



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

July 21, 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 / 173-17780-00007

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 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

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

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

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

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

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

Enclosures
FNPER.dot 9/16/03



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

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July 21, 2004

Melvin W. Lager, Jr., VP & Gen. Mgr.
Alcoa, Inc. - Warrick Operations
P.O. Box 10
Newburgh, Indiana 47629-0010

Re: Significant Source Modification No:
173-17780-00007

Dear Mr. Lager, Jr.:

Alcoa, Inc. - Warrick Operations applied for a Part 70 Operating Permit on September 19, 1996 for a primary aluminum processing source. An application to incorporate requirements for a smaller rebuilt green anode baking ring furnace from that permitted in SSM 173-15661-00007, issued on August 27, 2002 and to add and modify limits was received on August 4, 2003. In addition, limits on facilities in the Green Anode Production Mill from SSM 173-15661-00007 will be revised or deleted. Pursuant to 326 IAC 2-7-10.5 the following are approved for the source:

- (a) The input of green anodes to the rebuilt green anode baking ring furnace, permitted by SSM 173-15661-00003 has been decreased from 23.15 to 21.42 tons per hour. As a result, the maximum production of green anodes in the Green Anode Production Mill has been decreased to the actual two (2) year average green anode production from 1992 - 1993 of 187,645 tons per year. 1992 - 1993 represents the last two (2) years in which all six (6) potlines in the Green Anode Production mill were operated.
- (b) Since the furnace was rebuilt to a previous maximum annual production rate of the Green Anode Production Mill, there is no longer the possibility of increased utilization of the upstream and downstream facilities. Therefore, all limits from Condition D.1.3 of SSM 173-15661-00007, issued on August 27, 2002 have been revised or deleted and have superseded that condition.
- (c) The PSD netting credit used in SSM 173-15661-00007 for the ring furnace and dross cooling operations has been reassessed in this modification. This reassessment has shown that this modification is a minor PSD modification pursuant to 326 IAC 2-2.
- (d) This modification has incorporated the applicable requirements from SSM 173-14145-00007, issued on July 7, 2001, and the other applicable requirements not revised or deleted from SSM 173-15661-00007, issued on August 27, 2003. Therefore, this modification has superseded both of these modifications.
- (e) Stack testing is required for the green anode baking ring furnace, equipped with an A-446 pollution control system, comprised of baghouses and dry alumina scrubbers, to verify that all emission limits are complied with when operating only two (2) of the three (3) reactor sections of A-446 pollution control system.

- (f) Stack testing is required for the dross cooling operation, equipped with two (2) large baghouses and two (2) small baghouses, to verify that all emission limits are complied with when operating only one (1) large baghouse and only one (1) small baghouse.
- (g) Stack testing is required for the pitch fume treatment system, equipped with a pitch fume pollution control system with each system consisting of one (1) baghouse and one (1) dry scrubber, to verify that all emission limits are complied with when operating the pitch fume pollution control system.
- (h) Stack testing is required for the anode butt blast machine, equipped with a baghouse, to verify that all emission limits are complied with when operating the anode butt blast machine baghouse.
- (i) Additional emergency provisions have been added to this modification to include the requirements of PC (87) 1840, issued on February 26, 1990, for the use of a diesel fired emergency bypass engine to bypass the A-446 dry alumina scrubber stacks when an emergency occurs.

The Significant Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3).

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 call (800) 451-6027, press 0 and ask for Michael S. Schaffer, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395, ext. 15 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 SIGNIFICANT SOURCE MODIFICATION OFFICE OF AIR QUALITY

Alcoa, Inc. - Warrick Operations Junction IN 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.: 173-17780-00007	
Issued by: Original Signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: July 21, 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 primary aluminum reduction source.

Responsible Official:	Vice President & General Manager
Source Address:	Junction IN 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 - 1519
SIC Code:	3334
County Location:	Warrick
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD 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 operate the following emission units and pollution control devices:

- (a) One (1) above-ground, natural gas-fired, green anode baking ring furnace, known as Bldg. 295 Anode Baking Ring Furnace, equipped with an A-446 pollution control system consisting of three (3) reactor sections with a baghouse for PM and PM₁₀ control and dry alumina scrubber for TF and SO₂ control which operate at a minimum of two (2) reactor sections at any one (1) time, exhausting through Stacks 265D.1, 265D.2, 265D.3, 265D.4, 265D.5, 265D.6, 265D.8, and 265J.1 (which is the diesel-fired emergency bypass engine stack used for venting ring furnace exhaust gases during emergency periods of unexpected loss of power to the A-446 dry scrubber fans), capacity: 21.42 tons of green anodes per hour.
- (b) One (1) diesel-fired emergency bypass engine, consisting of an emergency bypass stack with a bypass duct and emergency bypass fan, heat output capacity: 200 horsepower.
- (c) One (1) dross cooling operation, equipped with two (2) small baghouses, identified as Baghouses #1 and #2, and two (2) large baghouses, identified as Baghouses #3 and #4 for PM, PM₁₀, and lead control, capacity: 66.0 tons per hour.
- (d) One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) baghouses for PM, PM₁₀, and VOC control, capacity: 52.5 tons of green anodes per hour.
- (e) One (1) mechanical blasting operation, identified as Anode Butt Blast Machine #1, equipped with one (1) baghouse for PM and PM₁₀ control, exhausting to Stack 132.9, capacity: 242,000 pounds of steel per hour.

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.

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

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using ambient air quality modeling pursuant to 326 IAC 1-7-4.

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

C.8 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 not 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 not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

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

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

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

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be

accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.

- (b) Whenever a condition in this permit requires the measurement of a flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (c) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

The requirements of this condition shall supersede the requirements of Condition C.10 of SSM 173-14145-00007, issued on July 7, 2001.

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

C.13 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. If a Permittee is required to have a Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan) under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
 - (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
 - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

The Parametric Monitoring and SSM Plan shall be submitted within the time frames specified by the applicable 40 CFR 60/63 requirement.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan or Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.

- (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be ten (10) days or more until the unit or device will be shut down, then the Permittee shall promptly notify IDEM, OAQ of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall constitute a violation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
- (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B - Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.14 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 require-

ments 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.15 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.16 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.17 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)]: Green anode baking ring furnace, emergency bypass engine, dross cooling operation, pitch fume treatment system, and anode butt blast machine

- (a) One (1) above-ground, natural gas-fired, green anode baking ring furnace, known as Bldg. 295 Anode Baking Ring Furnace, equipped with an A-446 pollution control system consisting of three (3) reactor sections with a baghouse for PM and PM₁₀ control and dry alumina scrubber for TF and SO₂ control which operate at a minimum of two (2) reactor sections at any one (1) time, exhausting through Stacks 265D.1, 265D.2, 265D.3, 265D.4, 265D.5, 265D.6, 265D.8, and 265J.1 (which is the diesel-fired emergency bypass engine stack used for venting ring furnace exhaust gases during emergency periods of unexpected loss of power to the A-446 dry scrubber fans), capacity: 21.42 tons of green anodes per hour.
- (b) One (1) diesel-fired emergency bypass engine, consisting of an emergency bypass stack with a bypass duct and emergency bypass fan, heat output capacity: 200 horsepower.
- (c) One (1) dross cooling operation, equipped with two (2) small baghouses, identified as Baghouses #1 and #2, and two (2) large baghouses, identified as Baghouses #3 and #4 for PM, PM₁₀, and lead control, capacity: 66.0 tons per hour.
- (d) One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) baghouses for PM, PM₁₀, and VOC control, capacity: 52.5 tons of green anodes per hour.
- (e) One (1) mechanical blasting operation, identified as Anode Butt Blast Machine #1, equipped with one (1) baghouse for PM and PM₁₀ control, exhausting to Stack 132.9, capacity: 242,000 pounds of steel per hour.

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

D.1.1 General Provisions Relating to HAPs [326 IAC 20-1-1] [40 CFR Part 63, Subpart A]

The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the one (1) green anode baking ring furnace described in this section except when otherwise specified in 40 CFR 63 Subpart LL.

D.1.2 Existing Anode Baking Furnace Emission Limits [326 IAC 20-24-1] [40 CFR Part 63.843(c), Subpart LL]

Pursuant to 40 CFR 63.843(c), the Permittee shall not discharge or cause to be discharged into the atmosphere any emissions of total fluorides (TF) or polycyclic organic matter (POM) in excess of the following limits:

- (a) Emissions of TF shall not exceed 0.20 pounds per ton of green anode; and
- (b) Emissions of POM shall not exceed 0.18 pounds per ton of green anode.

Pursuant to 40 CFR 60.190(c), the emission limits also satisfy the requirements of 40 CFR 60 Subpart S.

D.1.3 Prevention of Significant Deterioration [326 IAC 2-2]

- (a) The following limits shall apply to the green anode baking ring furnace:

- (1) The input of green anodes to the green anode baking ring furnace shall be limited to 187,645 tons per twelve (12) consecutive month period with compliance deter-

mined at the end of each month.

- (2) The emission rate of PM shall not exceed 0.676 pounds of PM per ton of green anode;
 - (3) The emission rate of PM₁₀ shall not exceed 3.92 pounds of PM₁₀ per ton of green anode;
 - (4) The emission rate of SO₂ shall not exceed 1.11 pounds of SO₂ per ton of green anode; and
 - (5) The emission rate of CO shall not exceed 3.57 pounds of CO per ton of green anode.
 - (6) Any change or modification that increases net lead emissions of this modification to greater than PSD Significant levels, shall require prior IDEM, OAQ, approval.
- (b) The following limits shall apply to the dross cooling operation:
- (1) The throughput of dross through the dross cooling operation shall be limited to 38,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (2) The emission rate of PM shall not exceed 0.440 pounds of PM per ton of dross throughput; and
 - (3) The emission rate of PM₁₀ shall not exceed 0.454 pounds per ton of dross throughput.
- (c) The following limits shall apply to the pitch fume treatment system:
- (1) The emission rate of PM shall not exceed 0.070 pounds of PM per ton of green anode;
 - (2) The emission rate of PM₁₀ shall not exceed 0.050 pounds PM₁₀ per ton of green anode; and
 - (3) The emission rate of VOC shall not exceed 0.030 pounds of VOC per ton of green anode.
- (d) The following limits shall apply to the anode butt blast machine:
- (1) The PM emission rate shall not exceed 1.029 pounds per hour, equivalent to 0.01 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute.
 - (2) The PM₁₀ emission rate shall not exceed 0.857 pounds per hour, equivalent to 0.0083 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute.

The throughput limits in Conditions D.1.3(a)(1) and (b)(1) in combination with the emission limits specified by Conditions D.1.3(a)(2) through (5), (b)(2) and (3), as well as (c) and (d), render the requirements of 326 IAC 2-2 not applicable to the green anode baking ring furnace.

The requirements of this condition shall supersede the requirements of Condition D.1.2 of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.3 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.4 Additional Emergency Provisions

Pursuant to Operation Condition 4 of PC (87) 1840, issued on February 26, 1990:

- (a) The Permittee shall only operate the emergency bypass engine during emergency periods of unexpected loss of power to the A-446 dry scrubber fans or for short periods during readiness testing.
- (b) The emergency bypass engine shall be limited to 300 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

D.1.5 Particulate Matter (PM) [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable PM emission rate for the one (1) green anode baking ring furnace shall not exceed 31.95 pounds per hour, total when operating at a process weight rate of 21.42 tons per hour. The allowable PM emission rate was calculated with the following equation.

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

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

- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable PM emission rate from:
 - (1) The one (1) dross cooling operations shall not exceed 47.2 pounds per hour when operating at a process weight rate of 66.0 tons per hour.
 - (2) The one (1) pitch fume treatment system shall not exceed 45.0 pounds per hour when operating at a process weight rate of 52.5 tons of green anodes per hour.
 - (3) The one (1) anode butt blast machine shall not exceed 54.9 pounds per hour when operating at a process weight rate of 142.42 tons (121 tons of steel and 21.42 tons of green anodes) per hour.

These allowable PM emission rates were calculated with the following equation.

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The requirements of this condition shall supersede the requirements of Condition D.1.1 of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.5 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.6 Control Technology Review; Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (BACT) and Conditions 9 and 10 of 87-08-91-0111, issued November 4, 1989:

- (a) Sulfur dioxide emissions from the A446 dry alumina scrubber shall be limited to 1.13 tons per day, and 35 tons per month, and 412 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) ALCOA shall use the lowest sulfur content coal tar pitch commercially available. This shall be limited to a maximum, of 0.80% sulfur.
 - (1) Should pitch with a sulfur content of 0.80% become unavailable and the monthly average pitch sulfur content exceed this limit, then ALCOA shall have thirty (30) days from the end of the month in violation to provide to the OAQ documentation that lower sulfur pitch is not available and documentation for a new proposed pitch sulfur content BACT limit. The BACT limit in (a) above shall remain in effect until such time as the Commissioner approves a revised pitch sulfur content BACT limit. However, enforcement action will not be taken until such time as ALCOA has been given the opportunity to support, request and obtain approval for a revised BACT limit as described above. Testing to establish a new A446 inlet SO₂ emission rate, similar to that described below, will be required as part of any revised BACT limit approval.
 - (2) If the monthly average sulfur content of the pitch used in the anodes exceeds 0.75% for any calendar month, then ALCOA shall report this to OAQ within thirty (30) days. This notification shall include a discussion of the reason the pitch sulfur content has increased and whether ALCOA has been able, or will be able, to obtain pitch with sulfur content below 0.75%. If pitch with a sulfur content of less than 0.75% is not available, then ALCOA shall submit documentation of this and, within ninety (90) days of the notification, conduct an A446 dry scrubber SO₂ inlet (ring furnace outlet) test to reestablish the SO₂ inlet emission rate pursuant to 326 IAC 7-4-10(a)(4)(H), previously established in Condition No. 8 of 87-08-91-0111, issued November 4, 1989. This test shall be conducted pursuant to 326 IAC 3-2 at the current maximum achievable anode production rate and the result will be used to determine compliance.

D.1.7 Warrick County Sulfur Dioxide Emission Limitations [326 IAC 7-4-10]

Pursuant to 326 IAC 7-4-10(a)(4)(H), the sulfur dioxide emissions from the green anode baking ring furnace shall not exceed 94.1 pounds per hour and 412 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

D.1.8 Natural Gas Usage Limitation

Pursuant to Condition 17 of 87-08-91-0111, issued November 4, 1989, natural gas throughput to the green anode baking ring furnace shall be limited to 75 million cubic feet per month and 600 million cubic feet per twelve (12) consecutive month period with compliance determined at the end of each month.

