



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

December 14, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Alcoa, Inc - Warrick Operations / 173-20390-00007

FROM: Paul Dubenetzky
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 13-17-3-4 and 326 IAC 2, this approval is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 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 Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice.** The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER-MOD.dot 9/16/03



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

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December 14, 2004

Mr. Michael R. Lucas, VP & Gen. Mgr.
Alcoa, Inc. - Warrick Operations
Bldg. 1
P.O. Box 10
Newburgh, IN 47629-0010

Re: Minor Source Modification No:
173-20390-00007

Dear Mr. Lucas:

Alcoa, Inc. - Warrick Operations applied for a Part 70 Operating Permit on September 19, 1996 for a primary aluminum reduction source. An application to modify the source was received on November 16, 2004. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

Two (2) intermittent duty-cycled, diesel-fired, reciprocating internal combustion engines, identified as Water Pump Diesel Engines #1 and #2, exhausting to Stacks 134.E1 and 134.E2, heat output capacity: 460 brake horsepower each.

The Minor Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). The source may begin operation upon issuance of the source modification approval.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter contact Michael S. Schaffer, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206 6015, at 631-691-3395, ext. 23 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Original Signed by
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
MSS/MES

cc: File - Warrick County
U.S. EPA, Region V
Warrick County Health Department
Southwest Regional Office
Air Compliance Section Inspector - Richard Sekula
Compliance Branch
Administrative and Development
Technical Support and Modeling - Michele Boner



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PART 70 MINOR SOURCE MODIFICATION OFFICE OF AIR QUALITY

Alcoa, Inc. - Warrick Operations Junction Indiana Highways 66 and 61 Newburgh, Indiana 47629

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

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

Source Modification No.: MSM 173-20390-00007

Issued by: Original Signed by
Paul Dubenetzky, Branch Chief
Office of Air Quality

Issuance Date: December 14, 2004

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SECTION A

SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary primary aluminum reduction source.

Responsible Official:	Vice President & General Manager
Source Address:	Junction Indiana Highways 66 and 61, Newburgh, Indiana 47629
Mailing Address:	Bldg. 860 E, P.O. Box 10, Newburgh, Indiana 47629-0010
General Source Phone Number:	812 - 853 - 6111
SIC Code:	3334
County Location:	Warrick
Source Location Status:	Nonattainment for ozone under the 8-hour standard Attainment for all other criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules and Nonattainment NSR; Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

This stationary source is approved to construct and operate the following emission units and pollution control devices:

Two (2) intermittent duty-cycled, diesel-fired, reciprocating internal combustion engines, identified as Water Pump Diesel Engines #1 and #2, exhausting to Stacks 134.E1 and 134.E2, heat output capacity: 460 brake horsepower each.

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

This stationary source modification does not include any insignificant activities as defined in 326 IAC 2-7-1(21).

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

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

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION C GENERAL OPERATION CONDITIONS

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

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

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

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept 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.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

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

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

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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

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

C.4 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 approval:

(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.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 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

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

C.7 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ no later than forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation no 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]

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

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

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record Keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

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.

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

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

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;

- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and the Southwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967
Southwest Regional Office: 812-380-2305, facsimile 812-380-2304

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

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

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

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

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

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

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

C.12 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

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

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.13 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required data, reports and support information 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 kept 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.14 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The 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, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (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 the “responsible official” as defined by 326 IAC 2-7-1(34).

- (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.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Water Pump Diesel Engines #1 and #2

Two (2) intermittent duty-cycled, diesel-fired, reciprocating internal combustion engines, identified as Water Pump Diesel Engines #1 and #2, exhausting to Stacks 134.E1 and 134.E2, heat output capacity: 460 brake horsepower each

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

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

D.1.1 Nitrogen Oxides (NO_x) and Hazardous Air Pollutants (HAPs) [326 IAC 2-2] [326 IAC 2-1.1-5] [326 IAC 2-7-10.5(d)(4)(B)]

The number of hours that Water Pump Diesel Engines #1 and #2 operate shall not exceed 108 hours per twelve (12) consecutive month period each, with compliance determined at the end of each month. Compliance with this limitation shall render the requirements of major new source review and 326 IAC 2-7-10.5(f) not applicable.

Compliance Determination Requirements

There are no specific Compliance Determination Requirements applicable to this modification.

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

There are no specific Compliance Monitoring Requirements applicable to this modification.

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

D.1.2 Record Keeping Requirements

To document compliance with Condition D.1.1, the Permittee shall maintain monthly records of the actual number of hours that each engine operates.

