



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant
DATE: May 18, 2006
RE: Alcoa / 173-22876-00002
FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 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 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
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Mr. Eric R. Foster
Alcoa Power Generating, Inc. – Warrick Power Plant
P.O. Box 10
Newburgh, Indiana 47629-0010

May 18, 2006

Re: Minor Source Modification No:
173-22876-00002 to
Part 70 Operating Permit No.: 173-6630-00002
(not issued yet)

Dear Mr. Foster:

Alcoa Power Generating, Inc. – Warrick Power Plant applied for a Part 70 operating permit on September 19, 1996 for a stationary electric utility generating station. An application to modify the source was received on March 27, 2006. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

The Permittee requested the following modification at their source:

The addition of one (1) 400 hp diesel dredge pump engine and one (1) 775 hp diesel dredge pump engine for pumping slurry from the ash pond. Operations will be limited to 1,610 hours per year.

The emissions unit description is as follows:

- (a) One (1) diesel 4SLB dredge pump engine, identified as Engine1, to be constructed in 2006, rated at 400 horsepower, using no controls.
- (b) One (1) diesel 4SLB dredge pump engine, identified as Engine2, to be constructed in 2006, rated at 775 horsepower, using no controls.

The source may begin construction when the minor source modification has been issued. Operating conditions shall be incorporated into the pending Part 70 operating permit as a minor permit modification in accordance with 326 IAC 2-7-12. Operation is not approved until the minor permit modification has been issued

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Stephen Treimel, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7902 to speak directly to Mr. Treimel. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204-2251, or call (800) 451-6027 and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed By:
Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

Attachments

MSM, TSD, TSD Appendix A (Potential to Emit calculations, one page)
ERG/ST

cc: File - Warrick County
Warrick County Health Department
South West Regional Office
Air Compliance Section Inspector - Derrick Ohning
Compliance Data Section
Administrative and Development
Technical Support and Modeling - Michele Boner



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PART 70 MINOR SOURCE MODIFICATION OFFICE OF AIR QUALITY

Alcoa Power Generating, Inc. – Warrick Power Plant 4700 Darlington Road Newburgh, Indiana 47630

(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: 173-22876-00002	
Issued by: Original Signed By: Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date: May 18, 2006

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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)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary electric utility generating station.

Responsible Official:	Station Manager of the Alcoa Warrick Power Plant
Source Address:	Junction State Routes 66 and 61, Newburgh, Indiana 47630
Mailing Address:	4700 Darlington Road, Newburgh, Indiana 47630
Source Telephone:	(812) 842-3301
SIC Code:	4911
County Location:	Warrick
Source Location Status:	Nonattainment for PM2.5 and Ozone under the 8-hour standard Attainment or unclassifiable for all other criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD and Emission Offset Rules 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:

- (a) One (1) diesel 4SLB dredge pump engine, identified as Engine1, to be constructed in 2006, rated at 400 horsepower, using no controls.
- (b) One (1) diesel 4SLB dredge pump engine, identified as Engine2, to be constructed in 2006, rated at 775 horsepower, using no controls.

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 currently have any insignificant activities, as defined in 326 IAC 2-7-1(21). All insignificant activities at the source will be included in the pending Part 70 Permit.

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

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

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

SECTION B GENERAL CONDITIONS

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

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

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 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 approval 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. One (1) certification may cover multiple forms in one (1) submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

B.5 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 approval, 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
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require the certification by the "responsible

official” as defined by 326 IAC 2-7-1(34).

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.6 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 approval;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and 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;

IDEM Main Office
Telephone Number: 1-800-451-6027
Telephone Number: 317-232-0178
Facsimile Number: 317-233-6865

IDEM Southwest Regional Office
Telephone Number: 1-888-672-8323
Telephone Number: 812-380-2305
Facsimile Number: 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
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded

due to the emergency.

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

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

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

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.7 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
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.8 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

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

SECTION C

GENERAL OPERATION CONDITIONS

Entire Source

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

C.1 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.2 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).

Compliance Requirements [326 IAC 2-1.1-11]

C.3 Compliance Requirements [326 IAC 2-1.1-11]

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

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

C.4 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.5 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this approval 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 methods as specified in this approval.