D.1.9 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

Compliance Determination Requirements

D.1.10 TF and POM Testing Requirements [326 IAC 20-24-1] [40 CFR Part 63, Subpart LL]

- (a) Pursuant to 40 CFR 63.847(d)(4), the Permittee shall conduct an initial performance test for the green anode baking ring furnace within 180 days after initial startup and all subsequent performance tests for the green anode baking ring furnace in accordance with the requirements of the general provisions in 40 CFR 63 Subpart A of this part, the approved test plan, and the procedures in Condition D.1.10(b).

- (b) Pursuant to 40 CFR 63.849(a), the Permittee shall use the following reference methods to determine compliance with the applicable emission limits for TF and POM emissions:

Method 13A or Method 13B in Appendix A to Part 60 of 40 CFR or an approved alternative, for the concentration of TF where stack or duct emissions are sampled.

- (c) In order to demonstrate compliance with Condition D.1.2, the Permittee shall measure and record the emission rate of TF and POM from the green anode baking ring furnace exiting the exhaust stacks of the A-446 pollution control system.

D.1.11 Anode Bake Furnace Compliance Determination [326 IAC 20-24-1] [40 CFR Part 63, Subpart LL]

The Permittee shall determine compliance with the applicable TF and POM emission limits using the following equations and procedures:

- (a) Compute the emission rate (Eb) of TF from the anode bake furnace the following equation,

$$Eb = \frac{(Cs \times Qsd)}{(Pb \times K)}$$

Eb = emission rate of TF, kg/Mg (lb/ton) of green anodes produced
Cs = concentration of TF, Mg/dscm (Mg/dscf)
Qsd = volumetric flow rate of effluent gas (dscf/hr)
Pb = quantity of green anode material placed in furnace, Mg/hr (ton/hr); and
K = conversion factor, 10⁶ Mg/kg (453,600)

- (b) Compute the emission rate of POM from the anode bake furnace using the equation above,

Where:

Eb = emission rate of POM, kg/Mg (lb/ton) of green anodes produced and
Cs = concentration of POM, Mg/dscm (Mg/dscf)

D.1.12 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

- (a) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Conditions D.1.3(a)(2) and (3) the Permittee shall perform PM and PM₁₀ testing for the green anode baking ring furnace, utilizing methods as approved by the Commissioner. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing. During the stack test, the Permittee shall determine the sensitivity of the bag leak detection system and calibrate the particulate concentration readings of the electrodynamic bag leak detector in order to provide an output relative to outlet grain loading levels.
- (b) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Condition D.1.3(a)(4) the Permittee shall perform SO₂ testing for the green anode baking ring furnace, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C- Performance Testing.
- (c) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Condition D.1.3(b)(3) the Permittee shall perform PM₁₀ testing for the dross cooling operation while operating with one (1) large baghouse and one (1) small baghouse, utilizing methods as approved by the Commissioner. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing. During the stack test, the Permittee shall determine the sensitivity of the bag leak detection system and calibrate the particulate concentration readings of the electrodynamic

bag leak detector in order to provide an output relative to outlet grain loading levels.

- (d) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Conditions D.1.3(c)(2) and (d)(2), the Permittee shall perform PM₁₀ testing for the pitch fume treatment system and the anode butt blast machine, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing. During the stack test, the Permittee shall determine the sensitivity of the bag leak detection system and calibrate the particulate concentration readings of the electrodynamic bag leak detector in order to provide an output relative to outlet grain loading levels.

The requirements of this condition shall supersede the requirements of Condition D.1.12 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.13 Particulate Matter (PM) and Particulate Matter Less than Ten Microns (PM₁₀)

- (a) In order to comply with Conditions D.1.3(a)(2) and (3) as well as Condition D.1.5(a), at least (2) reactor sections of the A-446 pollution control system shall be in operation at all times when the green anode baking ring furnace is in operation.
- (b) In order to comply with Conditions D.1.3(c)(1) and (2), (d)(1) and (2), as well as Conditions D.1.5(b)(2) and (b)(3), the baghouses for PM and PM₁₀ control shall be in operation at all times when the pitch fume treatment system and the anode butt blast machine is are in operation.
- (c) In order to comply with Conditions D.1.3(b)(2) and (3) as well as Condition D.1.5(b)(1), at least one (1) small baghouse and one (1) large baghouse controlling PM and PM₁₀ shall be in operation at all times when the dross cooling process is in operation.

When the dross cooling process is only operating one (1) small baghouse and one (1) large baghouse, in order to comply with Conditions D.1.3(b)(2) and (3) as well as Condition D.1.5(b)(1), all roll-up doors in the dross cooling building shall be closed, except when vehicles are entering or exiting the building.

The requirements of this condition shall supersede the requirements of Condition D.1.13 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.14 TF and SO₂

In order to comply with Conditions D.1.2(a), D.1.3(a)(4), and D.1.6, at least two (2) of the three (3) A-446 pollution control system reactor sections for TF and SO₂ control shall be in operation at all times when the green anode baking ring furnace is in operation.

The requirements of this condition shall supersede the requirements of Condition D.1.14 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.15 Sulfur Dioxide [326 IAC 2-2-3] [326 IAC 7-4-10(a)(4)]

In order to comply with Conditions D.1.6 and D.1.7, the Permittee shall utilize the following methods and/or calculations:

- (a) Compliance with the pounds per hour limitations specified in 326 IAC 7-4-10(a)(4) shall be based on a stack test pursuant to 326 IAC 7-2-1(b).
- (b) Compliance with the tons per year limitations specified in 326 IAC 7-4-10(a)(4) shall be based on a rolling twelve (12) consecutive month emission total. Monthly sulfur dioxide emissions

shall be determined from calendar month material balances using actual average sulfur content and material throughput.

- (c) Pursuant to Condition 11 of 87-08-91-0111, issued November 4, 1989, during a period when compliance data is not available, compliance shall be determined from the tested SO₂ evolution (A446 inlet) emission factor of 3.69 pounds of SO₂ per ton of baked carbon and the estimated A446 dry alumina scrubber SO₂ removal efficiency based on the A446 feed rate.
 - (1) Daily records shall be used to calculate the average tons per hour baked carbon production rate and the average pounds per hour per reactor alumina feed rate for each day.
 - (2) The daily average pounds per reactor alumina feed rate shall be used to determine the daily average percent SO₂ removal.
 - (3) The daily percent removal shall be used, with the SO₂ evolution emission factor and the average production rate, to calculate the pounds per hour and pounds per ton of baked carbon daily average SO₂ emission rates.
- (d) Pursuant to Condition 12 of 87-08-91-0111, issued November 4, 1989, compliance shall be determined based on the daily SO₂ emission rates.
 - (1) The daily SO₂ emission rates shall be calculated by multiplying the daily average pounds of SO₂ per ton of baked carbon (as determined by Condition D.1.15(c)) times the daily baked carbon production to calculate the pounds per day SO₂ emission rates.
 - (2) The daily SO₂ emission rates shall then be summed to calculate the tons per month and the tons per twelve (12) consecutive month period SO₂ emission rates.

D.1.16 Emergency Bypass Engine Operation

In order to document compliance with Condition D.1.4, the following requirements shall apply to operation of the emergency bypass engine:

- (a) Pursuant to Operation Condition 3 of PC (87) 1840, issued on February 26, 1990, the emergency bypass engine shall be operated in accordance with manufacturer's specifications.
- (b) Pursuant to Operation Condition 4 of PC (87) 1840, issued on February 26, 1990, the A-446 dry alumina scrubbers shall only be bypassed and untreated ring furnace flue gas vented through the emergency bypass stack during emergency periods and not during weekly readiness testing periods.

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

D.1.17 Emissions Monitoring Requirements [326 IAC 20-24-1] [40 CFR Part 63.848, Subpart LL]

The following applies to the A-446 pollution control system operating in the one (1) green anode baking ring furnace:

- (a) Pursuant to 40 CFR 63.848(c), using the procedures in Sec. 63.847 and in the approved test plan, the Permittee shall monitor TF and POM emissions from the anode bake furnace on an annual basis. The Permittee shall compute and record the annual average of TF and POM emissions from at least three (3) runs to determine compliance with the applicable emission limits. The Permittee must include all valid runs in the annual average.

- (b) Pursuant to 40 CFR 63.848(f), the Permittee shall install, operate, calibrate, and maintain a continuous parameter monitoring system for the A-446 pollution control system. The Permittee shall install monitoring devices for the measurement of alumina flow and air flow for the dry alumina scrubber.
- (c) Pursuant to 40 CFR 63.848(f), Alcoa, Inc. - Warrick Operations submitted their compliance monitoring plan on April 23, 1999 and amended their compliance monitoring plan on December 5, 2003.
- (d) Pursuant to 40 CFR 63.848(g), the Permittee shall visually inspect the exhaust stacks of the A-446 pollution control system on a daily basis for evidence of any visible emissions indicating abnormal operation.
- (e) Pursuant to 40 CFR 63.848(f), if a monitoring device for the A-446 pollution control system measures an operating parameter outside the limits established pursuant to Sec. 63.847(h), if visible emissions indicating abnormal operation are observed from the exhaust stacks of the A-446 pollution control system during a daily inspection, the Permittee shall initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan within one (1) hour. Failure to initiate the corrective action procedures within one (1) hour or to take the necessary corrective actions to remedy the problem is a violation.
- (f) Pursuant to 40 CFR 63.848(j), the Permittee of an existing anode bake furnace shall install, operate, and maintain a monitoring device to determine the daily weight of aluminum produced and the weight of green anode material placed in the anode bake furnace. The weight of green anode material may be determined by monitoring the weight of all anodes or by monitoring the number of anodes placed in the furnace and determining an average weight from measurements of a representative sample of anodes.
- (g) Pursuant to 40 CFR 60.848(k), the Permittee shall submit recommended accuracy requirements to IDEM, OAQ, for review and approval. All monitoring devices required by this section must be certified by the Permittee to meet the accuracy requirements and must be calibrated in accordance with the manufacturer's instructions.
- (h) Pursuant to 40 CFR 60.848(l), the Permittee may monitor alternative A-446 pollution control system operating parameters subject to prior written approval by IDEM, OAQ.

The requirements of this condition shall supersede the requirements of Condition D.1.16 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.18 Bag Leak Detection System

The Permittee shall install and operate a continuous bag leak detection system for each baghouse of the A-446 pollution control system for the green anode baking ring furnace, the dross cooling room, the pitch fume treatment system, and the anode butt blast machine. The bag leak detection system shall meet the following requirements:

- (a) Each electrodynamic bag leak detection system shall be installed, calibrated, operated, and maintained according to the "Fabric Filter Bag Leak Detection Guidance," (September 1997).
- (b) The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of ten (10) milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
- (c) The bag leak detection system sensor shall provide output of relative or absolute PM loadings.

- (d) The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor.
- (e) The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel.
- (f) For negative pressure or induced air fabric filters, the bag leak detector shall be installed downstream of the fabric filter.
- (g) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
- (h) The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
- (i) Following initial adjustment of the system, the Permittee shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the Compliance Response Plan. In no case may the sensitivity be increased by more than one hundred (100%) percent or decreased more than fifty (50%) percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.
- (j) In the event that a bag leak detection system should malfunction, fail or otherwise need repair, the Permittee shall perform visible emissions notations of the stack exhausts associated with that bag leak detection system as follows:
 - (1) Visible emission notations of the stack exhausts shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
 - (2) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
 - (3) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
 - (4) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
 - (5) The Parametric Monitoring and Start-up Shutdown Malfunction Plan for the green anode baking ring furnace and the pitch fume treatment system as well as the Compliance Response Plan for the anode butt blast machine and the dross cooling operation shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

The requirements of this condition shall supersede the requirements of Conditions D.1.5, D.1.6, and D.1.7, of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.17 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.19 Bag Leak Detection Alarm Activation

In the event that a bag leak detection system alarm is activated for any reason, the same corrective actions specified in the CRP for use during periods of startup, shutdown, and malfunction, shall be followed to correct the cause for the alarm, regardless of whether the alarm is caused by a malfunction as defined, the Permittee shall take the following response steps:

- (a) For the ring furnace A-446 pollution control system and the pitch fume treatment pollution control system, which are multi-reactor units, corrective actions shall be initiated in accordance with the CRP (SSM and Parametric Monitoring) plan within one (1) hour. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
 - (1) If operations continue at the green anode baking ring furnace after bag failure is observed and two (2) of the three (3) reactor sections of the A-446 pollution control system have been in operation, the failure shall be addressed by shutting down the reactor section that the failure has occurred at and starting up the reactor section that is not in operation. If it will be ten (10) days or more after the failure, is observed before the failed reactor section will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date that the failed reactor section will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
 - (2) If operations continue at the baghouse portion of the pitch fume treatment system after bag failure is observed, the failure shall be addressed by conducting visible emissions notations once per day or by calculating daily particulate concentrations. If it will be ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
- (b) For the four (4) dross cooling operation baghouses which are single compartment baghouses, when more than one (1) large baghouse fails or when more than two (2) of the four (4) baghouses fail, if failure is indicated by an opacity violation or a bag leak detection alarm activation that is not a false alarm, or if bag failure is determined by other means, such as daily checks of the particulate concentration readings from electrodynamic bag leak detectors or visible emissions notations, then the associated process will be shut down immediately until a sufficient number of failed units have been brought back on-line to meet the minimum operating criteria specified by the Compliance Response Plan. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).
- (c) For the anode butt blast machine baghouse which is a single compartment baghouse, if failure is indicated by an opacity violation or a bag leak detection alarm activation that is not a false alarm, or if bag failure is determined by other means, such as daily checks of the particulate concentration readings from electrodynamic bag leak detectors or visible emissions notations, then the associated process will be shut down immediately until the

failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

The requirements of this condition shall supersede the requirements of Conditions D.1.8 and D.1.9 of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.19 of SSM 173-15661-00007, issued on August 23, 2002.

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

D.1.20 Anode Baking Furnace Record Keeping and Reporting Requirements [326 IAC 20-24-1][40 CFR Part 63, Subpart LL]

Pursuant to 40 CFR 63.850(e), the Permittee shall maintain files of all information (including all reports and notifications) required by Sec. 63.10(b) and by 40 CFR 63 Subpart LL.

In addition to the general records required by Sec. 63.10(b), the Permittee shall maintain records of the following information:

- (a) Daily production rate of green anode material placed in the anode bake furnace;
- (b) A copy of the startup, shutdown, and malfunction plan;
- (c) Records, such as a checklist or the equivalent, demonstrating that the daily visual inspection of the exhaust stacks of the A-446 pollution control system has been performed as required in Sec. 63.848(g), including the results of each inspection;
- (d) Records documenting the corrective actions taken when the limits for an operating parameter established under Sec. 63.847(h) were exceeded, when visible emissions indicating abnormal operation were observed from the A-446 pollution control system stacks during a daily inspection required under Sec. 63.848(g).

