yr) = Capacity (MMCF/hr) x Emission Factor (lb/MMCF) x 8760 hrs/yr x 1 ton/2,000 lbs

| Jet Melter #2 on Propane        |            |        |                        |          |          |       |
|---------------------------------|------------|--------|------------------------|----------|----------|-------|
| TYPE OF MATERIAL                | Throughput |        | Sulfur Content         | Capacity |          |       |
|                                 | lbs/hr     | TON/HR | gr/100 ft <sup>3</sup> | MMBtu/hr | kgals/hr |       |
| Aluminum                        | 4000       | 2.00   | 0.18                   | 4.80     | 0.053    |       |
|                                 |            |        |                        |          |          |       |
|                                 | PM         | PM10   | SO <sub>2</sub>        | NOx      | VOC      | CO    |
| Emission Factors                |            |        |                        |          |          |       |
| lb/ton                          | 1.1        | 1.1    | 0.10 S                 |          |          |       |
| lbs/1,000 gal                   |            |        | 0.018                  | 14       | 0.5      | 1.9   |
| Potential Emissions (lbs/hr)    | 2.20       | 2.20   | 0.001                  | 0.743    | 0.027    | 0.101 |
| Potential Emissions (lbs/day)   | 52.8       | 52.8   | 0.023                  | 17.8     | 0.636    | 2.42  |
| Potential Emissions (tons/year) | 9.64       | 9.64   | 0.004                  | 3.25     | 0.116    | 0.44  |

**Methodology**

PM, PM-10, and VOC emission factors from STAPPA/ALAPCO handbook, section 11  
SO<sub>2</sub>, NO<sub>x</sub> and CO emission factor from AP-42, Chapter 1.5, Table 1.5-1 (October 1996)  
PM/PM10 Emissions (tons/yr) = Throughput (tons/hr) x Emission Factor (lbs/ton) x 8,760 hrs/yr x 1 ton/2,000 lbs  
SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO Emissions (lbs/hr) = Capacity (MMBtu/hr) x 1 kgal/1000 gal x 1 gal/0.0905 MMBtu x Emission Factor (lbs/kilocal)  
SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO Emissions (tons/yr) = Capacity (MMBtu/hr) x 1 kgal/1000 gal x 1 gal/0.0905 MMBtu x Emission Factor (lbs/kilocal) x 8760 hrs/yr x 1 ton/2,000 lbs  
Heat Content of Propane = 90,500 Btu/gal

| Potential Emissions (tons/year) |             |             |                 |             |              |             |
|---------------------------------|-------------|-------------|-----------------|-------------|--------------|-------------|
| On Worst Case Fuel              | PM          | PM10        | SO <sub>2</sub> | NOx         | VOC          | CO          |
| Reverberatory Furnace #1        | 9.64        | 9.64        | 0.02            | 3.31        | 0.15         | 1.77        |
| <b>Total</b>                    | <b>9.64</b> | <b>9.64</b> | <b>0.022</b>    | <b>3.31</b> | <b>0.155</b> | <b>1.77</b> |

| Jet Melter #3 on Natural Gas    |            |        |                 |          |         |       |
|---------------------------------|------------|--------|-----------------|----------|---------|-------|
| Type of Material                | Throughput |        | Capacity        |          |         |       |
|                                 | lbs/hr     | ton/hr |                 | MMBtu/hr | MMCF/hr |       |
| Aluminum                        | 4500       | 2.25   |                 | 6.27     | 0.0063  |       |
|                                 |            |        |                 |          |         |       |
|                                 | PM         | PM10   | SO <sub>2</sub> | NOx      | VOC     | CO    |
| Emission Factors                |            |        |                 |          |         |       |
| lb/ton                          | 1.1        | 1.1    |                 |          |         |       |
| lb/mmcft                        |            |        | 1.05            | 157.5    | 7.35    | 84    |
| Potential Emissions (lbs/hr)    | 2.48       | 2.48   | 0.0066          | 0.988    | 0.0461  | 0.527 |
| Potential Emissions (lbs/day)   | 59.4       | 59.4   | 0.158           | 23.7     | 1.106   | 12.64 |
| Potential Emissions (tons/year) | 10.84      | 10.84  | 0.029           | 4.33     | 0.202   | 2.31  |