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

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

- (a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction

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

- (1) initial inspection and evaluation;
 - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
- (1) monitoring results;
 - (2) review of operation and maintenance procedures and records;
 - (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.7 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 approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by 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.8 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required monitoring data, reports and support information required by this approval 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 approval, all record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance.
- (c) If there is a reasonable possibility that a “project” (as defined in 326 IAC 2-2-1 (qq)) and 326 IAC 2-3-1 (ll) at an existing emissions unit other than projects at a Clean Unit), which is not part of a “major modification” (as defined in 326 IAC 2-2-1 (ee)) or 326 IAC 2-3-1 (z)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1 (rr)) or 326 IAC 2-3-1 (mm)), the Permittee shall comply with following:
 - (1) Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1 (qq)) or 326 IAC 2-3-1 (ll)) at an existing emissions unit, document and maintain the following records:
 - (A) A description of the project;
 - (B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project;
 - (C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:
 - (i) Baseline actual emissions;
 - (ii) Projected actual emissions;
 - (iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr) (2)(A)(iii) or 326 IAC 2-3-1(mm)(2)(A)(3); and
 - (iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.
 - (2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and
 - (3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.9 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

- (a) The reports required by conditions in Section D of this approval shall be submitted to:

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

- (b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval 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 approval, all reports required in Section D of this approval 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 approval 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 FACILITY OPERATION CONDITIONS

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

- (g) One (1) diesel 4SLB dredge pump engine, identified as Engine1, to be constructed in 2006, rated at 400 horsepower, using no controls.
- (h) One (1) diesel 4SLB dredge pump engine, identified as Engine2, to be constructed in 2006, rated at 775 horsepower, using no controls.

(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 Minor Modification Limit [326 IAC 2-7-10.5(d)(4)(B)] [326 IAC 2-2] [326 IAC 2-3]

Pursuant to 326 IAC 2-7-10.5(d)(4)(B), the Permittee shall limit the hours of operation for each of the dredge pump engines to 1610 hours per twelve (12) consecutive month period, with compliance determined at the end of each month. This limit on hours of operation is required to limit the potential to emit of all criteria pollutants to less than 25 tons per twelve (12) consecutive month period. Compliance with this limit makes the modification a minor modification under 326 IAC 2-7-10.5 and makes the modification minor under 326 IAC 2-2 (PSD) and 326 IAC 2-3 (Emission Offset).

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

D.1.2 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records of the hours of operation of Engine1 and Engine2. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the limits on hours of operation established in Condition D.1.1. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

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 Power Generating Inc. – Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 47630
Mailing Address: 4700 Darlington Road, Newburgh, Indiana 47630
Source Modification No.: 173-22876-00002

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

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Report (specify)
- Notification (specify)
- Affidavit (specify)
- Other (specify)

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

Signature:

Printed Name:

Title/Position:

Phone:

Date:

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

**COMPLIANCE BRANCH
100 North Senate Avenue
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865**

**PART 70 SOURCE MODIFICATION
EMERGENCY OCCURRENCE REPORT**

Source Name: Alcoa Power Generating Inc. – Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 47630
Mailing Address: 4700 Darlington Road, Newburgh, Indiana 47630
Source Modification No.: 173-22876-00002

This form consists of 2 pages

Page 1 of 2

- | |
|--|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none">C The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); andC The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16. |
|--|

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

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

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

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NO _x , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

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

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. – Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 47630
Mailing Address: 4700 Darlington Road, Newburgh, Indiana 47630
Source Modification No.: 173-22876-00002
Facility: Engine1 and Engine2
Parameter: Operating Hours
Limit: 1610 hours of operation per 12 month consecutive period each, with compliance determined at the end of each month.

YEAR:

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

No deviation occurred in this quarter.