D.1.21 Record Keeping Requirements

- (a) To document compliance with Condition D.1.3(a)(1), the Permittee shall maintain monthly records of the throughput of green anodes to the green anode baking ring furnace.
- (b) To document compliance with Condition D.1.3(b)(1), the Permittee shall maintain monthly records of the throughput of the cross cooling operation.
- (c) To document compliance with Condition D.1.4, the Permittee shall maintain the following:
 - (1) A log of all periods of operation of the emergency bypass fan diesel engine. This log shall include the following:
 - (A) The date,
 - (B) The times for start and end of operation,
 - (C) The reason for the operation (i.e., readiness testing or description of emergency situation), and
 - (D) Whether the untreated ring furnace flue gas was being vented thru the emergency bypass stack.
 - (2) The log shall also show the total hours of operation for each calendar month and for the most recent twelve (12) month period. This record shall be maintained for at

least the most recent twenty-four (24) month period.

- (3) Any time that the emergency bypass engine and fan are operating and venting untreated ring furnace flue gas for more than one (1) hour, this shall be reported in accordance with Section C - Emergency Provisions.
- (d) To document compliance with Conditions D.1.6 and D.1.15:
 - (1) Records of the A446 outlet SO₂ emission rates and of the dry alumina scrubber operations shall be maintained for the most recent twenty-four (24) month period and made available to the OAQ upon request.

Records of the dry alumina scrubber operations shall include the following:

 - (A) An estimate of the daily average alumina feed rates in pounds per hour per reactor; and
 - (B) The time periods when any of the reactors are out of service and summary of all maintenance (routine, preventative or malfunction related) performed on the A446 system.
 - (2) Records of pitch sulfur content based on vendor analysis shall be maintained for the most recent twenty-four (24) month period and made available to the OAQ upon request.
- (e) To document compliance with Condition D.1.7, the Permittee shall maintain calendar month material balances using actual average sulfur content and material throughput.
- (f) To document compliance with Condition D.1.8, records of the monthly ring furnace natural gas throughput shall be maintained for the most recent twenty-four (24) month period and made available to the OAQ upon request.
- (g) To document compliance with Condition D.1.18(j), the Permittee shall maintain records of visible emission notations of the green anode baking ring furnace, dross cooling operation, pitch fume treatment system, and anode butt blast machine baghouse stack exhausts once per day when the applicable bag leak detection system malfunctions, fails or otherwise needs repair.
- (h) To document compliance with Condition D.1.19, the Permittee shall maintain records of the occurrences of all bag leak detection alarms and the response steps.
- (i) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.22 Reporting Requirements

- (a) A quarterly summary of the information to document compliance with Conditions D.1.3(a)(1) and (b)(1), D.1.4(b), D.1.6 through D.1.8 and D.1.15 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).
- (b) Pursuant to 40 CFR Part 63.10(e)(3), the Permittee shall submit a report, or summary report, if measured emissions are in excess of the applicable standard. The report shall contain the information specified in 40 CFR Part 63.10(e)(3)(v) and be submitted semiannually unless quarterly reports are required as a result of excess emissions. The report shall be submitted

to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the semi-annual or if necessary 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: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-17780-00007

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: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Green anode baking ring furnace
 Parameter: Throughput of green anodes
 Limit: 187,645 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Green anodes (tons)	Green anodes (tons)	Green anodes (tons)
	This Month	Previous 11 Months	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
 COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Green anode baking ring furnace dry scrubber
 Parameter: Sulfur Dioxide Emissions
 Limit: 35 tons per month and 412 tons per twelve (12) consecutive month period with compliance determined at the end of each month. Monthly sulfur dioxide emissions shall be determined from calendar month material balances using actual average sulfur content and material throughput.

YEAR: _____

Month	Sulfur Dioxide Emissions (tons)	Sulfur Dioxide Emissions (tons)	Sulfur Dioxide Emissions (tons)
	This Month	Previous 11 Months	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
 COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Dross cooling operation
 Parameter: Throughput
 Limit: 38,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Dross Throughput (tons)	Dross Throughput (tons)	Dross Throughput (tons)
	This Month	Previous 11 Months	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
 COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Ring Furnace Emergency Bypass Engine
 Parameter: Hours of Operation
 Limit: 300 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Hours of Operation	Hours of Operation	Hours of Operation
	This Month	Previous 11 Months	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
 COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Green anode baking ring furnace
 Parameter: Natural gas throughput
 Limit: 75 million cubic feet per month and 600 million cubic feet per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Natural Gas Usage (million cubic feet)	Natural Gas Usage (million cubic feet)	Natural Gas Usage (million cubic feet)
	This Month	Previous 11 Months	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
 COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Green anode baking ring furnace dry scrubber
 Parameter: Maximum monthly calculated pounds of SO₂ per ton of baked carbon and the monthly average percentage sulfur of pitch used in anodes
 Limit: 3.69 pounds of SO₂ per ton of baked carbon and 0.80% Sulfur

YEAR: _____

Month	Maximum calculated pounds of SO ₂ per ton of baked Carbon	Average % S of pitch used in anodes

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
 COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Alcoa, Inc. - Warrick Operations
 Source Address: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
 Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
 Source Modification No.: SSM 173-17780-00007
 Facility: Green anode baking ring furnace dry scrubber
 Parameter: Maximum calculated daily average pounds of SO₂ per hour, lowest and highest daily average alumina feed rate and the maximum average baked carbon production and associated aluminum feed rate.

Year: _____

Parameter	First month of the quarter	Second month of the quarter	Third month of the quarter
Maximum calculated daily average lbs SO ₂ per hour (lbs/hr)			
Lowest daily average alumina feed rate (lbs/hr/reactor)			
Highest daily average alumina feed rate (lbs/hr/reactor)			
Maximum daily average baked carbon production rate (tons/hr)			
Daily average alumina feed rate on the day when the maximum daily average carbon production rate was attained(lbs/hr/reactor)			

☐ No deviation occurred in this month.

☐ 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**

Addendum to the Technical Support Document for a
Significant Source Modification to a Part 70 Operating Permit

Source Name:	Alcoa, Inc. - Warrick Operations
Source Location:	Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
County:	Warrick
SIC Code:	3334
Operation Permit No.:	T 173-6627-00007
Significant Source Modification No.:	SSM 173-17780-00007
Permit Reviewer:	Michael S. Schaffer

On April 30, 2004, the Office of Air Quality (OAQ) had a notice published in the Booneville Standard, located in Booneville, Indiana, stating that Alcoa, Inc. - Warrick Operations had applied for a Significant Source Modification to a Part 70 Operating Permit to change the capacity of the rebuilt green anode baking ring furnace. The notice also stated that OAQ proposed to issue a Significant Source Modification and provided information on how the public could review the proposed Significant Source Modification and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this Significant Source Modification to a Part 70 Operating Permit should be issued as proposed.

On May 12, 2004, Mr. Samuel Bruntz of Alcoa, Inc. - Warrick Operations submitted comments on the proposed Significant Source Modification to a Part 70 Operating Permit. The comments are as follows: The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

Amendments to Conditions A.2(d), D.1.(d), and D.1.5(b)(2) - The informational capacity of the pitch fume treatment system, as listed in Conditions A.2(d) and D.1.(d) is that provided in the application, i.e. 45 tons/hr. However, during a review of a draft Title V permit, it was determined that there may be occasions when it may be necessary to produce up to 52.5 tons /hr. of green anodes to make up for extended downtime periods. Thus, while continuing to accept the annual green anode production limitation of 187,645 tons, as specified by Condition D.1.3(a)(1), Alcoa herein requests that the maximum hourly capacity be amended from 45 to 52.5 tons/hr. in Conditions A.2(d) and D.1.(d). With that change, Alcoa also requests that Condition D.1.5(b)(2) be amended as follows:

“The one (1) pitch fume treatment system shall not exceed 45.0 pounds per hour when operating at a process weight rate of 52.5 tons of green anodes per hour.”

Response 1:

As a result of the indicated changes in the comment above, paragraph (d) in Condition A.2 and the equipment description box in Section D.1 as well as Condition D.1.5(b)(2) have been revised as follows:

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 operate the following emission units and pollution control devices:

- (d) One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) bag-

houses for PM, PM₁₀, and VOC control, capacity: ~~45.0~~ **52.5** tons of green anodes per hour.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Green anode baking ring furnace, emergency bypass engine, dross cooling operation, pitch fume treatment system, and anode butt blast machine

- (d) One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) baghouses for PM, PM₁₀, and VOC control, capacity: ~~45.0~~ **52.5** tons of green anodes per hour.

D.1.5 Particulate Matter (PM) [326 IAC 6-3-2]

- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable PM emission rate from:
- (2) The one (1) pitch fume treatment system shall not exceed ~~43.6~~ **45.0** pounds per hour when operating at a process weight rate of ~~45.0~~ **52.5** tons of green anodes per hour.

Comment 2:

Amendment of Condition D.1.18(j) - This condition, as drafted, would require that Alcoa prepare a separate Compliance Response Plan for the ring furnace, in addition to the Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction plan that is required under 40 CFR 63, Subpart LL. Alcoa believes that the condition was intended to address the anode butt shot blast machine, rather than the ring furnace, since the anode butt shot blast machine is not regulated by 40 CR 63, Subpart LL. Accordingly, Alcoa requests that Condition D.1.18(j) be amended as follows:

“The Compliance Response Plan for the mechanical blasting operation, identified as Anode Butt Blast Machine #1 and the dross cooling operation shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. (The rest of the condition is acceptable).”

Response 2:

Condition C.13(a) of the proposed source modification states:

“If a Permittee is required to have a Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan) under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions.”

In SSM 173-15661-00007, issued on August 23, 2002, IDEM, OAQ, determined that Alcoa’s Parametric Monitoring Plan and SSM Plan for the green anode baking ring furnace and the pitch fume treatment system satisfies the CRP requirements. However, since the Parametric Monitoring and SSM Plan for the green anode baking ring furnace and the pitch fume treatment system satisfies the CRP requirements, those plans should contain troubleshooting contingency and response steps for when an abnormal emission is observed during visible emissions notations. Therefore, Condition D.1.18(j)(5) has been revised as follows:

D.1.18 Bag Leak Detection System

- (j) In the event that a bag leak detection system should malfunction, fail or otherwise need repair, the Permittee shall perform visible emissions notations of the stack exhausts associated with that bag leak detection system as follows:
- (5) **The Parametric Monitoring and Start-up Shutdown Malfunction Plan for the green anode baking ring furnace and the pitch fume treatment system as well as the Compliance Response Plan for the ~~green anode baking ring furnace~~ anode butt blast machine** and the dross cooling operation shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

Comment 3:

That section states that Alcoa has been operating the dross cooling operation at a maximum capacity of 66.0 tons per hour rather than the 28.2 tons per hour capacity that was permitted with in SSM 173-15661-00007 without applying for IDEM, OAQ approval.

SSM 173-15661-00007 lists a maximum capacity of 28.2 tons/hr. in two sections. i.e. Section A, and Condition D.1. Both of the referenced sections of this permit indicate that the information provided therein is informational only, and does not constitute enforceable conditions (emphasis added).

The dross cooling annual throughput limitation, dross cooling emission limitation, and requirement to operate the pollution control equipment specified by SSM 173-15661-00007 are enforceable conditions, because SSM 173-15661-00007 underwent public and EPA Region V review before it was issued, pursuant to 326 IAC 2-7-7(a).

The Enforcement Issue section, paragraph (b) alleges that the increase in unrestricted potential to emit before limits and controls as of the result of the increased capacity was greater than twenty-five (25) tons of PM and PM₁₀ per year. Because IDEM has cited the significant modification net emission increase thresholds for PM and PM₁₀ specified by 326 IAC 2-2, Alcoa refers IDEM to the definition of potential to emit specified in that regulation, i.e. "Potential to emit means the maximum capacity of a source or major modification to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on the hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or effect it would have on emissions is enforceable."

Alcoa maintains that Conditions D.1.3(f) and (g) and D.1.13(b) constitute limitations on the dross cooling potential to emit, because those conditions specify a limitation on amount of material processed and further specify that the air pollution controls must operate at all times that dross cooling operations are being performed, and that they must operate at a level of performance that will allow compliance with the emission limit specified by Condition D.1.3(g). Such conditions therefore must be included as part of the design, because they are enforceable.

Dross is a direct function of the amount of materials charged into the melting and holding furnaces. Included in the Supporting Information is an analysis of the permitted capacities of the melters and holders at the time the application for 15661 was filed. As that analysis will show, if dross were produced at a constant rate of 28.2 tons/hr. for 8760 hours per year, Alcoa would operate in violation of the permit limits for its melters and holders.

Dross throughput can only increase if furnace throughput increases. Thus, because the permits referenced in Supporting Information below are still applicable, dross throughput has not increased, and the dross cooling operation has thus not been modified.

Supporting Information For Comment 3

Dross production is the direct result of the operation of the melt furnaces and holding furnaces. Past history indicates that dross production averages 2.95% of the charge weight. Furnace charges, and resulting dross production, is limited by the amount of material that can be charged into the furnaces.

The application for 15661 was filed in 2002. Thus, 2001 will be analyzed for furnace operation and corresponding dross production, in order to demonstrate that the dross cooling operation has not been modified.

Furnace charges in 2001 were limited by a series of permits that governed furnace charges. Those permits were (and are):

- 87-07-91-0112, applicable for the #4 HDC Complex
- 87-07-91-0113, applicable for the #5 HDC Complex
- 87-07-91-0114, applicable for the #6 HDC Complex
- 87-07-91-0115, applicable for the #8 EMC Complex
- 87-07-91-0116, applicable for the #1 HDC Complex

Each of those permits contain the following common conditions:

Condition 9:

$$[(\text{HDC tons charged} \times \text{HDC PM Ef}) + (\text{EMC tons charged} \times \text{EMC PM Ef})] / 2000 \leq 292.1 \text{ tons/yr.},$$

- where:
- HDC = all furnaces that provide molten metal for the horizontal direct chill casting units
 - HDC PM Ef = A particulate emission factor established by bi-annual testing of a representative melter and holder in a HDC complex
 - EMC = all furnaces that provide molten metal for the electromagnetic casting units
 - EMC PM Ef = A particulate emission factor established by bi-annual testing of a representative melter and holder in the EMC complex

Condition 11: Alcoa shall conduct PM emissions testing every 2 years to document compliance and to establish the PM emission factors to be used in the formula specified by Condition 9. Testing shall be performed the #8 EMC Complex and a representative HDC complex.