D.1.3 Reporting Requirements

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

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

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: Alcoa, Inc. - Warrick Operations
Source Address: Junction Indiana Highways 66 and 61, Newburgh, Indiana 47629
Mailing Address: Bldg. 860 E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: MSM 173-20390-00007

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

Please check what document is being certified:

- 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 DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Junction Indiana Highways 66 and 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860 E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: MSM 173-20390-00007
 Facilities: Water Pump Diesel Engines #1 and #2
 Parameter: Number of Hours that each engine operates
 Limit: 108 hours per twelve (12) consecutive month period each, with compliance determined at the end of each month.

YEAR: _____

Month	Engine #1 (# of Hours)	Engine #2 (# of Hours)	Engine #1 (# of Hours)	Engine #2 (# of Hours)	Engine #1 (# of Hours)	Engine #2 (# of Hours)
	This Month	This Month	Previous 11 Months	Previous 11 Months	12 Month Total	12 Month Total

- 9 No deviation occurred in this month.
- 9 Deviation/s occurred in this month.
 Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Minor Source Modification

Source Background and Description

Source Name:	Alcoa, Inc. - Warrick Operations
Source Location:	Junction Indiana Highways 66 & 61, Newburgh, Indiana 47629-0010
County:	Warrick
SIC Code:	3334
Operation Permit No.:	T 173-6627-00007
Operation Permit Issuance Date:	Yet to be issued
Minor Source Modification No.:	MSM 173-20390-00007
Permit Reviewer:	Michael S. Schaffer

The Office of Air Quality (OAQ) has reviewed a modification application from Alcoa, Inc. - Warrick Operations relating to the construction and operation of the following emission units:

Two (2) intermittent duty-cycled, diesel-fired, reciprocating internal combustion engines, identified as Water Pump Diesel Engines #1 and #2, exhausting to Stacks 134.E1 and 134.E2, heat output capacity: 460 brake horsepower each.

History

On November 16, 2004, Alcoa, Inc. - Warrick Operations submitted a modification application to the OAQ requesting to construct and operate two (2) intermittent duty-cycled, diesel fired, reciprocating combustion engines (RICEs).

The source proposed to limit the hours of operation for the two (2) RICEs to no more than 108 hours per twelve (12) consecutive month period with compliance determined at the end of each month. This limit on hours of operation is necessary to limit the potential to emit NO_x to less than twenty-five (25) tons per year, total. Thus, this modification is a minor source modification pursuant to 326 IAC 2-7-10.5(d)(4)(B), rather than a significant source modification that would have been required without a limit on the number of hours that each engine operates.

There has been one (1) modification issued by IDEM, OAQ in the past twelve (12) months that was issued as an approval to construct new equipment. That permit was SSM 173-18465-00007, issued on March 16, 2004 and was the approval to operate a groundwater site remediation system which is not related to this construction and operation of the two (2) RICEs. Therefore, the emissions from the groundwater site remediation system will not be included in the PSD emissions analysis for this modification.

Existing Approvals

The source applied for a Part 70 Operating Permit T 173-6627-00007 on September 19, 1996. The source has been operating under previous approvals including, but not limited to the following:

- (a) Permit Modification 173-18905-00007, issued on September 24, 2004;
- (b) Significant Source Modification 173-17780-00007, issued on July 21, 2004;
- (c) Significant Source Modification 173-18465-00007, issued on March 16, 2004;
- (d) Significant Source Modification 173-16034-00007, issued on March 28, 2003;
- (e) Administrative Amendment 173-16991-00007, issued on January 30, 2003;
- (f) Administrative Amendment 173-16685-00007, issued on December 27, 2002;
- (g) Significant Source Modification 173-15661-00007, issued on August 23, 2002;
- (h) Minor Source Modification 173-15352-00007, issued on April 23, 2002;
- (i) Minor Source Modification 173-14944-00007, issued on December 5, 2001;
- (j) Significant Source Modification 173-14145-00007, issued on July 7, 2001;
- (k) Minor Source Modification 173-12886-00007, issued on February 1, 2001;
- (l) Minor Permit Modification 173-12588-00007, issued on October 10, 2000;
- (m) Minor Source Modification 173-12676-00007, issued on October 2, 2000;
- (n) Minor Permit Modification 173-11419-00007, issued on June 9, 2000;
- (o) Significant Source Modification 173-11342-00007, issued on May 23, 2000;
- (p) Significant Source Modification 173-11598-00007, issued on February 3, 2000;
- (q) Administrative Amendment 173-11403-00007, issued on January 28, 2000;
- (r) CP 173-11414-00007, issued on December 15, 1999;
- (s) CP 10913-00007, issued on October 1, 1999;
- (t) Exemption 173-10598-00007, issued on September 20, 1999;
- (u) Minor Source Modification 173-10959-00007, issued on July 15, 1999;
- (v) Exemption 173-10142-00007, issued on October 28, 1998;
- (w) Registration 173-9960-00007, issued on August 6, 1998;
- (x) Registration 173-9574-00007, issued on August 6, 1998;
- (y) Exemption 173-9620-00007, issued on June 17, 1998;
- (z) Exemption 173-9644-00007, issued on May 5, 1998;
- (aa) Administrative Amendment 173-8566-00007, issued on May 29, 1997;