| Jet Melter #3 on Propane        |            |        |                        |          |          |       |
|---------------------------------|------------|--------|------------------------|----------|----------|-------|
| TYPE OF MATERIAL                | Throughput |        | Sulfur Content         | Capacity |          |       |
|                                 | lbs/hr     | TON/HR | gr/100 ft <sup>3</sup> | MMBtu/hr | kgals/hr |       |
| Aluminum                        | 4500       | 2.25   | 0.18                   | 6.27     | 0.069    |       |
|                                 |            |        |                        |          |          |       |
|                                 | PM         | PM10   | SO <sub>2</sub>        | NOx      | VOC      | CO    |
| Emission Factors                |            |        |                        |          |          |       |
| lb/ton                          | 1.1        | 1.1    | 0.10 S                 |          |          |       |
| lbs/1,000 gal                   |            |        | 0.018                  | 14       | 0.5      | 1.9   |
| Potential Emissions (lbs/hr)    | 2.48       | 2.48   | 0.001                  | 0.743    | 0.027    | 0.101 |
| Potential Emissions (lbs/day)   | 59.4       | 59.4   | 0.030                  | 17.8     | 0.636    | 2.42  |
| Potential Emissions (tons/year) | 10.84      | 10.84  | 0.005                  | 3.25     | 0.116    | 0.44  |

Methodology same as above

| Potential Emissions (tons/year) |              |              |                 |             |              |             |
|---------------------------------|--------------|--------------|-----------------|-------------|--------------|-------------|
| On Worst Case Fuel              | PM           | PM10         | SO <sub>2</sub> | NOx         | VOC          | CO          |
| Reverberatory Furnace #1        | 10.84        | 10.84        | 0.03            | 4.33        | 0.20         | 2.31        |
| <b>Total</b>                    | <b>10.84</b> | <b>10.84</b> | <b>0.029</b>    | <b>4.33</b> | <b>0.202</b> | <b>2.31</b> |

Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374  
Permit Number: 177-20368-00050  
Reviewer: Brian Williams

| Jet Melter #5 on Natural Gas    |            |        |                 |         |        |       |
|---------------------------------|------------|--------|-----------------|---------|--------|-------|
| Type of Material                | Throughput |        | Capacity        |         |        |       |
|                                 | lbs/hr     | ton/hr | MMBtu/hr        | MMCF/hr |        |       |
| Aluminum                        | 4500       | 2.25   | 6.27            | 0.0063  |        |       |
|                                 | PM         | PM10   | SO <sub>2</sub> | NOx     | VOC    | CO    |
| Emission Factors                |            |        |                 |         |        |       |
| lb/ton                          | 1.1        | 1.1    |                 |         |        |       |
| lb/mmcf                         |            |        | 1.05            | 157.5   | 7.35   | 84    |
| Potential Emissions (lbs/hr)    | 2.48       | 2.48   | 0.0066          | 0.988   | 0.0461 | 0.527 |
| Potential Emissions (lbs/day)   | 59.4       | 59.4   | 0.158           | 23.7    | 1.106  | 12.64 |
| Potential Emissions (tons/year) | 10.84      | 10.84  | 0.029           | 4.33    | 0.202  | 2.31  |

| Jet Melter #5 on Propane        |            |        |                        |          |          |       |
|---------------------------------|------------|--------|------------------------|----------|----------|-------|
| TYPE OF MATERIAL                | Throughput |        | Sulfur Content         | Capacity |          |       |
|                                 | lbs/hr     | TON/HR | gr/100 ft <sup>3</sup> | MMBtu/hr | kgals/hr |       |
| Aluminum                        | 4500       | 2.25   | 0.18                   | 6.27     | 0.069    |       |
|                                 | PM         | PM10   | SO <sub>2</sub>        | NOx      | VOC      | CO    |
| Emission Factors                |            |        |                        |          |          |       |
| lb/ton                          | 1.1        | 1.1    | 0.10 S                 |          |          |       |
| lbs/1,000 gal                   |            |        | 0.018                  | 14       | 0.5      | 1.9   |
| Potential Emissions (lbs/hr)    | 2.48       | 2.48   | 0.001                  | 0.743    | 0.027    | 0.101 |
| Potential Emissions (lbs/day)   | 59.4       | 59.4   | 0.030                  | 17.8     | 0.636    | 2.42  |
| Potential Emissions (tons/year) | 10.84      | 10.84  | 0.005                  | 3.25     | 0.116    | 0.44  |