At the time the permit application was filed for 15661, the PM Ef's had been measured to be as follows:

- EMC: 0.231 lbs./ton
- HDC: 0.506 lbs./ton

In 2001, EMC was operational throughout the year, but some of the HDC complexes were idle. 2001 EMC charges totaled 414,653 tons. This means that the EMC furnaces emitted:

$$0.231 \text{ lb./ton} \times 414,653 \text{ tons} = 95,784.84 \text{ lbs.}, \text{ or } 47.89 \text{ tons.}$$

Potential emissions for the HDC furnaces were thus:

$$292.1 - 47.89 = 244.21 \text{ tons/yr.}$$

Potential throughput for the HDC furnaces was thus:

$$(244.21 \text{ tons} \times 2000 \text{ lbs./ton}) / 0.506 \text{ lb./ton} = 965,247.35 \text{ tons}$$

Total potential furnace charges in 2001:

EMC: 414,653 tons

HDC: 965,247 tons

Total potential furnace charges: 1,379,900 tons

Potential dross production from 1,379,900 tons at 2.95% of charge weight = 40,707 tons

From the above analysis, 38,000 tons/yr. of dross agrees well with the worst case projected dross production rate of 40,707 tons.

Production of dross at the rate of 28.2 tons/hr. for 8760 hours per year would result in a dross production and cooling rate of 247,032 tons./yr. Such a dross production rate would cause substantial exceedances of the charging rates specified by some or all of the above referenced permits.

Thus, the furnace charging permit conditions limit dross throughput, and correspondingly, dross cooling potential to emit.

Response 3:

Alcoa, Inc. - Warrick Operations has sufficiently demonstrated that the increase in hourly capacity from 22.8 to 66.0 tons of dross per hour does not increase the overall unrestricted potential to emit of the dross cooling operation. As a result, the source did not need to perform a source modification in accordance with 326 IAC 2-7-10.5 to increase the dross cooling operation's hourly production capacity. Therefore, this information has been forwarded to the Office of Enforcement for further review.

Indiana Department of Environmental Management Office of Air Quality

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

Source Background and Description

Source Name:	Alcoa, Inc. - Warrick Operations
Source Location:	Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
County:	Warrick
SIC Code:	3334
Operation Permit No.:	T 173-6627-00007
Operation Permit Issuance Date:	Not Yet Issued
Significant Source Modification No.:	SSM 173-17780-00007
Permit Reviewer:	Michael S. Schaffer

The Office of Air Quality (OAQ) has reviewed a modification application from Alcoa, Inc. - Warrick Operations relating to the rebuilding of the green anode baking ring furnace to a smaller production capacity from that permitted in SSM 151-15661-00007, issued on August 23, 2002. SSM 151-15661 was appealed because the increased utilization emission limits in Condition D.1.3(h) through (aa) of that permit were required for the Green Anode Production Mill as a result of a rebuilt green anode baking ring furnace that was going to operate more efficiently from previously operations, resulting in an increased utilization of upstream and downstream emission units.

In addition to smaller production capacity, the modification application included a request to revise PM and PM₁₀ limits required in SSM 173-14145-00007, issued on July 10, 2001, which was also appealed, as well as SSM 173-15661-00007, for the Anode Butt Blast Machine and revise the PSD netting analysis to include contemporaneous increases not previously included in the application for SSM 173-15661-00007, submitted on May 17, 2002.

The following equipment is involved in this modification (changes to any permitted equipment appear as ~~strikeouts~~, new language appears in **bold** using the equipment list from SSM 173-15661). The diesel-fired emergency bypass engine was permitted to operate by PC (87) 1840, issued on February 26, 1990 and the pitch fume treatment system (formerly green anode forming operations) was permitted to operate by 87-07-83-0061, issued on July 16, 1979.

- (a) One (1) above-ground, natural gas-fired, green anode baking ring furnace, known as Bldg. 295 Anode Baking Ring Furnace, equipped with an **A-446 pollution control system consisting of three (3) reactor sections with** a baghouse for particulate matter **PM and PM₁₀** control and dry alumina scrubber for TF and SO₂ control **which operate at a minimum of two (2) reactor sections at any one (1) time**, exhausting through Stacks 265D.1, 265D.2, 265D.3, 265D.4, 265D.5, 265D.6, 265D.8, and 265J.1 **(which is the diesel-fired emergency bypass engine stack used for venting ring furnace exhaust gases during emergency periods of unexpected loss of power to the A-446 dry scrubber fans)**, capacity: ~~23.15~~ **21.42** tons of green anodes per hour.
- (b) **One (1) diesel-fired emergency bypass engine, consisting of an emergency bypass stack with a bypass duct and emergency bypass fan, heat output capacity: 200**

horsepower.

- (b) **(c)** One (1) dross cooling operation, equipped with ~~four (4) baghouses~~ **two (2) small baghouses, identified as Baghouses #1 and #2, and two (2) large baghouses, identified as Baghouses #3 and #4** for PM, PM₁₀, and lead control, capacity: ~~28.2~~ **66.0** tons per hour.
- (d) **One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) baghouses for PM, PM₁₀, and VOC control, capacity: 45.0 tons of green anodes per hour.**
- (e) **One (1) mechanical blasting operation, identified as Anode Butt Blast Machine #1, equipped with one (1) baghouse for PM and PM₁₀ control, exhausting to Stack 132.9, capacity: 242,000 pounds of steel per hour.**

The following emission units will be included in the PSD netting for this modification, but will not have any applicable requirements in this modification:

- (a) One scalper step cutter, permitted by MSM 173-12886-00007, issued on February 1, 2001 and was amended by MSM 173-14944-00007, issued on December 5, 2001.
- (b) One chemical conversion coating line, identified as CPL7, installed in 1999 and was exempt from permission to construct pursuant to 326 IAC 2-1.1-3(b).
- (c) One (1) natural gas-fired air make-up unit rated at 6.88 million British thermal units per hour, located in the Green Anode Production Mill, installed in 1999, and was exempt from permission to construct pursuant to 326 IAC 2-1.1-3(b).
- (d) One (1) diesel engine powered fire suppression pump, installed in 1998 and was exempt from permission to construct pursuant to 326 IAC 2-1.1-3(b).
- (e) One (1) hot mill lubrication system, modified in 1998 with registration letter R 173-9574-00007, issued on August 6, 1998.
- (f) Three (3) natural gas fired boilers rated at 12 million British thermal units per hour each, permitted by registration letter R 173-9960-00007, issued on August 6, 1998.
- (g) One (1) lime silo, installed in 1998 and was exempt from permission to construct pursuant to 326 IAC 2-1.1-3(b).

Note these emission units will only be included in the PSD netting analysis for this modification and will not be included in this permit. Therefore, the requirements from previous approvals for these emissions units will not be superseded by this modification.

History

On March 5, 2002, Alcoa, Inc. - Warrick Operations submitted a modification application (SSM 173-15661-00007) to the OAQ to rebuild the Anode Baking Ring Furnace. Alcoa, Inc. - Warrick Operations proposed a modification to deepen the pits of the green anode baking ring furnace and decrease the maximum capacity from 245,000 tons of green anodes per year pursuant to 87-08-91-0111, issued on November 4, 1989, to 202,794 tons of green anodes per year (23.15 tons of green anodes per hour).

On August 4, 2003, Alcoa, Inc. - Warrick Operations submitted a modification application (SSM 173-17780-00007) stating that a depressed aluminum market caused Alcoa to change the rebuilt anode baking ring furnace size permitted by SSM 173-15661-00007, issued on August 23, 2002, to a maximum capacity of 187,645 tons of green anodes per year (21.42 tons of green anodes per hour). The revised maximum capacity of the rebuilt furnace is now equivalent to the 1992-1993 two (2) year average production of 187,645 tons of baked anodes per year from the Green Anode Production Mill. 1992 - 1993 represents the last two (2) years that all six (6) potlines operated at the source and was used as the baseline emissions for the increased utilization PSD netting analysis in SSM 173-15661-00007.

The rebuilt furnace is now operating such that there can no longer be increased utilization of fresh petroleum screening, the fresh petroleum coke hammermill, the fresh petroleum coke intermediate classifier, the ball mill classifier, coal tar pitch receiving, butts, pitch, and fresh coke mixing, the anode butts impactor, the anode crushed butts storage, the anode busbar cleaning and finished anode cast ironing process, since the Green Anode Production Mill will not exceed the maximum average two (2) year production capacity of 187,645 tons of green anodes per year.

However, Alcoa, Inc. - Warrick Operations must accept revised and/or added emission factor limits for the dross cooling operation, anode butt blasting operation, and the pitch fume treatment system (formerly anode forming), as well as retain the dross cooling operation throughput of 38,000 tons of dross per year, in order to justify that the modification to rebuild the green anode baking ring furnace was constructed as a minor PSD modification pursuant to 326 IAC 2-2. This justification is necessary because the net project emission increases for the green anode baking ring furnace are greater than major PSD modification thresholds and there are contemporaneous increases that were inadvertently left out of the application to SSM 173-15661-00007, submitted on March 5, 2002 which dated back five (5) years from March 5, 2002 to March 5, 1997.

Since limits for the butt blasting operation in SSM 173-15661-00007 are being revised, Alcoa, Inc. - Warrick Operations has also requested in this modification application that the permit terms for Section D.1 of SSM 173-14145-00007, issued on July 10, 2001 be reevaluated to combine limits and permit terms from SSM 173-14145 and SSM 173-15661.

As a result of Alcoa, Inc. - Warrick Operations' requests, this modification will serve as the resolution to specific issues raised in Section 6 of Cause No. 01-A-J-2768 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-14145-00007), received on July, 30 2001, and Section 6 of Cause No. 02-A-J-2948 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-15661-00007), received on September 6, 2002, without the need for an adjudicatory hearing.

This existing source submitted their Part 70 (T 173-6627-00007) application on September 19, 1996.

Note that the emission units that were modified in SSM 173-16034-00007, issued on March 28, 2003, AA 173-16991-00007, issued on January 30, 2003, and AA 173-16685-00007, issued on December 27, 2002 are not located in the Green Anode Production Mill and thus, are not affected by the proposed changes and do not affect the proposed changes.

Existing Approvals

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

- (a) Significant Source Modification 173-16034-00007, issued on March 28, 2003;
- (b) Administrative Amendment 173-16991-00007, issued on January 30, 2003;
- (c) Administrative Amendment 173-16685-00007, issued on December 27, 2002;
- (d) Significant Source Modification 173-15661-00007, issued on August 23, 2002;
- (e) Minor Source Modification 173-15352-00007, issued on April 23, 2002;
- (f) Minor Source Modification 173-14944-00007, issued on December 5, 2001;
- (g) Significant Source Modification 173-14145-00007, issued on July 7, 2001;
- (h) Minor Source Modification 173-12886-00007, issued on February 1, 2001;
- (i) Minor Permit Modification 173-12588-00007, issued on October 10, 2000;
- (j) Minor Source Modification 173-12676-00007, issued on October 2, 2000;
- (k) Minor Permit Modification 173-11419-00007, issued on June 9, 2000;
- (l) Significant Source Modification 173-11342-00007, issued on May 22, 2000;
- (m) Significant Source Modification 173-11598-00007, issued on February 3, 2000;
- (n) Administrative Amendment 173-11403-00007, issued on January 28, 2000;
- (o) CP 173-11414-00007, issued on December 15, 1999;
- (p) CP 10913-00007, issued on October 1, 1999;
- (q) Exemption 173-10598-00007, issued on September 20, 1999;
- (r) Minor Source Modification 173-10959-00007, issued on July 15, 1999;
- (s) Exemption 173-10142-00007, issued on October 28, 1998;
- (t) Registration 173-9960-00007, issued on August 6, 1998;
- (u) Registration 173-9574-00007, issued on August 6, 1998;
- (v) Exemption 173-9620-00007, issued on June 17, 1998;
- (w) Exemption 173-9644-00007, issued on May 5, 1998;
- (x) Administrative Amendment 173-8566-00007, issued on May 29, 1997;
- (y) Registration 173-8161-00007, issued on May 19, 1997;
- (z) Registration 173-8193-00007, issued on May 13, 1997;
- (aa) Administrative Amendment 173-6196-00007, issued on September 27, 1996;

- (bb) Registration 173-6325-00007, issued on August 28, 1996;
- (cc) Administrative Amendment 173-5524-00007, issued on May 6, 1996;
- (dd) Registration 173-5449-00007, issued on April 11, 1996;
- (ee) Administrative Amendment 173-4611-00007, issued on November 30, 1995; and
- (ff) CP173-4501-00007, issued on June 16, 1995.

Enforcement Issue

- (a) IDEM is aware that Alcoa, Inc. - Warrick Operations did not follow the procedures listed in Condition B.4(b) that were required in order to operate the rebuilt green anode baking ring furnace at a smaller capacity from that permitted by SSM 173-15661-00007, issued on August 23, 2002.

Condition B.4(b) of SSM 173-15661-00007 states: "If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued."

Alcoa, Inc. - Warrick Operations began operation of the smaller rebuilt furnace in June 2003.

- (b) IDEM is aware that source has been operating the one (1) dross cooling operation at a maximum capacity of 66.0 tons per hour rather than the 28.2 tons per hour capacity that was permitted with in SSM 173-15661-00007 without applying for IDEM, OAQ approval. The increase in unrestricted potential to emit before limits and controls as of the result of the increased capacity was greater than twenty-five (25) tons of PM and PM₁₀ per year.
- (c) IDEM is reviewing these matters and will take appropriate action. This proposed approval is intended to satisfy the requirements of the construction and operating permit rules.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
265D.1, 265D.2, and 265D.3	Anode Baking Ring Furnace	95 each	2.19 each	38,500 total	175 each
265D.4, 265D.5, and 265D.6	Anode Baking Ring Furnace	95 each	2.19 each	36,150 total	175 each
265D.8	Anode Baking Ring Furnace	95	3.85	32,830	172
265J.1	Anode Baking Ring Furnace Vented To Emergency Bypass Engine	105	3.83	35,000	400

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant 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 August 4, 2003. That application also contained a request to resolve issues raised in Section 6 of Cause No. 01-A-J-2768 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-14145-00007), received on July 30, 2001, and Section 6 of Cause No. 02-A-J-2948 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-15661-00007), received on September 16, 2002, through this modification. Additional information was received on August 29 and September 3, 2003.

Emission Calculations

See pages 1 through 9 of 9 of 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 of the smaller rebuilt furnace before controls reflecting the rated capacity of 21.42 tons of green anodes per hour, equivalent to 187,645 tons of green anode per year. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. Note that based on Alcoa’s latest broken bag detection calibrations PM₁₀ emissions are considered to be 5.85 times the potential to emit of PM.