- (bb) Registration 173-8161-00007, issued on May 19, 1997;
- (cc) Registration 173-8193-00007, issued on May 13, 1997;
- (dd) Administrative Amendment 173-6196-00007, issued on September 27, 1996;
- (ee) Registration 173-6325-00007, issued on August 28, 1996;
- (ff) Administrative Amendment 173-5524-00007, issued on May 6, 1996;
- (gg) Registration 173-5449-00007, issued on April 11, 1996;
- (hh) Administrative Amendment 173-4611-00007, issued on November 30, 1995; and
- (ii) CP173-4501-00007, issued on June 16, 1995.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
134.E1	Water Pump Diesel Engine #1	Ground Level	0.5	2,534	980
134.E2	Water Pump Diesel Engine #2	Ground Level	0.5	2,534	980

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on November 16, 2004.

Emission Calculations

See Pages 1 and 2 of 2 in Appendix A of this document for detailed emissions calculations.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA.”

This table reflects the PTE 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	3.04
PM ₁₀	3.04
SO ₂	2.83
VOC	3.47
CO	9.22
NO _x	42.8

HAPs	Potential To Emit (tons/year)
Acetaldehyde	0.008
Anthracene	0.00002
Benzene	0.009
Chrysene	0.000003
Fluoranthene	0.0001
Fluorene	0.0003
Formaldehyde	0.012
Phenanthrene	0.0003
Propylene	0.025
TOTAL	0.054

Justification for Modification

- (a) The Part 70 Operating Permit is being modified through a Part 70 Minor Source Modification because the potential to emit NO_x from this modification is limited less than twenty-five (25) tons per year, total. This modification is being performed pursuant to 326 IAC 2-7-10.5(d)(4)(B).
- (b) Since the Part 70 Operating Permit for this source has not been issued yet, the approval of this Minor Source Modification will allow the source to construct and operate the two (2) RICEs.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2002 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	Greater than 100
PM ₁₀	646
SO ₂	3,192
VOC	595
CO	22,537
NO _x	251
Lead	0.09

County Attainment Status

The source is located in Warrick County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
1-Hour Ozone	attainment
8-Hour Ozone	nonattainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Warrick County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for 326 IAC 2-1.1-5 (Non-attainment New Source Review).
- (b) Warrick County has been classified as attainment or unclassifiable for PM₁₀, SO₂, NO₂, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

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

Pollutant	Emissions (tons/year)
PM	Greater than 100
PM ₁₀	Greater than 100
SO ₂	Greater than 100
VOC	Greater than 100
CO	Greater than 100
NO _x	Greater than 100

This existing source is a major stationary source because attainment and nonattainment regulated pollutants are emitted at a rate of one hundred (100) tons per year or more, and since this source is a primary aluminum reduction source, it is one of the 28 listed source categories.

These emissions are based upon Alcoa, Inc. - Warrick Operations' 2002 Annual Source Emission Statement.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Pollutant	PM (tons/yr)	PM ₁₀ (tons/yr)	SO ₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO _x (tons/yr)
Water Pump Diesel Engines #1 and #2	0.109	0.109	0.102	0.125	0.332	1.54
Major New Source Review Significant Level	25	15	40	40	100	40

- (a) This modification to an existing major stationary source is not major because the emissions increase from the addition Water Pump Diesel Engines #1 and #2 is less than the major new source review significant levels. Therefore, pursuant to 326 IAC 2-2 and 326 IAC 2-1.1-5, the major new source review requirements do not apply to this modification.
- (b) As part of this modification this source has elected to limit the number of hours that each RICE operates to no more than 108 hours per twelve (12) consecutive month period with compliance determined at the end of each month. Compliance with this limitation shall render the requirements of major new source review and 326 IAC 2-7-10.5(f) not applicable to this modification.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source submitted their Part 70 (T 173-6627-00007) application on September 19,

1996. The construction and operation of Water Pump Diesel Engines #1 and #2 is being reviewed under this permit shall be incorporated into the submitted Part 70 application.

Federal Rule Applicability

- (a) This modification does not involve a pollutant-specific emissions unit as defined in 40 CFR 64.1 for NO_x:
 - (1) with the potential to emit before controls equal to or greater than the major source threshold for NO_x,
 - (2) that is subject to an emission limitation or standard for NO_x, and
 - (3) uses a control device as defined in 40 CFR 64.1 to comply with that emission limitation or standard.

Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are not applicable to this modification.