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

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

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

Source Description and Location
--

Source Name:	Alcoa Power Generating, Inc. – Warrick Power Plant
Source Location:	4700 Darlington Road, Newburgh, Indiana 47630
County:	Warrick
SIC Code:	4931
Operation Permit No.:	T 173-6630-00002
Operation Permit Issuance Date:	Not yet issued
Minor Source Modification No.:	173-22876-00002
Permit Reviewer:	ERG/ST

Existing Approvals

Alcoa Power Generating Inc. – Warrick Power Plant submitted a Part 70 Permit application to IDEM, OAQ on September 19, 1996, which is currently pending. The source has been operating under previous approvals including, but not limited to, the following:

- (a) OP 87-01-90-0097, issued on January 4, 1988;
- (b) OP 87-01-90-0098, issued on January 4, 1988;
- (c) OP 87-01-90-0099, issued on January 4, 1988;
- (d) OP 87-01-90-0100, issued on January 4, 1988;
- (e) OP 87-01-90-0101, issued on January 4, 1988;
- (f) CP 173-2087, issued December 9, 1991;
- (g) Amendment CP 173-2087, issued August 12, 1996;
- (h) Acid Rain 173-5155-00005, issued on December 31, 1997;
- (i) Acid Rain 173-11457-00002, issued on December 28, 1999;
- (j) First Minor Source Modification 173-14884-00002, issued November 1, 2001;
- (k) First Administrative Amendment 173-15143-00002, issued on November 14, 2001;
- (l) First Significant Source Modification 173-16275-00002, issued November 6, 2002;
- (l) Second Administrative Amendment 173-17280-00002, issued June 9, 2003;
- (m) Second Significant Source Modification 173-18485-00002, issued April 8, 2004;
- (n) Acid Rain Permit Renewal 173-19650-00002, issued on December 28, 2004;

- (o) Third Administrative Amendment 173-20215-00002, issued on February 3, 2005;
- (p) Acid Rain Administrative Amendment 173-20771-00002, issued on September 30, 2005;
- (q) Title V Interim 173-22006I-00002, issued on December 29, 2005; and
- (r) Temporary Operation Exemption 173-22838-00002, issued on April 6, 2006.

County Attainment Status

The source is located in Warrick County.

Pollutant	Status
PM10	Attainment
PM2.5	Nonattainment
SO ₂	Unclassifiable
NO ₂	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and nitrogen oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx 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 NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Warrick County as nonattainment for PM2.5. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's guidance to regulate PM10 emissions as a surrogate for PM2.5 emissions pursuant to the requirements of Emission Offset, 326 IAC 2-3.
- (c) Warrick County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (d) Since this source is classified as a fossil fuel fired steam electric generating plant, it is considered to be in one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).
- (e) Fugitive Emissions
Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are counted toward the determination of PSD and Emission Offset applicability.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	Emissions (tons/year)
PM	Greater than 100
PM10	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, under PSD (326 IAC 2-2), because a regulated pollutant is emitted at a rate of 100 tons per year or more, and it is in one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

This existing source is a major stationary source under Emission Offset (326 IAC 2-3) because PM_{2.5} and volatile organic compounds, which are both nonattainment regulated pollutants, are emitted at a rate of 100 tons per year or more.

These emissions are based upon the actual emissions reported by the source for 2003.

The table below summarizes the potential to emit HAPs for the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

HAPs	Potential To Emit (tons/year)
Cyanide	Greater than 10
All Others	Less than 10
TOTAL	Greater than 25

This existing source is a major source of HAPs, as defined in 40 CFR 63.41, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2003 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM10	4,213
PM2.5	1,190
SO ₂	114,055
VOC	729
CO	25,881
NO _x	20,024
Lead	16.19

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Alcoa Power Generating, Inc. – Warrick Power Plant on March 27, 2006. The source proposes to add

two (2) diesel-powered, four-stroke lean burn internal combustion engines for operating dredge pumps. These engines are rated at 400 hp and 775 hp, respectively. They will operate without controls. The Permittee has requested limits on the hours of operation for these engines so that this modification will be a minor source modification under 326 IAC 2-7-10.5(d)(4). The following is a list of the proposed emission units:

- (a) One (1) diesel 4SLB dredge pump engine, identified as Engine1, to be constructed in 2006, rated at 400 horsepower, using no controls.
- (b) One (1) diesel 4SLB dredge pump engine, identified as Engine2, to be constructed in 2006, rated at 775 horsepower, using no controls.

Alcoa Power Generating Inc. – Warrick Power Plant submitted a Part 70 Permit application to IDEM, OAQ on September 19, 1996, which is currently pending.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

See Appendix A of this document for detailed emission calculations (one page).