Pollutant	Potential To Emit (tons/year)
PM	214.1
PM ₁₀	1,243.7
SO ₂	346.2
VOC	34.7
CO	334.4
NO _x	36.6

HAPs	Potential To Emit (tons/year)
Lead	0.544
Acetophenone	0.003

HAPs	Potential To Emit (tons/year)
Benzene	0.426
Dibenzofuran	0.002
Ethyl benzene	0.007
Formaldehyde	0.496
Naphthalene	0.843
Phenol	0.004
POM	16.9
Toluene	0.067
Xylene	0.026
TOTAL	19.3

Note that the potential to emit before controls of the dross cooling operation, pitch fume treatment system and anode butt blast machine as a result of this modification will remain unchanged and thus, have not been included in the potential to emit of this modification.

Justification for Modification

- (a) A Part 70 Significant Source Modification is proposed because the potential to emit PM, PM₁₀, CO, SO₂, NO_x, and VOC exceeds twenty five (25) tons per year and the potential to emit a single HAP (POM) is greater than ten (10) tons per year. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(4) and 326 IAC 2-7-10.5(f)(6).
- (b) The source was permitted to construct and operate a larger rebuilt furnace by SSM 173-15661-00007, issued on August 23, 2002 and thus, will be permitted to continue to operate the rebuilt furnace.

However, since the Part 70 Operating Permit for this source has not been issued yet, the intent of this Significant Source Modification is to revise the current limits, compliance determination, compliance monitoring, and recording keeping and reporting requirements to SSM 173-14145-00007, issued on July 7, 2001 and SSM 173-15661-00007, issued on August 23, 2002.

In addition, this significant source modification will revise the PSD netting from SSM 173-15661-00007 to include changes to the limited emission factors for the green anode baking ring furnace, dross cooling operation, pitch fume treatment system, and anode butt blast machine, as well as the addition of contemporaneous increases that were not included in the PSD analysis for SSM 173-15661-00007. These changes have been added to ensure that the source modification is **not** a major PSD modification pursuant to 326 IAC 2-2.

As a result, the intent of this modification is also to satisfy the requirements for a significant permit modification pursuant 326 IAC 2-7-12(d), since requirements from SSM 173-14145-00007 and SSM 173-15661-00007 are being revised in this significant source modification and the requirements of 326 IAC 2-7-12 would apply if the Part 70 Operating Permit was issued.

Note this modification will act as the appeal resolution to Section 6 of Cause No. 01-A-J-2768 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-14145-00007), received on July 30, 2001, and Section 6 of Cause No. 02-A-J-2948 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-15661-00007) received on September 16, 2002, since the intent of this source modification is to revise, combine, and/or delete the requirements in Conditions D.1.2 and D.1.5 - D.1.9 of SSM 173-14145-00007 as well as Conditions D.1.3, D.1.12 - D.1.14, and D.1.16 - D.1.20 of SSM 173-15661-00007. The conditions in this modification will supersede Conditions D.1.2 and D.1.5 - D.1.9 of SSM 173-14145-00007 as well as Conditions D.1.3, D.1.12 - D.1.14, and D.1.16 - D.1.20 of SSM 173-15661-00007.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2001 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	Greater than 250
PM ₁₀	741
SO ₂	3,384
VOC	628
CO	22,838
NO _x	248
HAP(Lead)	0.300

County Attainment Status

The source is located in Warrick County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Warrick County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) Warrick County has been classified as attainment or unclassifiable for all remaining criteria pollutants. 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 250
PM ₁₀	Greater than 250
SO ₂	Greater than 250
VOC	Greater than 250
CO	Greater than 250
NO _x	Greater than 250

This existing source is a major stationary source because an attainment regulated pollutant is 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 Annual Source Emission Statement.

Potential to Emit of Modification After Issuance

Table 1 summarizes the potential to emit, reflecting all limits, of the significant emission unit after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Table 1 Pollutant	PM (tons/yr)	PM₁₀ (tons/yr)	SO₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	Pb (tons/yr)	TF (tons/yr)	HAPs (tons/yr)
Modification to Rebuilt Furnace	63.43	368.3	103.8	34.7	334.4	36.6	0.160	3.04	18.9
Average Past Actual Emissions	60.36	352.5	64.0	27.7	260.6	29.2	0.135	0.140	–
Net Emissions	3.07	15.8	39.8	7.00	73.8	7.38	0.025	2.90	–
PSD Significant Level	25	15	40	40	100	40	0.6	3	–

The two (2) year average past actual emissions of the green anode baking ring furnace from 2000 - 2001 are calculated at the bottom of page 1 of 9 of Appendix A.

The PM₁₀ PTE after controls, including netting, is **not** less than the PSD significant levels. In SSM 151-15661-00007, the source limited the dross cooling operation PM₁₀ emissions in order to insure that the overall net emissions from that modification were less than PSD significant levels. The source has agreed to retain the throughput limit of the dross cooling operation of less than 38,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

In order to render the requirements of a major PSD modification not applicable pursuant to 326 IAC 2-2, Alcoa, Inc. - Warrick Operations has elected to retain the existing dross throughput limit of 38,000 tons of dross per twelve (12) consecutive month period with compliance determined at the end of each month. In addition, in order render the requirements of a major PSD modification not applicable, the PM and PM₁₀ emission rate limits will also be revised to 0.454 and 0.440 pounds per ton of dross throughput, respectively. The throughput limit in combination with the emission rate limits are equivalent to a limited potential to emit of 8.43 tons of PM and 8.63 tons of PM₁₀ per year.

Table 2 summarizes the potential to emit, reflecting all limits, of the dross cooling operation after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Table 2 Pollutant	PM (tons/yr)	PM₁₀ (tons/yr)	SO₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	Pb (tons/yr)	TF (tons/yr)	HAPs (tons/yr)
Dross Cooling Limited Emissions	8.45	8.65	–	–	–	–	0.000096	–	–
Average Past Actual Emissions	14.39	14.72	–	–	–	–	0.000163	–	–
Net Emissions	-5.95	-6.07	–	–	–	–	-0.000007	–	–
PSD Significant Level	25	15	40	40	100	40	0.6	3	–

The two (2) year average past actual emissions of the dross cooling operation from 2000 - 2001 are calculated at the bottom of page 2 of 9 of Appendix A.

In addition, since there have been contemporaneous increases dating back five (5) years from the submittal of the application for SSM 173-15661-00007 on March 5, 2002 which have not been previously credited, Alcoa, Inc - Warrick Operations must limit PM, PM₁₀ and/or VOC emissions from the anode butt blast machine and the pitch fume treatment system with dry coke scrubber. Furthermore, Alcoa, Inc - Warrick Operations is required to include those contemporaneous increases from March 5, 1997 through March 5, 2002 to the PSD netting analysis of this modification (which were inadvertently left out of the source's application for SSM 173-15661).

In order to render the requirements of a major PSD modification not applicable pursuant to 326 IAC 2-2, Alcoa, Inc. - Warrick Operations has elected to limit PM and PM₁₀ emission rates from the anode butt blast machine to 1.029 and 0.857 pounds per hour, each, equivalent to PM and PM₁₀ emissions of 0.01 and 0.0083 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute. The emission rate limits are equivalent to a limited potential to emit of 4.51

tons of PM and 3.75 tons of PM₁₀ per year.

Table 3 summarizes the potential to emit, reflecting all limits, of the anode butt blast machine. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Table 3 Pollutant	PM (tons/yr)	PM₁₀ (tons/yr)	SO₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	Pb (tons/yr)	TF (tons/yr)	HAPs (tons/yr)
Anode Butt Blast Machine Limited Emissions	4.51	3.75	–	–	–	–	0.00004	–	–
Average Past Actual Emissions	23.5	0.089	–	–	–	–	0.00024	–	–
Net Emissions	-19.0	3.67	–	–	–	–	-0.0002	–	–
PSD Significant Level	25	15	40	40	100	40	0.6	3	–

The two (2) year average past actual emissions of the anode butt blast machine operation from 2000 - 2001 are calculated at the bottom of page 3 of 9 of Appendix A.

As part of this modification Alcoa, Inc. - Warrick Operations has elected to limit the PM, PM₁₀, and VOC emission rates from the pitch fume treatment system with the pitch fume pollution control system to 0.070, 0.050, and 0.030 pounds per ton of green anodes produced, respectively. The emission rate limits are equivalent to a limited potential to emit of 6.57 tons of PM, 4.69 tons of PM₁₀, and 2.81 tons of VOC per year.

Table 4 summarizes the potential to emit, reflecting all limits, of the pitch fume treatment system with pitch fume pollution control system. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Table 4 Pollutant	PM (tons/yr)	PM₁₀ (tons/yr)	SO₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	Pb (tons/yr)	TF (tons/yr)	HAPs (tons/yr)
Pitch Fume Treatment System with Pitch Fume Pollution Control System	6.57	4.69	–	2.81	–	–	0.00006	–	–
Average Past Actual Emissions	11.23	6.74	–	4.48	–	–	0.0001	–	–

Table 4 Pollutant	PM (tons/yr)	PM₁₀ (tons/yr)	SO₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	Pb (tons/yr)	TF (tons/yr)	HAPs (tons/yr)
Net Emissions	-4.66	-2.05	-	-1.67	-	-	-0.00004	-	-
PSD Significant Level	25	15	40	40	100	40	0.6	3	-

The two (2) year average past actual emissions of the pitch fume treatment system and dry coke scrubbers from 2000 - 2001 are calculated at the bottom of page 4 of 9 of Appendix A.

Table 5 summarizes the net emissions (the sum of the net emissions (contemporaneous increases and decreases) from Tables 1 through 4), reflecting all limits, resulting from this modification.

Table 5 Pollutant	PM (tons/yr)	PM₁₀ (tons/yr)	SO₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	Pb (tons/yr)	TF (tons/yr)	HAPs (tons/yr)
Net Emissions from the Rebuilt Furnace (Table 1)	3.07	15.8	39.8	7.00	73.8	7.38	0.025	2.90	-
Net Emissions from Dross Cleaning (Table 2)	-5.95	-6.07	-	-	-	-	-0.00007	-	-
Net Emissions from Anode Butt Blast Machine (Table 3)	-19.0	3.67	-	-	-	-	-0.0002	-	-
Net Emissions From Pitch Fume Treatment System and Dry Coke Scrubbers (Table 4)	-4.66	-2.05	-	-1.67	-	-	-0.00004	-	-
Additional Contemporaneous Increases*	1.94	2.30	0.034	21.85	4.75	5.67	0.00004	-	-
Net Emissions	-24.6	13.6	39.8	27.2	78.6	13.1	0.025	2.90	-
PSD Significant Level	25	15	40	40	100	40	0.6	3	-

- * The additional contemporaneous increases dating back five (5) years from the submittal of the application for 173-15661-00007 on March 5, 2002, include emissions from one (1) scalper step cutter, one (1) natural gas fired air makeup unit rated at 6.88 million British thermal units per hour, three (3) natural gas-fired boilers rated at 12 million British thermal units per hour each, one (1) chemical conversion coating line, one (1) diesel powered fire suppression, and one (1) lime silo.

All the requirements from previous approvals in regards to the emission units involved in the additional contemporaneous increases will remain applicable.

Note that the contemporaneous increases from the natural gas-fired combustion emission units are the 2000 - 2001 average actual emissions from the one (1) air makeup unit and three (3) boilers listed on Pages 6 and 7 of 9 in Appendix A of this document.

MSM 173-15352-00007 issued on April 23, 2002 at the source's request has not been included in the PSD significant levels evaluation of this modification because compliance monitoring on the Alcan compact degassing unit would be required to demonstrate compliance with 326 IAC 2-2 if the emission unit was included in this modification. Therefore, the net emissions decrease from MSM 173-15352-00007 (-2.63 tons per year for PM and PM₁₀) shall not be credited towards the net emissions for evaluating PSD significant levels in this modification.

Since there were increased utilization emission limits for facilities located in the Green Anode Production Mill in Condition D.1.3 of SSM 173-15661-00007, issued on August 23, 2002, a limit on green anode input to the green anode baking ring furnace of 187,645 tons per twelve (12) consecutive month period with compliance determined at the end of each month is necessary to insure that the Green Anode Production Mill does not exceed the two (2) year average baked anode production from 1992-1993. By limiting the green anode input to the green anode baking ring furnace to the average production capacity from 1992 - 1993 in combination with the contemporaneous increases and decreases already mentioned in the tables above, it is insured that this modification will not exceed major PSD modification thresholds.

Note that although the green anode input limit is equivalent to the maximum hourly capacity of the green anode baking ring furnace, the input limit is necessary in order to insure that the Green Anode Production Mill does not exceed the 187,645 tons per year recorded during the 1992 - 1993 period, which was the last time the Green Anode Production Mill operated at full capacity. As a result, there will be no increased utilization of upstream and downstream emission units in the Green Anode Production Mill.

The green anode input limit of 187,645 tons per year and the throughput limit of 38,000 tons of dross per year for the dross cool operation in combination with at least two (2) reactor sections of the A-446 pollution control system for the green anode baking ring furnace, one (1) large as well as one (1) small baghouse for the dross cooling operation, one (1) baghouse for the anode butt blast machine, and the pitch fume pollution control system for the pitch fume treatment system operating at all times as well as the contemporaneous increases from 1997 - 2002 not previously included, is equivalent to the proposed net emissions for this modification in Table 5.

This modification to an existing major stationary source is not major because the emission increases are less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

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 rebuilt green anode baking ring furnace, known as the Bldg. 295 Anode Baking Ring Furnace is being reviewed under this permit shall be incorporated into the submitted Part 70 application.

Federal Rule Applicability

The one (1) green anode baking ring furnace is not subject to the requirements of the New Source Performance Standard (40 CFR Part 60.190, Subpart S), because pursuant to 40 CFR 60.190(c), the Permittee of an anode baking ring furnace in a primary aluminum reduction source may elect to comply with the requirements of this subpart or the requirements of Subpart LL of Part 63. Alcoa, Inc. - Warrick Operations pursuant to 40 CFR 60.190(c), has elected to comply with the requirements of 40 CFR 63 Subpart LL rather than the requirements of 40 CFR 60 Subpart S. Therefore, the requirements of 40 CFR 60 Subpart S will not apply to this furnace.

The one (1) green anode baking ring furnace is subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR 63 Subpart LL because this furnace is an existing anode baking ring furnace at a major primary aluminum reduction source and Alcoa, Inc. - Warrick Operations has elected to comply with the requirements of 40 CFR 63, Subpart LL rather than 40 CFR Part 60.190, Subpart S.