- (b) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.
- (c) Diesel Water Pump Engines #1 and #2 are not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart ZZZZ for Stationary Reciprocating Combustion Engines because pursuant to 40 CFR 63.6590, any stationary RICE with a site-rating less than or equal to 500 brake horsepower is not considered an affected source under NESHAP Subpart ZZZZ.

State Rule Applicability - Individual Facilities

326 IAC 2-1.1-5 (Nonattainment New Source Review)
326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

In order to limit the potential to emit NO_x from this modification to less than twenty-five (25) tons per year total, the source has elected to limit Water Pump Diesel Engines #1 and #2 as follows:

The number of hours that Water Pump Diesel Engines #1 and #2 operate shall not exceed 108 hours per twelve (12) consecutive month period each, with compliance determined and the end of each month. Compliance with this limitation shall render the requirements of major new source review not applicable to this modification.

326 IAC 2-4.1-1 (New source toxics control)

Since the potential to emit any single HAP from this modification is less than ten (10) tons per year and the potential to emit any combination of HAPs from this modification is less than twenty-five (25) tons per year, this modification is not greater than major source thresholds. Therefore, the requirements of 326 IAC 2-4.1-1 do not apply.

326 IAC 2-7-10.5(d) (Part 70 Minor Source Modification)

Since the potential to emit NO_x is limited to less than twenty-five (25) tons per year, the requirements of 326 IAC 2-7-10.5(f) (Part 70 Significant Source Modification) do not apply. Therefore, this modification is being performed as a Part 70 Minor Source Modification in accordance with 326 IAC 2-7-10.5(d)(4)(B).

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The potential to emit SO₂ from Water Pump Diesel Engines #1 and #2 is less than a total of twenty-five (25) tons per year and ten (10) pounds per hour. Therefore, the requirements of 326 IAC 7-1.1 do not apply to this modification.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

There are no specific compliance monitoring requirements applicable to this modification

Conclusion

The construction and operation of Diesel Water Pump Engines #1 and #2 shall be subject to the conditions of the attached proposed Minor Source Modification No. 173-20390-00007.

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Water Pump (>250 and <600 HP)
Reciprocating**

Company Name: Alcoa, Inc. - Warrick Operations
Address City IN Zip: Junction Indiana Highways 66 & 61, Newburgh, Indiana 47629-0010
Permit Number: MSM 173-20390
Plt ID: 173-00007
Reviewer: Michael S. Schaffer
Application Date: November 16, 2004

Water Pump Diesel Engines #1 and #2 with an output rating of 460 brake hp each

Heat Input Capacity Horsepower (hp)	Potential Throughput hp-hr/yr	Limited Potential Throughput hp-hr/yr
920.0	2760000.0	99360.0

Emission Factor in lb/hp-hr	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Potential Emission in tons/yr	3.04	3.04	2.83	42.78	3.47	9.22
Limited Potential Emission in tons/yr	0.109	0.109	0.102	1.54	0.125	0.332

Methodology

Potential Throughput and Limited Potential Throughput (hp-hr/yr) = hp * 3,000 hrs/yr and hp*108 hrs/yr, respectively.
 Potential Throughput based on intermittent use at 3,000 hours per year and Limited Potential Throughput is based on 108 hours per year
 Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2
 Emission (tons/yr) = [Potential Throughput or Limited Potential Throughput (hp-hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Water Pump (>250 and <600 HP)
Reciprocating**

Company Name: Alcoa, Inc. - Warrick Operations
Address City IN Zip: Junction Indiana Highways 66 & 61, Newburgh, Indiana 47629-0010
Permit Number: MSM 173-20390
Plt ID: 173-00007
Reviewer: Michael S. Schaffer
Application Date: November 16, 2004

Water Pump Diesel Engines #1 and #2 with an output rating of 460 brake hp each

Heat Output Capacity Horsepower (hp)	Potential Throughput (hp-hr/yr)	Limited Potential Throughput (hp-hr/yr)
920	2760000	99360

Pollutant	Emission Factor (lbs/hp-hr)	Potential to Emit (tons/year)	Limited Potential to Emit (tons/year)
Acetaldehyde	5.48E-06	0.008	0.0003
Anthracene	1.34E-08	0.00002	0.000001
Benzene	6.66E-06	0.009	0.0003
Chrysene	2.52E-09	0.000003	0.0000001
Fluoranthene	5.44E-08	0.0001	0.000003
Fluorene	2.11E-07	0.0003	0.00001
Formaldehyde	8.43E-06	0.012	0.0004
Phenanthrene	2.10E-07	0.0003	0.00001
Propylene	1.84E-05	0.025	0.0009
Total		0.054	0.002

Methodology

Emission factors have been converted from the lb/MMBtu Emission Factors listed in AP-42 Table 3.3-2 to lb/hp-hr using a brak consumption of 7000 hp-hr/Btu
 Methodology for Calculating HAPs emissions is the same as Page 1

ie specific fuel