Methodology same as on Page 2

| Potential Emissions (tons/year) |       |       |                 |      |       |      |
|---------------------------------|-------|-------|-----------------|------|-------|------|
| On Worst Case Fuel              | PM    | PM10  | SO <sub>2</sub> | NOx  | VOC   | CO   |
| Reverberatory Furnace #1        | 10.84 | 10.84 | 0.03            | 4.33 | 0.20  | 2.31 |
| Total                           | 10.84 | 10.84 | 0.029           | 4.33 | 0.202 | 2.31 |

| Jet Melter #6 on Natural Gas    |            |        |                 |         |        |       |
|---------------------------------|------------|--------|-----------------|---------|--------|-------|
| Type of Material                | Throughput |        | Capacity        |         |        |       |
|                                 | lbs/hr     | ton/hr | MMBtu/hr        | MMCF/hr |        |       |
| Aluminum                        | 4000       | 2      | 4.80            | 0.0048  |        |       |
|                                 | PM         | PM10   | SO <sub>2</sub> | NOx     | VOC    | CO    |
| Emission Factors                |            |        |                 |         |        |       |
| lb/ton                          | 1.1        | 1.1    |                 |         |        |       |
| lb/mmcf                         |            |        | 1.05            | 157.5   | 7.35   | 84    |
| Potential Emissions (lbs/hr)    | 2.20       | 2.20   | 0.0050          | 0.756   | 0.0353 | 0.403 |
| Potential Emissions (lbs/day)   | 52.8       | 52.8   | 0.121           | 18.1    | 0.847  | 9.68  |
| Potential Emissions (tons/year) | 9.64       | 9.64   | 0.022           | 3.31    | 0.155  | 1.77  |

| Jet Melter #6 on Propane        |            |        |                        |          |          |       |
|---------------------------------|------------|--------|------------------------|----------|----------|-------|
| TYPE OF MATERIAL                | Throughput |        | Sulfur Content         | Capacity |          |       |
|                                 | lbs/hr     | TON/HR | gr/100 ft <sup>3</sup> | MMBtu/hr | kgals/hr |       |
| Aluminum                        | 4000       | 2.00   | 0.18                   | 4.80     | 0.053    |       |
|                                 | PM         | PM10   | SO <sub>2</sub>        | NOx      | VOC      | CO    |
| Emission Factors                |            |        |                        |          |          |       |
| lb/ton                          | 1.1        | 1.1    | 0.10 S                 |          |          |       |
| lbs/1,000 gal                   |            |        | 0.018                  | 14       | 0.5      | 1.9   |
| Potential Emissions (lbs/hr)    | 2.20       | 2.20   | 0.001                  | 0.743    | 0.027    | 0.101 |
| Potential Emissions (lbs/day)   | 52.8       | 52.8   | 0.023                  | 17.8     | 0.636    | 2.42  |
| Potential Emissions (tons/year) | 9.64       | 9.64   | 0.004                  | 3.25     | 0.116    | 0.44  |

Methodology same as on Page 2

| Potential Emissions (tons/year) |      |      |                 |      |       |      |
|---------------------------------|------|------|-----------------|------|-------|------|
| On Worst Case Fuel              | PM   | PM10 | SO <sub>2</sub> | NOx  | VOC   | CO   |
| Reverberatory Furnace #1        | 9.64 | 9.64 | 0.02            | 3.31 | 0.15  | 1.77 |
| Total                           | 9.64 | 9.64 | 0.022           | 3.31 | 0.155 | 1.77 |

**Appendix A: Emission Calculations  
Reverberatory Furnace #1**

**Company Name: General Aluminum Manufacturing Co. - Richmond Plant**  
**Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374**  
**Permit Number: 177-20368-00050**  
**Reviewer: Brian Williams**