This anode bake furnace is not a reconstruction as defined by NESHAP guidelines because the cost of the reconstruction is less than 50% of a new anode baking ring furnace. Therefore, the green anode baking ring furnace shall be treated as an existing furnace. The following requirements will apply pursuant to 40 CFR 63 Subpart LL:

(a) Sec. 63.843 Emission Limits for Existing Sources.

Pursuant to 40 CFR 63.843(c), the Permittee shall not discharge or cause to be discharged into the atmosphere any emissions of total fluorides (TF) or polycyclic organic matter (POM) in excess of the following limits:

- (1) Emissions of TF shall not exceed 0.10 kilograms per megagram (0.20 pounds per ton) of green anode; and
- (2) Emissions of POM shall not exceed 0.09 kilograms per megagram (0.18 pounds per ton) of green anode.

(b) Sec. 63.846 Emission Averaging

This source does not have to comply with the limitations of 40 CFR 63.846 because Table 3 of Subpart LL applies to more than one anode baking ring furnace at a primary aluminum source and Alcoa, Inc. - Warrick Operations has only one (1) anode baking ring furnace at their source. Therefore, the requirements of 40 CFR 63.846 do not apply.

(c) Sec. 63.847 Compliance Provisions.

- (1) Pursuant to 40 CFR 63.847(c), following approval of the site-specific test plan, the Permittee shall conduct an initial performance test during the first month following

the startup in accordance with the procedures in paragraph (d) of this section.

- (2) Pursuant to 40 CFR 63.847(d), the initial performance test and all subsequent performance tests shall be conducted in accordance with the requirements of the general provisions in Subpart A of this part, the approved test plan, and the procedures in this section.

For the anode bake furnace, the Permittee shall measure and record the emission rate of TF and POM exiting the exhaust stacks of the A-446 pollution control system

- (3) The Permittee shall determine compliance with the applicable TF and POM emission limits using the following equations and procedures:

- (A) Compute the emission rate (Eb) of TF from the anode bake furnace the following equation,

$$E_b = \frac{(C_s \times Q_{sd})}{(P_b \times K)}$$

- Eb = emission rate of TF, kg/Mg (lb/ton) of green anodes produced
Cs = concentration of TF, Mg/dscm (Mg/dscf)
Qsd = volumetric flow rate of effluent gas (dscf/hr)
Pb = quantity of green anode material placed in furnace, mg/hr (ton/hr); and
K = conversion factor, 10⁶ Mg/kg (453,600)

- (B) Compute the emission rate of POM from the anode bake furnace using the equation above,

Where:

- Eb = emission rate of POM, kg/Mg (lb/ton) of green anodes produced and
Cs = concentration of POM, Mg/dscm (Mg/dscf).

- (d) Sec. 63.848 Emission Monitoring Requirements.

The following applies to the A-446 pollution control system operating in the one (1) green anode baking ring furnace:

- (1) Pursuant to 40 CFR 63.848(c), using the procedures in Sec. 63.847 and in the approved test plan, the Permittee shall monitor TF and POM emissions from the anode bake furnace on an annual basis. The Permittee shall compute and record the annual average of TF and POM emissions from at least three (3) runs to determine compliance with the applicable emission limits. The Permittee must include all valid runs in the annual average.
- (2) Pursuant to 40 CFR 63.848(f), the Permittee shall install, operate, calibrate, and maintain a continuous parameter monitoring system for the measurement of alumina and air flows. The Permittee shall submit for approval by the IDEM, OAQ, a description of the parameters to be monitored, the operating limits, and the monitoring frequency to ensure that the A-446 pollution control system is being properly operated and maintained. An explanation of the criteria used for selection of the

parameters, the operating limits, and the monitoring frequency, including how these relate to emission control also shall be submitted to the IDEM, OAQ.

- (3) Pursuant to 40 CFR 63.848(g), the Permittee shall visually inspect the exhaust stacks of the A-446 pollution control system on a daily basis for evidence of any visible emissions indicating abnormal operation.
 - (4) Pursuant to 40 CFR 63.848(f), if a monitoring device for the A-446 pollution control system measures an operating parameter outside the limits established pursuant to Sec. 63.847(h), if visible emissions indicating abnormal operation are observed from the exhaust stacks of the A-446 pollution control system during a daily inspection, the Permittee shall initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan within one (1) hour. Failure to initiate the corrective action procedures within one (1) hour or to take the necessary corrective actions to remedy the problem is a violation.
 - (5) Pursuant to 40 CFR 63.848(j), the Permittee of an existing anode bake furnace shall install, operate, and maintain a monitoring device to determine the daily weight of aluminum produced and the weight of green anode material placed in the anode bake furnace. The weight of green anode material may be determined by monitoring the weight of all anodes or by monitoring the number of anodes placed in the furnace and determining an average weight from measurements of a representative sample of anodes.
 - (6) Pursuant to 40 CFR 60.848(k), the Permittee shall submit recommended accuracy requirements to the IDEM, OAQ, for review and approval. All monitoring devices required by this section must be certified by the Permittee to meet the accuracy requirements and must be calibrated in accordance with the manufacturer's instructions.
 - (7) Pursuant to 40 CFR 60.848(l), the Permittee may monitor alternative A-446 pollution control system operating parameters subject to prior written approval by IDEM, OAQ.
- (e) Sec. 63.849 Test Methods and Procedures.

Pursuant to 40 CFR 63.849(a), the Permittee shall use the following reference methods to determine compliance with the applicable emission limits for TF and POM emissions:

- (1) Method 13A or Method 13B in appendix A to Part 60 of this chapter, or an approved alternative, for the concentration of TF where stack or duct emissions are sampled;
- (2) Method 13A or Method 13B and Method 14 or Method 14A in Appendix A to Part 60 of this chapter or an approved alternative method for the concentration of TF where emissions are sampled from roof monitors not employing wet roof scrubbers;
- (3) Method 315 in Appendix A to this part and Method 14 in Appendix A to Part 60 of this chapter or an approved alternative method for the concentration of POM where emissions are sampled from roof monitors not employing wet roof scrubbers.

(f) Sec. 63.850 Notification, Reporting, and Record Keeping Requirements

Pursuant to 40 CFR 63.850(e), the Permittee shall maintain files of all information (including all reports and notifications) required by Sec. 63.10(b) and by this subpart.

In addition to the general records required by Sec. 63.10(b), the Permittee shall maintain records of the following information:

- (1) Daily production rate of green anode material placed in the anode bake furnace;
- (2) A copy of the startup, shutdown, and malfunction plan;
- (3) The current implementation plan for emission averaging and any subsequent amendments;
- (4) Records, such as a checklist or the equivalent, demonstrating that the daily visual inspection of the exhaust stacks for the A-446 pollution control system has been performed as required in Sec. 63.848(g), including the results of each inspection;
- (5) Records documenting the corrective actions taken when the limits for an operating parameter established under Sec. 63.847(h) were exceeded, when visible emissions indicating abnormal operation were observed from the A-446 pollution control system stacks during a daily inspection required under Sec. 63.848(g).

State Rule Applicability - Individual Facilities

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

- (a) This source is one of the 28 listed source categories and therefore, fugitive emissions are counted toward the determination of PSD applicability.
- (b) In order to make the requirements of 326 IAC 2-2 not applicable to the proposed source modification, the following limits are proposed for the:
 - (1) Green anode baking ring furnace as follows:
 - (A) The input of green anodes to the green anode baking ring furnace shall be limited to 187,645 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (B) The emission rate of PM shall not exceed 0.676 pounds of PM per ton of green anode;
 - (C) The emission rate of PM₁₀ shall not exceed 3.92 pounds of PM₁₀ per ton of green anode;
 - (D) The emission rate of SO₂ shall not exceed 1.11 pounds of SO₂ per ton of green anode; and
 - (E) The emission rate of CO shall not exceed 3.57 pounds of CO per ton of green anode.

- (2) Dross cooling operation as follows:
 - (A) The throughput of the dross cooling operation shall be limited to 38,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (B) The emission rate of PM shall not exceed 0.440 pounds of PM per ton of dross throughput; and
 - (C) The emission rate of PM₁₀ shall not exceed 0.454 pounds of PM₁₀ per ton of dross throughput.
- (3) Pitch fume treatment system (formerly green anode forming operation) as follows:
 - (A) The emission rate of PM shall not exceed 0.070 pounds of PM per ton of green anode;
 - (B) The emission rate of PM₁₀ shall not exceed 0.050 pounds of PM₁₀ per ton green anode; and
 - (C) The emission rate of VOC shall not exceed 0.030 pounds of VOC per ton of green anode.
- (4) Anode butt blast machine as follows:
 - (A) The PM emission rate shall not exceed 1.029 pounds per hour, equivalent to 0.01 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute; and
 - (B) The PM₁₀ emission rate shall not exceed 0.857 pounds per hour, equivalent to 0.0083 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute.

Compliance with these limits render the requirements of 326 IAC 2-2 not applicable to this modification.

326 IAC 2-2-3 (Control Technology Review; Requirements)

Pursuant to 326 IAC 2-2-3 (BACT) and Conditions 9 and 10 of 87-08-91-0111, issued November 4, 1989:

- (a) Sulfur dioxide emissions from the A446 dry alumina scrubber shall be limited to 1.13 tons per day, and 35 tons per month, and 412 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) ALCOA shall use the lowest sulfur content coal tar pitch commercially available. This shall be limited to a maximum, of 0.80% sulfur. Records of pitch sulfur content based on vendor analysis shall be maintained for the most recent 24 month period and made available to the OAQ upon request.

Should pitch with a sulfur content of 0.80% become unavailable and the monthly average pitch sulfur content exceed this limit, then ALCOA shall have 30 days from the end of the month in violation to provide to the OAQ documentation that lower sulfur pitch is not avail-

able and documentation for a new proposed pitch sulfur content BACT limit. The BACT limit in (a) above shall remain in effect until such time as the Commissioner approves a revised pitch sulfur content BACT limit. However, enforcement action will not be taken until such time as ALCOA has been given the opportunity to support, request and obtain approval for a revised BACT limit as described above. Testing to establish a new A446 inlet SO₂ emission rate, similar to that described below, will be required as part of any revised BACT limit approval.

If the monthly average sulfur content of the pitch used in the anodes exceeds 0.75% for any calendar month, then ALCOA shall report this to OAQ within 30 days. This notification shall include a discussion of the reason the pitch sulfur content has increased and whether ALCOA has been able, or will be able, to obtain pitch with sulfur content below 0.75%. If pitch with a sulfur content of less than 0.75% is not available, then ALCOA shall submit documentation of this and, within 90 days of the notification, conduct an A446 dry scrubber SO₂ inlet (ring furnace outlet) test to reestablish the SO₂ inlet emission rate previously established in Condition No. 8 of 87-08-91-0111, issued on November 4, 1989. This test shall be conducted pursuant to 326 IAC 3-2 at the current maximum achievable anode production rate and the result will be used to determine compliance.

326 IAC 2-4.1-1 (New Source Toxics Control)

This modification is not a reconstruction as defined by NESHAP and the green anode baking ring furnace does not produce a finish product. Therefore, the requirements of 326 IAC 2-4.1-1 do not apply to this modification.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable PM emission rate from the one (1) green anode baking ring furnace will not exceed 31.95 pounds per hour when operating at a process weight rate of 21.42 tons of green anodes per hour. The allowable PM emission rate was calculated with the following equation:

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

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

The PM emissions from the green anode baking ring furnace after controls are 14.47 pounds per hour which is less than the allowable PM emission rate of 31.95 pounds per hour. Therefore, green anode baking ring furnace is in compliance with this rule.

At least two (2) reactor sections of the A-446 pollution control system will be in operation at all times the green anode baking ring furnace is in operation, in order to comply with this limit.

- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable PM emission rate from the one (1) dross cooling operations will not exceed 47.2 pounds per hour when operating at a process weight rate of 66.0 tons per hour. The allowable PM emission rate was calculated with the following equation.

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

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

At least one (1) large baghouse and one (1) small baghouse will be in operation at all times the cross cooling operation is in operation, in order to comply with this limit.

- (c) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) the one (1) pitch fume treatment system will not exceed 43.6 pounds per hour when operating at a process weight rate of 45.0 tons of green anodes per hour. The allowable PM emission rate was calculated with the following equation:

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

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The baghouses for the pitch fume pollution control system in the pitch fume treatment system will be in operation at all times when the pitch fume treatment system is in operation.

- (d) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable PM emission rate from the anode butt blast machine will not exceed 54.9 pounds per hour when operating at a process weight rate of 142.42 tons (121 tons of steel and 21.42 tons of green anodes) per hour. The allowable PM emission rate was calculated with the following equation.

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The baghouse for the anode butt blast machine will be in operation at all times the anode butt blast machine is in operation, in order to comply with this limit.

326 IAC 7-4-10 (Warrick County Sulfur Dioxide Emission Limitations), formerly 326 IAC 7-1-17

- (a) Pursuant to 326 IAC 7-4-10(a)(4)(H), the sulfur dioxide emissions from the green anode baking ring furnace shall not exceed 94.1 pounds per hour and 412 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) Compliance with the 94.1 pounds per hour limitation specified in 326 IAC 7-4-10(a)(4) shall be based on a stack test pursuant to 326 IAC 7-2-1(b).
- (c) Compliance with the 412 tons per year limitation specified in 326 IAC 7-4-10(a)(4) shall be based on emission total from a twelve (12) consecutive month period with compliance determined at the end of each month. Monthly sulfur dioxide emissions shall be determined from calendar month material balances using actual average sulfur content and material throughput. Quarterly reports shall be submitted to the department containing the calendar

month and rolling twelve (12) month sulfur dioxide emissions from the smelter operations (anode bake ring furnace). The report shall include documentation of the data and methodology used to calculate the monthly sulfur dioxide emissions and shall be submitted by the end of the month following the end of the quarter.

Testing Requirements

Since increase utilization is no longer applicable to the rebuilt furnace, the testing requirements from SSM 173-15661-00007, issued on August 23, 2002, for fresh petroleum screening, the fresh petroleum coke hammermill, the fresh petroleum coke intermediate classifier, the ball mill classifier, coal tar pitch receiving, butts, pitch, and fresh coke mixing, the anode butts impactor, the anode crushed butts storage, the anode busbar cleaning and finished anode cast ironing process will no longer be required since the pound per ton emission limits are no longer necessary to render the requirements of a major PSD modification not applicable pursuant to 326 IAC 2-2.

However, the testing requirements from SSM 173-15661-00007, issued on August 23, 2002, for the green anode baking ring furnace, dross cooling operation, pitch fume treatment system, and the anode butt blast machine are applicable since those limits are still necessary to render the requirements of PSD not applicable pursuant to 326 IAC 2-2.