Permit Level Determination – Part 70

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

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. 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)	Limited Potential To Emit (tons/year)
PM	6.23	1.15
PM10	6.23	1.15
SO ₂	17.3	3.18
VOC	6.8	1.25
CO	30.4	5.58
NO _x	136	24.96
Single HAP	0.12	0.02
Combination HAPs	0.18	0.03

This source modification is subject to 326 IAC 2-7-10.5(d)(4)(B), because the Permittee is limiting the hours of operation such that the potential to emit is limited to less than twenty-five (25) tons per year of any regulated pollutant. Additionally, the modification will be incorporated into the pending Part 70 Operating Permit pursuant to 326 IAC 2-7-12.

Permit Level Determination – PSD or Emission Offset

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 source modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/Emission Unit	Potential to Emit (tons/year)						HAPs
	PM	PM10	SO ₂	VOC	CO	NO _x	
Engine1	0.71	0.71	0.66	0.81	2.15	9.98	0.01
Engine2	0.44	0.44	2.52	0.44	3.43	14.97	0.02
Total for Modification	1.15	1.15	3.18	1.25	5.58	24.96	0.03
Significant Level or Major Source Threshold	25	15	40	40	100	40	Single: <10 Comb: <25

This modification to an existing major stationary source is not major because the emissions increase is limited to less than the PSD and Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-2 and 326 IAC 2-3, the PSD and Emission Offset requirements do not apply.

Warrick County has been designated as nonattainment for PM2.5 in 70 FR 943 dated January 5, 2005. According to the April 5, 2005 EPA memo titled "Implementation of New Source Review Requirements in PM2.5 Nonattainment Areas" authored by Steve Page, Director of OAQPS, until EPA promulgates the PM2.5 major NSR regulations, states should assume that a major stationary source's PM10 emissions represent PM2.5 emissions. IDEM will use the PM10 nonattainment major NSR program as a surrogate to address the requirements of nonattainment major NSR for the PM2.5 NAAQS. A significant emissions increase would be a net emissions increase or the potential of fifteen (15) tons per year or greater of PM10. Alcoa-Warrick has limited the potential to emit of PM10 from the modification to less than fifteen (15) tons per year. Therefore, assuming that PM10 emissions represent PM2.5 emissions, 326 IAC 2-3 does not apply for PM2.5.

Since this source is considered a major source under PSD and Emission Offset and the unrestricted potential to emit of this modification is greater than 40 tons per year of NO_x, the source has elected to limit the potential to emit of this modification by limiting the hours of operation of each of the engines to less than 1610 hours per twelve consecutive month period.

Compliance with this limit on hours of operation (1610 hours of operation per year for each engine) will ensure that the potential to emit from this modification is less than forty (40) tons of NO_x, and therefore, will render the provisions of 326 IAC 2-3 (Emission Offset) not applicable to this modification.

Federal Rule Applicability Determination

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.
- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) (326 IAC 20 and 40 CFR Part 63, Subpart ZZZZ) are not included in this modification for the dredge pump engines identified as Engine1 and Engine 2 because these engines are nonroad engines, as defined in 40 CFR 1068.30. Pursuant to 40 CFR 63.6585(a), Engine 1 and Engine 2 are not stationary RICE.

- (c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:
- (1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;
 - (2) is subject to an emission limitation or standard for that pollutant; and
 - (3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each new or modified emission unit involved:

Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Limited PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
Engine1	None	Yes	54.3 (NOx)	10.0 (NOx)	100	No	No
Engine2	None	Yes	81.5 (NOx)	15.0 (NOx)	100	No	No

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the new emission units as part of this modification.

State Rule Applicability Determination

326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-3 (Emission Offset)

This source is in 1 of the 28 source categories and there are applicable New Source Performance Standards that were in effect for this industry on August 7, 1980, therefore, fugitive emissions of VOC and PM are counted towards applicability of PSD and Emission Offset.

This source is a major source under PSD and Emission Offset. The unlimited potential to emit of NOx of the modification is greater than 40 tons per year. However, the Permittee has accepted limitations on the hours of operations of the engines such that the limited potential to emit of NOx (less than 25 tons per year) is below the Emission Offset threshold (40 tons per year). Each engine is limited to 1610 hours of operation per year. (See calculations in TSD Appendix A) Therefore, this modification does not trigger PSD review or Emission Offset review.

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

The operation of the dredge pump engines (Engine1 and Engine2) will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 will not apply.