**Reverberatory Furnace #1 on Natural Gas**

| TYPE OF MATERIAL                       | Throughput |        | Capacity        |          |         |       |
|--|------------|--------|-----------------|----------|---------|-------|
|  | lbs/hr     | ton/hr |                 | MMBtu/hr | MMCF/hr |       |
| Aluminum                               | 5500       | 2.75   |                 | 10.00    | 0.0100  |       |
|  | PM         | PM10   | SO <sub>2</sub> | NOx      | VOC     | CO    |
| <b>Emission Factors</b>                |            |        |                 |          |         |       |
| lb/ton                                 | 1.1        | 1.1    |                 |          |         |       |
| lb/mmcf                                |            |        | 1.05            | 157.5    | 7.35    | 84    |
| <b>Potential Emissions (lbs/hr)</b>    | 3.03       | 3.03   | 0.0105          | 1.575    | 0.0735  | 0.840 |
| <b>Potential Emissions (lbs/day)</b>   | 72.6       | 72.6   | 0.252           | 37.8     | 1.764   | 20.16 |
| <b>Potential Emissions (tons/year)</b> | 13.25      | 13.25  | 0.046           | 6.90     | 0.32    | 3.68  |

**Reverberatory Furnace #1 on Propane**

| TYPE OF MATERIAL                       | Throughput |        | Sulfur Content     | Capacity |          |       |
|--|------------|--------|--------------------|----------|----------|-------|
|  | lbs/hr     | ton/hr | gr/ft <sup>3</sup> | MMBtu/hr | kgals/hr |       |
| Aluminum                               | 5500       | 2.75   | 0.18               | 10.00    | 0.11     |       |
|  | PM         | PM10   | SO <sub>2</sub>    | NOx      | VOC      | CO    |
| <b>Emission Factors</b>                |            |        |                    |          |          |       |
| lb/ton                                 | 1.1        | 1.1    | 0.10 S             |          |          |       |
| lbs/1,000 gal                          |            |        | 0.018              | 14       | 0.5      | 1.9   |
| <b>Potential Emissions (lbs/hr)</b>    | 3.03       | 3.03   | 0.002              | 1.547    | 0.055    | 0.210 |
| <b>Potential Emissions (lbs/day)</b>   | 72.6       | 72.6   | 0.048              | 37.1     | 1.326    | 5.04  |
| <b>Potential Emissions (tons/year)</b> | 13.25      | 13.25  | 0.009              | 6.78     | 0.242    | 0.920 |

Methodology same as Page 2

| Potential Emissions (tons/year) |              |              |                 |             |              |             |
|---------------------------------|--------------|--------------|-----------------|-------------|--------------|-------------|
| On Worst Case Fuel              | PM           | PM10         | SO <sub>2</sub> | NOx         | VOC          | CO          |
| Reverberatory Furnace #1        | 13.25        | 13.25        | 0.05            | 6.90        | 0.32         | 3.68        |
| <b>Total</b>                    | <b>13.25</b> | <b>13.25</b> | <b>0.046</b>    | <b>6.90</b> | <b>0.322</b> | <b>3.68</b> |

**Appendix A: Emission Calculations  
Source Fluxing Operations**

**Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374  
MSOP: 177-20368-00050  
Reviewer: Brian Williams**

| Facility                | Potential Flux Usage<br>(lb/year) | Emission Factor*     |                      |   |                 | Potential to Emit (tons/year) |             |              |              |
|-------------------------|-----------------------------------|----------------------|----------------------|---|-----------------|-------------------------------|-------------|--------------|--------------|
|                         |                                   | PM                   | PM10                 | HCl   | HF              | PM                            | PM10        | HCl          | HF           |
|                         | (lb/year)                         | lb/ton chlorine used | lb/ton chlorine used | lb HCl / lb flux                            | lb HF / lb flux |                               |             |              |              |
| Flux (Cover and Wall)** | 35478                             | 1000                 | 532                  | 0.0026                                      | 0.0048          | 3.20                          | 1.70        | 0.046        | 0.085        |
|                         |                                   |                      |                      | <b>Total Potential to Emit (tons/year):</b> |                 | <b>3.20</b>                   | <b>1.70</b> | <b>0.046</b> | <b>0.085</b> |

\*PM & PM10 emission factors taken from AP-42, 5th Ed., Suppl. B Table 12.8-3., as lb/ton chlorine used. Flux chlorine contents are 36.1% (wt) for Foseco.