Note that each testing requirement will require the control devices for the green anode baking ring furnace, dross cooling operation, pitch fume treatment system, and the anode bust blast machine to be tested under worst case conditions, i.e., with only two (2) reactor sections of the A-446 pollution control system operating as well as only one (1) large baghouse and only one (1) small baghouse operating at the dross cooling operation.

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.

The compliance monitoring requirements applicable to this source are as follows:

- (a) The one (1) green anode baking ring furnace equipped with an A-442 pollution control system has applicable compliance monitoring conditions as specified below:
 - (1) Pursuant to 40 CFR 63.848(f), the Permittee shall install, operate, calibrate, and maintain a continuous parameter monitoring system for the A-442 pollution control system. The Permittee shall submit for approval by IDEM, OAQ, a description of

the parameters to be monitored, the operating limits, and the monitoring frequency to ensure that the A-442 pollution control system is being properly operated and maintained. An explanation of the criteria used for selection of the parameters, the operating limits, and the monitoring frequency, including how these relate to emission control also shall be submitted to IDEM, OAQ. The following monitoring devices shall be installed:

For dry alumina scrubbers, devices for the measurement of alumina flow and air flow.

- (2) Pursuant to 40 CFR 63.848(g), the Permittee shall visually inspect the exhaust stacks of the A-442 pollution control system on a daily basis for evidence of any visible emissions indicating abnormal operation.
 - (3) Pursuant to 40 CFR 63.848(f), if a monitoring device the baghouse and the dry alumina scrubber measures an operating parameter outside the limits established pursuant to Sec. 63.847(h), if visible emissions indicating abnormal operation are observed from the exhaust stacks of the A-442 pollution control system during a daily inspection, the Permittee shall initiate the corrective action procedures identified in the start-up, shutdown, and malfunction plan within one (1) hour. Failure to initiate the corrective action procedures within one (1) hour or to take the necessary corrective actions to remedy the problem is a violation.
 - (4) Pursuant to 40 CFR 63.848(j), the Permittee of an existing anode bake furnace shall install, operate, and maintain a monitoring device to determine the daily weight of aluminum produced and the weight of green anode material placed in the anode bake furnace. The weight of green anode material may be determined by monitoring the weight of all anodes or by monitoring the number of anodes placed in the furnace and determining an average weight from measurements of a representative sample of anodes.
- (b) The baghouses for the green anode baking ring furnace, the dross cooling room, the pitch fume treatment system, and the anode butt blast machine have applicable compliance monitoring requirements as specified below:
- (1) The Permittee shall install and operate a continuous bag leak detection system for each exhaust stack of the green anode baking ring furnace, the dross cooling room, the pitch fume treatment system and the anode butt blast machine. The bag leak detection system shall meet the following requirements:
 - (A) Each electrodynamic bag leak detection system shall be installed, calibrated, operated, and maintained according to the "Fabric Filter Bag Leak Detection Guidance," (September 1997).
 - (B) The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of ten (10) milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
 - (C) The bag leak detection system sensor shall provide output of relative or absolute PM loadings.
 - (D) The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor.

- (E) The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel.
- (F) For negative pressure or induced air fabric filters, the bag leak detector shall be installed downstream of the fabric filter.
- (G) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
- (H) The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
- (I) Following initial adjustment of the system, the Permittee shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the Compliance Response Plan. In no case may the sensitivity be increased by more than one hundred (100%) percent or decreased more than fifty (50%) percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.
- (J) In the event that a bag leak detection system should malfunction, fail or otherwise need repair, the Permittee shall perform visible emissions notations of the stack exhausts associated with that bag leak detection system as follows:
 - (i) Visible emission notations of the stack exhausts shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
 - (ii) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
 - (iii) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
 - (iv) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
 - (v) The Compliance Response Plan for the green anode baking ring furnace, the dross cooling operation, the pitch fume treatment system and the anode butt blast machine shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a

deviation from this permit.

- (2) In the event that a bag leak detection system alarm is activated for any reason, the same corrective actions specified in the CRP for use during periods of startup, shutdown, and malfunction, shall be followed to correct the cause for the alarm, regardless of whether the alarm is caused by a malfunction as defined, the Permittee shall take the following response steps:
 - (A) For the ring furnace A-446 pollution control system and the pitch fume pollution control system, which are multi-reactor units, corrective actions shall be initiated in accordance with the CRP (SSM and Parametric Monitoring) plan within one (1) hour. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
 - (i) If operations continue at the green anode baking ring furnace after bag failure is observed and two (2) of the three (3) reactor sections of the A-446 pollution control system have been in operation, the failure shall be addressed by shutting down the reactor section that the failure has occurred at and starting up the reactor section that is not in operation. If it will be ten (10) days or more after the failure, is observed before the failed reactor section will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date that the failed reactor section will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
 - (ii) If operations continue at the baghouse portion of the pitch fume treatment system after bag failure is observed, the failure shall be addressed by conducting visible emissions notations once per day or by calculating daily particulate concentrations. If it will be ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
 - (B) For the four (4) cross cooling operation baghouses which are single compartment baghouses, when more than one (1) large baghouse fails or when more than two (2) of the four (4) baghouses fail, if failure is indicated by an opacity violation or a bag leak detection alarm activation that is not a false alarm, or if bag failure is determined by other means, such as daily checks of the particulate concentration readings from electrodynamic bag leak detectors or visible emissions notations, then the associated process will be shut down immediately until a sufficient number of failed units have

been brought back on-line to meet the minimum operating criteria specified by the Compliance Response Plan. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

- (C) For the anode butt blast machine baghouse which is a single compartment baghouse, if failure is indicated by an opacity violation or a bag leak detection alarm activation that is not a false alarm, or if bag failure is determined by other means, such as daily checks of the particulate concentration readings from electrodynamic bag leak detectors or visible emissions notations, then the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

These monitoring conditions are necessary because the baghouse and the scrubber for the green anode baking ring furnace and the four (4) baghouses of the dross cooling operation must operate properly to comply with 326 IAC 6-3-2, NESHAP Subpart LL, 326 IAC 2-2, and 326 IAC 2-7 (Part 70).

Changes To Existing Source Modifications

Since the rebuilt green anode baking ring furnace is the primary basis for this modification, permit conditions are proposed which are consistent with requirements of SSM 173-15661-00007, issued on August 23, 2002. Changed, A, C, and D Section conditions from SSM 173-15661-00007 as a result of this modification will appear with deletions as ~~strikeouts~~ and new language in **bold** as follows:

Change 1:

The source has requested that Condition C.14 of SSM 173-15661-00007, issued on August 23, 2002 state the CRP can be satisfied by the Start-up Shutdown Malfunction Plan for the green anode baking ring furnace and a Parametric Monitoring Plan for the pitch fume treatment system. Therefore, Condition C.14 of SSM 173-15661-00007 (now Condition C.13) will be revised in this modification as follows:

C.14 13 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. **If a Permittee is required to have a Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan) under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions.** A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.

- (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan **or Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan** and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

The Parametric Monitoring and SSM Plan shall be submitted within the time frames specified by the applicable 40 CFR 60/63 requirement.

~~(b) The Compliance Response Plan (CRP) for the green anode baking ring furnace shall consist of the compliance parameter monitoring system plan specified by 40 CFR 63.848(f) and the Start-up, Shutdown, and Malfunction plan specified by 40 CFR 63.6(e)(3).~~

~~(e)~~**(b)** For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:

- (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan **or Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan**; or
- (2) If none of the reasonable response steps listed in the Compliance Response Plan **or Parametric Monitoring Plan and Start-up, Shutdown, and Malfunction (SSM) Plan** is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
- (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, **and it will be ten (10) days or more until the unit or device will be shut down, then the Permittee shall promptly notify IDEM, OAQ shall be promptly notified** of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
- (4) Failure to take reasonable response steps shall constitute a violation of the permit.

~~(d)~~ **(c)** The Permittee is not required to take any further response steps for any of the following reasons:

- (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
- (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
- (3) An automatic measurement was taken when the process was not operating.
- (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.

- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B - Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

Change 2:

In order to allow the pressure gauge requirements from Condition C.13 of SSM 173-15661-00007, issued on August 23, 2002 to also apply to the anode butt blast machine in this modification, Condition C.13 of SSM 173-15661-00007 (now Condition C.12) will be revised as follows:

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

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) Whenever a condition in this permit requires the measurement of a flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (c) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

The requirements of this condition shall supersede the requirements of Condition C.10 of SSM 173-14145-00007, issued on July 7, 2001.

Change 3:

Since this modification is now incorporating, the green anode baking ring furnace, the dross cool room, the pitch fume treatment system, and the anode butt blast machine, Condition A.2 and the Facility description box for Section D.1 of SSM 173-15661-00007, issued on August 23, 2002 will be revised as follows:

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 ~~rebuild and~~ operate the following emission unit and pollution control devices:

- (a) One (1) above-ground, natural gas-fired, green anode baking ring furnace, known as Bldg. 295 Anode Baking Ring Furnace, equipped with an **A-446 pollution control system consisting of three (3) reactor sections** with a baghouse for particulate matter **PM and PM₁₀** control and dry alumina scrubber for TF and SO₂ control **which operate at a minimum of two (2) reactor sections at any one (1) time**, exhausting through Stacks 265D.1, 265D.2, 265D.3, 265D.4, 265D.5, 265D.6, 265D.8, and 265J.1 **(which is the diesel-fired emergency bypass engine stack used for venting ring furnace exhaust gases during emergency periods of unexpected loss of power to the A-446 dry scrubber fans)**, capacity: ~~23.15~~ **21.42** tons of green anodes per hour.

~~This stationary source is also approved to limit the operation of the following emission unit and pollution control devices:~~

- (b) **One (1) diesel-fired emergency bypass engine, consisting of an emergency bypass stack with a bypass duct and emergency bypass fan, heat output capacity: 200 horsepower.**
- (b) (c) One (1) dross cooling operation, equipped with ~~four (4) baghouses~~ **two (2) small baghouses, identified as Baghouses #1 and #2, and two (2) large baghouses, identified as Baghouses #3 and #4** for **PM, PM₁₀, and lead** control, capacity: ~~28.2~~ **66.0** tons per hour.
- (d) **One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) baghouses for PM, PM₁₀, and VOC control, capacity: 45.0 tons of green anodes per hour.**
- (e) **One (1) mechanical blasting operation, identified as Anode Butt Blast Machine #1, equipped with one (1) baghouse for PM and PM₁₀ control, exhausting to Stack 132.9, capacity: 242,000 pounds of steel per hour.**

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Green anode baking ring furnace, **emergency bypass engine, and dross cooling operation, pitch fume treatment system, and anode butt blast machine**

- (a) One (1) above-ground, natural gas-fired, green anode baking ring furnace, known as Bldg. 295 Anode Baking Ring Furnace, equipped with an **A-446 pollution control system consisting of three (3) reactor sections with a baghouse for particulate matter PM and PM₁₀ control and dry alumina scrubber for TF and SO₂ control which operate at a minimum of two (2) reactor sections at any one (1) time**, exhausting through Stacks 265D.1, 265D.2, 265D.3, 265D.4, 265D.5, 265D.6, 265D.8, and 265J.1 (**which is the diesel-fired emergency bypass engine stack used for venting ring furnace exhaust gases during emergency periods of unexpected loss of power to the A-446 dry scrubber fans**), capacity: ~~23.45~~ **21.42** tons of green anodes per hour.
- (b) **One (1) diesel-fired emergency bypass engine, consisting of an emergency bypass stack with a bypass duct and emergency bypass fan, heat output capacity: 200 horsepower.**
- ~~(b)~~ (c) One (1) dross cooling operation, equipped with ~~four (4) baghouses~~ **two (2) small baghouses, identified as Baghouses #1 and #2, and two (2) large baghouses, identified as Baghouses #3 and #4 for PM, PM₁₀, and lead control**, capacity: ~~28.2~~ **66.0** tons per hour.
- (d) **One (1) pitch fume treatment system (formerly green anode forming operations), equipped with a pollution control system, consisting of two (2) dry coke scrubbers and two (2) baghouses for PM, PM₁₀, and VOC control, capacity: 45.0 tons of green anodes per hour.**
- (e) **One (1) mechanical blasting operation, identified as Anode Butt Blast Machine #1, equipped with one (1) baghouse for PM and PM₁₀ control, exhausting to Stack 132.9, capacity: 242,000 pounds of steel per hour.**

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

Change 4:

Since the limits for increased utilization are proposed to be removed and some limits have been revised the PSD limits in Condition D.1.3 of SSM 173-15661-00007, the record keeping requirements in Condition D.1.20(b) (now Condition D.1.21(b)), the reporting requirements of Condition D.1.21 (now Condition D.1.22), and the quarterly report for that condition will be revised as follows:

D.1.3 Prevention of Significant Deterioration [326 IAC 2-2] [~~40 CFR 52.21~~]

- (a) The following limits shall apply to the green anode baking ring furnace:
 - ~~(a)~~ (1) The input of green anodes to the green anode baking ring furnace shall be limited to ~~202,280~~ **187,645** tons per twelve (12) consecutive month period **with compliance determined at the end of each month.**
 - ~~(b)~~ (2) The emission rate of PM and PM₁₀ shall not exceed ~~0.745~~ **0.676** pounds of PM per ton of green anode; ~~each.~~
 - (3) **The emission rate of PM₁₀ shall not exceed 3.92 pounds of PM₁₀ per ton of**

green anode;

- (c) (4) The emission rate of SO₂ shall not exceed ~~1.03~~ **1.11** pounds of SO₂ per ton of green anode; **and**
- (d) (5) The emission rate of CO shall not exceed 3.57 pounds of CO per ton of green anode.
- (e) (6) Any change or modification that increases net lead emissions of this modification to greater than PSD Significant levels, shall require prior IDEM, OAQ, approval.
- (b) The following limits shall apply to the dross cooling operation:
 - (f) (1) The throughput of dross through the dross cooling operation shall be limited to 38,000 tons per twelve (12) consecutive month period **with compliance determined at the end of each month.**, ~~and~~
 - (2) **The emission rate of PM shall not exceed 0.440 pounds of PM per ton of dross throughput; and**
 - (g) (3) The emission rate of PM₁₀ shall not exceed 0.454 pounds per ton of dross throughput.
- (c) The following limits shall apply to the ~~facilities located within the Green Anode Production Mill~~ **pitch fume treatment system:**
 - (h) ~~The emission rate of PM and PM₁₀ from fresh petroleum coke screening shall not exceed 0.400 pounds per ton, each.~~
 - (i) ~~The emission rate of PM and PM₁₀ from the fresh petroleum coke hammermill shall not exceed 0.360 pounds per ton, each.~~
 - (j) ~~The emission rate of PM and PM₁₀ from the fresh petroleum coke intermediate classifier shall not exceed 0.710 pounds per ton, each.~~
 - (k) ~~The emission rate of PM and PM₁₀ from the ball mill classifier shall not exceed 0.580 pounds per ton, each.~~
 - (l) ~~The emission rate of VOC from coal tar pitch receiving shall not exceed 0.270 pounds per ton.~~
 - (m) ~~The emission rate of PM₁₀ from butts, pitch, and fresh coke mixing shall not exceed 0.004 pounds per ton.~~
 - (n) ~~The emission rate of PM from butts, pitch, and fresh coke mixing shall not exceed 0.023 pounds per ton.~~
 - (1) **The emission rate of PM shall not exceed 0.070 pounds of PM per ton of green anode;**
 - (o) (2) The emission rate of PM₁₀ ~~from the green anode forming operation (pitch fume treatment system)~~ shall not exceed ~~0.027~~ **0.050** pounds **PM₁₀** per ton **of green anode; and**