326 IAC 2-7-10.5 (Source Modifications)

The increase in potential to emit of NOx of the dredge pump engines (Engine1 and Engine2) is greater than 25 tons per year. In order to make this modification minor under the Part 70 rules, the Permittee has agreed to limit the hours of operation of the dredge pump engines so that the limited potential to emit of NOx from both engines is less than 25 tons per year. Pursuant to 326 IAC 2-7-10.5(d)(4)(B), the Permittee shall limit the hours of operation of Engine1 and Engine2 to 1610 hours each per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with this limit makes this modification minor under 326 IAC 2-7-10.5. Compliance with this limit also makes this modification minor under PSD and Emission Offset.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The potential to emit of SO₂ from the two (2) dredge pump engines (Engine1 and Engine2) is less than 25 tons per year and less than ten (10) pounds per hour when burning No. 2 distillate fuel oil. Therefore, the requirements of 326 IAC 7 do not apply.

326 IAC 8-1-6 (Volatile Organic Compounds)

The two (2) dredge pump engines (Engine1 and Engine2) are to be constructed after January 1, 1980 and have a potential to emit VOC less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 do not apply.

326 IAC 9-1 (Carbon Monoxide)

The two (2) dredge pump engines (Engine1 and Engine2) are to be constructed after March 21, 1972 and are a source of carbon monoxide emissions. However, these engines are not subject to a limit in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9 do not apply.

326 IAC 10-2 and 326 IAC 10-3 (Nitrogen Oxides)

The two (2) dredge pump engines (Engine1 and Engine2) are not located in Clark or Floyd Counties, and are not of the type of emission units specified in 326 IAC 10-3. Therefore, the requirements of 326 IAC 10-2 and 326 IAC 10-3 do not apply.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a 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 Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

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

There are no Compliance Determination Requirements applicable to this modification.

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Minor Source Modification No. 173-22876-00002. The staff recommend to the Commissioner that this Part 70 Minor Source Modification be approved.

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel**

Company Name: Alcoa Power Generating, Inc - Warrick Power Plant
Address: 4700 Darlington Road, Newburgh, Indiana 47630
Permit No.: 173-22876-00002
Reviewer: ERG/ST
Date: April 21, 2006

Emissions from 400 hp diesel pump engine calculated based on output rating (hp)

Heat Input Capacity Horsepower (hp)	Potential Throughput (8760 hours) (hp-hours)	Limited Operating Hours (hours/year)	Limited Throughput (1610 hours) (hp-hours)
400	3504000	1610	644000

	Pollutant						
	PM*	PM10*	SO ₂	NOx	VOC	CO	HAPs
Emission Factor (lbs/hp-hour)	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067	4.4E-05
Limited Potential Emission (tons/year)	0.71	0.71	0.66	9.98	0.81	2.15	0.01

Emissions from 775 hp diesel pump engine calculated based on output rating (hp)

Heat Input Capacity Horsepower (hp)	Potential Throughput (8760 hours) (hp-hours)	Limited Operating Hours (hours/year)	Limited Throughput (1610 hours) (hp-hours)
775	6789000	1610	1247750

	Pollutant						
	PM*	PM10*	SO ₂	NOx	VOC	CO	HAPs
Emission Factor (lbs/hp-hour)	0.0007	0.0007	0.0040	0.0240	0.0007	0.0055	3.1E-05
Limited Potential Emission (tons/year)	0.44	0.44	2.52	14.97	0.44	3.43	0.02
Totals	1.15	1.15	3.18	24.96	1.25	5.58	0.03

Emission factors for 400 hp diesel fueled engine are from AP 42, Chapter 3.3, Tables 3.3-1 and 3.3-2 (SCC 2-02-001-02, 2-03-001-01)(10/96).
Emission factors for 750 hp diesel fueled engine are from AP 42, Chapter 3.4, Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 (SCC 2-02-004-01)(10/96).
Assume PM equals PM10

Methodology

Potential Throughput (hp-hour/year) = Heat Input Capacity (hp) x 8760 hours/year

Limited Throughput (hp-hour/year) = Heat Input Capacity (hp) x 2240 hours/year

Emission (tons/year) = [Limited Throughput (hp-hour) x Emission Factor (lbs/hp-hour) x 1 ton/2,000 lbs