\*HCl & HF based on October 16, 2003 IDEM witnessed stack test, for Foseco Coveral 173 flux, at Amcast Automotive -Freemont.

For cover type flux, HCl Emission Factor: 0.039 lbs / 15 lbs flux & HF Emission Factor: 0.072 lbs / 15 lbs flux

See MSOP No.: 151-15211-00018 for more information.

General Aluminum Manufacturing Company - Richmond Plant was previously owned by Amcast Automotive.

Total flux usage for Reverberatory Furnace #1 and Jet Melters #2, #3, #5, and #6

\*\*Source uses Foseco Coveral 173 and Coveral 777 fluxes. Emission factors for Coveral 777 flux not available. However, IDEM has determined that the Coveral 173 and Coveral 777 flux will have similar emission rates. Therefore, IDEM assumes all flux used is Coveral 173

**Appendix A: Emission Calculations  
Shotblasting**

**Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana  
Permit Number: 177-20368-00050  
Reviewer: Brian Williams**

| Unit ID              | Control Efficiency (%) | Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.) | Gas or Air Flow Rate (acfm.) | PM Emission Rate before Controls (lb/hr) | PM Emission Rate before Controls (tons/yr) | PM Emission Rate after Controls (lb/hr) | PM Emission Rate after Controls (tons/yr) |
|----------------------|------------------------|---|------------------------------|--|--|---|---|
| Abrasive Blast Booth | 86.0%                  | 0.0300  | 4000                         | Integral                                 | Integral                                   | 1.029                                   | 4.51                                      |

**Methodology**

Abrasive blast booth has integral controls

Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (cub. ft./min.) (60 min/hr) (lb/7000 grains)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Note that a very conservative control efficiency of 86% was used so that a back calculation of PTE before controls would result in realistic numbers that would not exceed the total amount of shot used.

**Appendix A: Emissions Calculations  
VOC and Particulate  
From Die Coat Booth and Dry Ice Cleaning Booth**

**Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374  
Permit Number: 177-20368-00050  
Reviewer: Brian Williams**

| <b>Die Coat Booth</b>         |                  |                                    |                |                   |                |                                 |                        |                     |   |                                  |                               |                              |                             |                                |                   |                     |
|-------------------------------|------------------|------------------------------------|----------------|-------------------|----------------|---------------------------------|------------------------|---------------------|---|----------------------------------|-------------------------------|------------------------------|-----------------------------|--------------------------------|-------------------|---------------------|
| Material                      | Density (Lb/Gal) | Weight % Volatile (H2O & Organics) | Weight % Water | Weight % Organics | Volume % Water | Volume % Non-Volatiles (solids) | Gal of Mat. (gal/unit) | Maximum (unit/hour) | Pounds VOC per gallon of coating less water | Pounds VOC per gallon of coating | Potential VOC pounds per hour | Potential VOC pounds per day | Potential VOC tons per year | Particulate Potential (ton/yr) | lb VOC/gal solids | Transfer Efficiency |
| Dycote 34-S                   | 13.50            | 0.000%                             | 0.0%           | 0.0%              | 0.0%           | 100.00%                         | 0.07151                | 4.000               | 0.00  | 0.00                             | 0.00                          | 0.00                         | 0.00                        | 1.69                           | 0.0000            | 90%                 |
| PM Control Efficiency: 97.00% |                  |                                    |                |                   |                |                                 |                        |                     |   | <b>Uncontrolled</b>              | <b>0.00</b>                   | <b>0.00</b>                  | <b>0.00</b>                 | <b>1.69</b>                    |                   |                     |
|                               |                  |                                    |                |                   |                |                                 |                        |                     |   | <b>Controlled</b>                | <b>0.00</b>                   | <b>0.00</b>                  | <b>0.00</b>                 | <b>0.051</b>                   |                   |                     |

  

| <b>Dry Ice Cleaning Booth*</b> | <b>PM</b> | <b>15.2</b>  | <b>TPY</b>  |
|--------------------------------|-----------|--------------|-------------|
|                                |           | <b>PM-10</b> | <b>15.2</b> |

\*The dry ice cleaning booth will have no PM emissions from the dry ice but assume all the dycote that does transfer to the dies is PM emissions  
Therefore PTE PM from the dry ice blaster is:  
PM = ((PM PTE of Dycote) / (1-Transfer Efficiency)) \* Transfer Efficiency

**METHODOLOGY**  
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) \* Weight % Organics) / (1-Volume % water)  
Pounds of VOC per Gallon Coating = (Density (lb/gal) \* Weight % Organics)  
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr)  
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day)  
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (8760 hr/yr) \* (1 ton/2000 lbs)  
Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1- Weight % Volatiles) \* (1-Transfer efficiency) \* (8760 hrs/yr) \* (1 ton/2000 lbs)  
Pounds VOC per Gallon of Solids = (Density (lbs/gal) \* Weight % organics) / (Volume % solids)  
Total = Worst Coating + Sum of all solvents used

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100**

**Company Name:** General Aluminum Manufacturing Co. - Richmond Plant  
**Address City IN Zip:** 1561 Northwest 11th Street, Richmond, Indiana 47374  
**Permit Number:** 177-20368-00050  
**Reviewer:** Brian Williams

| Unit                   | Number of Units | Rating<br>mmBtu/hr | Total<br>mmBtu/hr |
|------------------------|-----------------|--------------------|-------------------|
| Aging Furnace          | 1               | 1.6                | 1.6               |
| Sow Mold Preheat       | 1               | 0.3                | 0.3               |
| Air Make Up (F15- F19) | 5               | 3                  | 15                |
| Dock Heaters           | 2               | 0.01               | 0.02              |
| <b>Total</b>           |                 |                    | <b>16.92</b>      |

Heat Input Capacity  
MMBtu/hr

Throughput  
MMCF/yr

16.92

141.16

| Emission Factor in lb/MMCF    | Pollutant |       |       |             |       |      |
|-------------------------------|-----------|-------|-------|-------------|-------|------|
|                               | PM*       | PM10* | SO2   | NOx         | VOC   | CO   |
|                               | 1.90      | 7.60  | 0.600 | 100         | 5.50  | 84.0 |
|                               |           |       |       | **see below |       |      |
| Potential Emission in tons/yr | 0.134     | 0.536 | 0.042 | 7.06        | 0.388 | 5.93 |

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,050 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 6 for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100  
HAPs Emissions**

**Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374  
Permit Number: 177-20368-00050  
Reviewer: Brian Williams**

| Unit                               | Number of Units | Rating<br>mmBtu/hr | Total<br>mmBtu/hr |
|------------------------------------|-----------------|--------------------|-------------------|
| Aging Furnace                      | 1               | 1.6                | 1.6               |
| Sow Mold Preheater                 | 1               | 0.3                | 0.3               |
| Air Make Up (F15- F19)             | 5               | 3                  | 15                |
| Dock Heaters                       | 2               | 0.01               | 0.02              |
| Jet Melters #2 & 6                 | 2               | 4.8                | 9.6               |
| Jet Melters #3 & 5                 | 2               | 6.27               | 12.54             |
| Reverberatory Furnace #1           | 1               | 10.00              | 10.00             |
| <b>Total including jet melters</b> |                 | <b>49.06</b>       | <b>49.06</b>      |
|                                    |                 | mmCF/yr            | <b>409.30</b>     |

| HAPs - Organics               |                    |                            |                         |                   |                    |
|-------------------------------|--------------------|----------------------------|-------------------------|-------------------|--------------------|
| Emission Factor in lb/MMcf    | Benzene<br>0.00210 | Dichlorobenzene<br>0.00120 | Formaldehyde<br>0.07500 | Hexane<br>1.80000 | Toluene<br>0.00340 |
| Potential Emission in tons/yr | 4.30E-04           | 2.46E-04                   | 1.53E-02                | 3.68E-01          | 6.96E-04           |

| HAPs - Metals                 |                |                   |                    |                     |                  |              |
|-------------------------------|----------------|-------------------|--------------------|---------------------|------------------|--------------|
| Emission Factor in lb/MMcf    | Lead<br>0.0005 | Cadmium<br>0.0011 | Chromium<br>0.0014 | Manganese<br>0.0004 | Nickel<br>0.0021 | Total        |
| Potential Emission in tons/yr | 1.02E-04       | 2.25E-04          | 2.87E-04           | 7.78E-05            | 4.30E-04         | <b>0.386</b> |

Methodology is the same as page 9.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
Space Heater (Propane Back Up)**

**Company Name: General Aluminum Manufacturing Co. - Richmond Plant  
Address City IN Zip: 1561 Northwest 11th Street, Richmond, Indiana 47374  
Permit Number: 177-20368-00050  
Reviewer: Brian Williams**

Heat Input Capacity  
MMBtu/hr  
**0.016**

Potential Throughput  
MMCF/yr  
**0.14**

| Emission Factor in lb/MMCF    | Pollutant |          |          |                      |          |          |
|-------------------------------|-----------|----------|----------|----------------------|----------|----------|
|                               | PM*       | PM10*    | SO2      | NOx                  | VOC      | CO       |
|                               | 1.9       | 7.6      | 0.6      | 100.0<br>**see below | 5.5      | 84.0     |
| Potential Emission in tons/yr | 1.33E-04  | 5.33E-04 | 4.20E-05 | 7.01E-03             | 3.85E-04 | 5.89E-03 |

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.  
\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

| Emission Factor in lb/MMcf    | HAPs - Organics |                 |              |           |           |
|-------------------------------|-----------------|-----------------|--------------|-----------|-----------|
|                               | Benzene         | Dichlorobenzene | Formaldehyde | Hexane    | Toluene   |
|                               | 2.1E-03         | 1.2E-03         | 7.5E-02      | 1.8E+00   | 3.4E-03   |
| Potential Emission in tons/yr | 1.472E-07       | 8.410E-08       | 5.256E-06    | 1.261E-04 | 2.383E-07 |

| Emission Factor in lb/MMcf    | HAPs - Metals |           |           |           |           |
|-------------------------------|---------------|-----------|-----------|-----------|-----------|
|                               | Lead          | Cadmium   | Chromium  | Manganese | Nickel    |
|                               | 5.0E-04       | 1.1E-03   | 1.4E-03   | 3.8E-04   | 2.1E-03   |
| Potential Emission in tons/yr | 3.504E-08     | 7.709E-08 | 9.811E-08 | 2.663E-08 | 1.472E-07 |

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Methodology**

All emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMCF = 1,000,000 Cubic Feet of Gas  
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu  
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Heat Input Capacity  
MMBtu/hr  
**0.016**

Potential Throughput  
kgals/year  
**1.55**

SO2 Emission factor = 0.10 x S  
S = Sulfur Content = **0.18** grains/100ft<sup>3</sup>

| Emission Factor in lb/kgal    | Pollutant |          |                |          |                    |          |
|-------------------------------|-----------|----------|----------------|----------|--------------------|----------|
|                               | PM*       | PM10*    | SO2            | NOx      | VOC                | CO       |
|                               | 0.6       | 0.6      | 0.0<br>(0.10S) | 14.0     | 0.5<br>**TOC value | 1.9      |
| Potential Emission in tons/yr | 4.65E-04  | 4.65E-04 | 1.39E-05       | 1.08E-02 | 3.87E-04           | 1.47E-03 |

\*PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.  
\*\*The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

**Methodology**

1 gallon of propane has a heating value of 90,500 Btu (use this to convert emission factors to an energy basis for propane)  
(Source - AP-42 (Supplement B 10/96) page 1.5-1)  
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0905 MMBtu  
Emission Factors are from AP42 (Supplement B 10/96), Table 1.5-1 (SCC #1-03-010-02)  
Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

| On Worst Case Fuel | Potential Emissions (tons/year) |          |          |          |          |          |           |
|--------------------|---------------------------------|----------|----------|----------|----------|----------|-----------|
|                    | PM                              | PM10     | SO2      | NOx      | VOC      | CO       | HAPs      |
| Space Heater       | 4.65E-04                        | 5.33E-04 | 4.20E-05 | 1.08E-02 | 3.87E-04 | 5.89E-03 | 1.323E-04 |