- ~~(p) The emission rate of PM from the green anode forming operation (pitch fume treatment system) shall not exceed 0.060 pounds per ton.~~
- (q) **(3)** The emission rate of VOC from the green anode forming operation (pitch fume treatment system) shall not exceed ~~0.018~~ **0.030** pounds of VOC per ton of green anode.
- (d) The following limits shall apply to the anode butt blast machine:**
- (1) The PM emission rate shall not exceed 1.029 pounds per hour, equivalent to 0.01 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute.**
- (2) The PM₁₀ emission rate shall not exceed 0.857 pounds per hour, equivalent to 0.0083 grains per dry standard cubic foot at a flow rate of 12,000 actual cubic feet per minute.**
- ~~(r) The emission rate of PM₁₀ from the anode butt blasting machine shall not exceed 0.010 pounds per ton.~~
- ~~(s) The emission rate of PM from the anode butt blasting machine shall not exceed 0.012 pounds per ton.~~
- ~~(t) The emission rate of PM₁₀ from the anode butts impactor shall not exceed 0.076 pounds per ton.~~
- ~~(u) The emission rate of PM from the anode butts impactor shall not exceed 0.100 pounds per ton.~~
- ~~(v) The emission rate of PM₁₀ from anode crushed butts storage shall not exceed 0.003 pounds per ton.~~
- ~~(w) The emission rate of PM from anode crushed butts storage shall not exceed 0.011 pounds per ton.~~
- ~~(x) The emission rate of PM₁₀ from anode busbar cleaning shall not exceed 0.0009 pounds per bar cleaned.~~
- ~~(y) The emission rate of PM from anode busbar cleaning shall not exceed 0.018 pounds per bar cleaned.~~
- ~~(z) The emission rate of PM₁₀ from finished anode cast iron processing shall not exceed 0.330 pounds per ton of iron melted.~~
- ~~(aa) The emission rate of PM finished anode cast iron processing shall not exceed 0.410 pounds per ton of iron melted.~~

The throughput limits in Conditions D.1.3(a)(1) and ~~(f)~~ **(b)(1)** in combination with these emission limits specified by Conditions D.1.3**(a)(2) through (5)**, ~~(b)(2) through (e)~~ and **(3),(g) as well as (c) and (d)**, render the requirements of 326 IAC 2-2 and ~~40 CFR 52.21~~ not applicable to the green anode baking ring furnace.

The requirements of this condition shall supersede the requirements of Condition D.1.2 of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.3 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.20 21 Record Keeping Requirements

- (a) To document compliance with Condition D.1.3(a)(1), the Permittee shall maintain monthly records of the throughput of green anodes to the green anode baking ring furnace.
- (b) To document compliance with Condition D.1.3(f)(b)(1), the Permittee shall maintain monthly records of the throughput of the dross cooling operation.

D.1.24 22 Reporting Requirements

- (a) A quarterly summary of the information to document compliance with Conditions D.1.3(a)(1) and (f)(b)(1), D.1.4(b), D.1.6 through D.1.8 and D.1.15 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).
- (b) Pursuant to 40 CFR Part 63.10(e)(3), the Permittee shall submit a report, or summary report, if measured emissions are in excess of the applicable standard. The report shall contain the information specified in 40 CFR Part 63.10(e)(3)(v) and be submitted semi-annually unless quarterly reports are required as a result of excess emissions. The report shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the semi-annually or if necessary 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
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Facility: Green anode baking ring furnace
Parameter: Throughput of green anodes
Limit: ~~202,280~~ **187,645** tons per twelve (12) consecutive month period **with compliance determined at the end of each month.**

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

Part 70 Source Modification Quarterly Report

Facility: Dross cooling operation
Parameter: Throughput
Limit: 38,000 tons per twelve (12) consecutive month period **with compliance determined at the end of each month.**

Change 5:

The terminology "with compliance determined at the end of each month" will be added to Condition D.1.6(a), D.1.7, and D.1.8, and the subsequent report forms as follows

D.1.6 Control Technology Review; Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (BACT) and Conditions 9 and 10 of 87-08-91-0111, issued November 4, 1989:

- (a) Sulfur dioxide emissions from the A446 dry alumina scrubber shall be limited to 1.13 tons per day, and 35 tons per month, and 412 tons per ~~rolling~~ twelve (12) consecutive month period **with compliance determined at the end of each month.**

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

Part 70 Source Modification Quarterly Report

Facility: Green anode baking ring furnace dry scrubber

Parameter: Sulfur Dioxide Emissions

Limits: 35 tons per month and 412 tons per twelve (12) consecutive month period **with compliance determined at the end of each month.** Monthly sulfur dioxide emissions shall be determined from calendar month material balances using actual average sulfur content and material throughput.

D.1.7 Warrick County Sulfur Dioxide Emission Limitations [326 IAC 7-4-10]

Pursuant to 326 IAC 7-4-10(a)(4)(H), the sulfur dioxide emissions from the green anode baking ring furnace shall not exceed 94.1 pounds per hour and 412 tons per twelve (12) consecutive month period **with compliance determined at the end of each month.**

D.1.8 Natural Gas Usage Limitation

Pursuant to Condition 17 of 87-08-91-0111, issued November 4, 1989, natural gas throughput to the green anode baking ring furnace shall be limited to 75 million cubic feet per month and 600 million cubic feet per twelve (12) consecutive month period **with compliance determined at the end of each month.**

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

Part 70 Source Modification Quarterly Report

Facility: Green anode baking ring furnace

Parameter: Natural gas throughput

Limits: 75 million cubic feet per month and 600 million cubic feet per twelve (12) consecutive month period **with compliance determined at the end of each month.**

Change 6:

Pursuant to PC (87) 1840, a construction permit which allows the operation of an emergency bypass engine during unexpected loss of power to the A-446 dry scrubber fans. The operation of this fan

during true emergency situations may not be covered by Section C - Emergency Provisions in SSM 173-15661-00007. Since the operation of the emergency bypass engine may not be covered by Section C - Emergency Provisions, the requirements of PC (87) 1840 will be added at the source request to the proposed modification in order to assure that the additional emergency provisions are included. Therefore, Conditions D.1.4, D.1.16, and D.1.21(c) with a quarterly report form for Condition D.1.4, will be added as follows:

D.1.4 Additional Emergency Provisions

Pursuant to Operation Condition 4 of PC (87) 1840, issued on February 26, 1990:

- (a) The Permittee shall only operate the emergency bypass engine during emergency periods of unexpected loss of power to the A-446 dry scrubber fans or for short periods during readiness testing.**
- (b) The emergency bypass engine shall be limited to 300 hours per twelve (12) consecutive month period with compliance determined at the end of each month.**

D.1.16 Emergency Bypass Engine Operation

In order to document compliance with Condition D.1.4, the following requirements shall apply to operation of the emergency bypass engine:

- (a) Pursuant to Operation Condition 3 of PC (87) 1840, issued on February 26, 1990, the emergency bypass engine shall be operated in accordance with manufacturer's specifications.**
- (b) Pursuant to Operation Condition 4 of PC (87) 1840, issued on February 26, 1990, the A-446 dry alumina scrubbers shall only be bypassed and untreated ring furnace flue gas vented through the emergency bypass stack during emergency periods and not during weekly readiness testing periods.**

D.1.20 21 Record Keeping Requirements

- (c) To document compliance with Condition D.1.4, the Permittee shall maintain the following:**
 - (1) A log of all periods of operation of the emergency bypass fan diesel engine. This log shall include the following:**
 - (A) The date,**
 - (B) The times for start and end of operation,**
 - (C) The reason for the operation (i.e., readiness testing or description of emergency situation), and**
 - (D) Whether the untreated ring furnace flue gas was being vented thru the emergency bypass stack.**
 - (2) The log shall also show the total hours of operation for each calendar month and for the most recent twelve (12) month period. This record shall be maintained for at least the most recent twenty-four (24) month period.**

- (3) Any time that the emergency bypass engine and fan are operating and venting untreated ring furnace flue gas for more than one (1) hour, this shall be reported in accordance with Section C - Emergency Provisions.**

**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: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-17780-00007
Facility: Ring Furnace Emergency Bypass Engine
Parameter: Hours of Operation
Limit: 300 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Hours of Operation	Hours of Operation	Hours of Operation
	This Month	Previous 11 Months	12 Month Total

- ☉ No deviation occurred in this month.
- ☉ 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.

Change 7:

Since allowable PM emissions pursuant to 326 IAC 6-3-2 will change due to this modification, the requirements of Condition D.1.5 of SSM 173-15561-00007 will be revised as follows:

D.1.5 Particulate Matter (PM) [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2 (~~Particulate emission limitations, work practices, and control technologies~~)(**Particulate Emission Limitations for Manufacturing Processes**), the allowable PM emission rate for the one (1) green anode baking ring furnace and one (1) pitch fume treatment system, shall not exceed ~~33.7~~ **31.95** pounds per hour, total when operating at a process weight rate of ~~17.2~~ **21.42** tons per hour. ~~and the allowable PM emission rate for the dross cooling operation, shall not exceed 38.4 pounds per hour total when operating at a process weight rate of 28.2 tons per hour.~~ **The allowable PM emission rate was calculated with the following equation.**

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

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

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

- (b) Pursuant to 326 IAC 6-3-2 (**Particulate Emission Limitations for Manufacturing Processes**), the allowable PM emission rate from:
- (1) **The one (1) dross cooling operations shall not exceed 47.2 pounds per hour when operating at a process weight rate of 66.0 tons per hour.**
 - (2) **The one (1) pitch fume treatment system shall not exceed 43.6 pounds per hour when operating at a process weight rate of 45.0 tons of green anodes per hour.**
 - (3) **The one (1) anode butt blast machine shall not exceed 54.9 pounds per hour when operating at a process weight rate of 142.42 tons (121 tons of steel and 21.42 tons of green anodes) per hour.**

These allowable PM emission rates were calculated with the following equation.

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The requirements of this condition shall supersede the requirements of Condition D.1.1 of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.5 of SSM 173-15661-00007, issued on August 23, 2002.

Change 8:

The facilities subject to a preventive maintenance plan from Condition D.1.9 of SSM 173-15661-00007 will be made plural as to apply to each facility in Section D.1 of this modification as follows:

D.1.9 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

Change 9:

Since the limitations involving increased utilization of the Green Anode Production mill will not be included in the modification, the dross cooling operation may continue operate while using only one (1) large baghouse and one (1) small baghouse, and there are testing procedure required for bag leak detection systems, Condition D.1.12 will be revised in this modification as follows:

D.1.12 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

- (a) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Conditions D.1.3~~(b)~~**(a)(2) and (3)** the Permittee shall perform PM and PM₁₀ testing for the green anode baking ring furnace, utilizing methods as approved by the Commissioner. PM₁₀ includes filterable and condensible PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing. **During the stack test, the Permittee shall determine the sensitivity of the bag leak detection system and calibrate the particulate concentration readings of the electrodynamic bag leak detector in order to provide an output relative to outlet grain loading levels.**
- (b) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Condition D.1.3~~(e)~~**(a)(4)** the Permittee shall perform SO₂ testing for the green anode baking ring furnace, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C- Performance Testing.
- (c) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Condition D.1.3~~(g)~~**(b)(3)** the Permittee shall perform PM₁₀ testing for the dross cooling operation **while operating with one (1) large baghouse and one (1) small baghouse**, utilizing methods as approved by the Commissioner. PM₁₀ includes filterable and condensible PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing. **During the stack test, the Permittee shall determine the sensitivity of the bag leak detection system and calibrate the particulate concentration readings of the electrodynamic bag leak detector in order to provide an output relative to outlet grain loading levels.**
- (d) Within 180 days after startup of the green anode baking ring furnace, in order to demonstrate compliance with Conditions D.1.3~~(h) through (k), (c)(2) and (d)(2), (m), (o), (r), (t), (v), and (z)~~, the Permittee shall perform PM₁₀ testing for ~~fresh petroleum coke screening, the fresh petroleum coke hammermill, the fresh petroleum coke intermediate classifier, the ball mill classifier, butts, pitch, and fresh coke mixing, green anode forming operations (the pitch fume treatment system), and the anode butt blast machine, the anode butts impactor, anode crushed butts storage and finished anode cast iron processing,~~ utilizing methods as approved by the Commissioner. **This These tests** shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensible PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing. **During the stack test, the Permittee shall determine the sensitivity of the bag**

leak detection system and calibrate the particulate concentration readings of the electrodynamic bag leak detector in order to provide an output relative to outlet grain loading levels.

The requirements of this condition shall supersede the requirements of Condition D.1.12 of SSM 173-15661-00007, issued on August 23, 2002.

Change 10:

Since the baghouses and dry alumina scrubbers for the green anode baking ring furnace are located in reactor sections and the source is currently only operating two (2) sections of the A-446 pollution control system at a time, Conditions D.1.10, D.1.14, D.1.16 (now Condition D.1.17), and D.1.19 (now Condition D.1.20) of SSM 173-15661-00007 will be revised as follows:

D.1.10 TF and POM Testing Requirements [326 IAC 20-24-1] [40 CFR Part 63, Subpart LL]

- (a) Pursuant to 40 CFR 63.847(d)(4), the Permittee shall conduct an initial performance test **for the green anode baking ring furnace** within 180 days after initial startup and all subsequent performance tests **for the green anode baking ring furnace** in accordance with the requirements of the general provisions in 40 CFR 63 Subpart A of this part, the approved test plan, and the procedures in Condition D.1.10(b).
- (b) Pursuant to 40 CFR 63.849(a), the Permittee shall use the following reference methods to determine compliance with the applicable emission limits for TF and POM emissions:

Method 13A or Method 13B in Appendix A to Part 60 of 40 CFR or an approved alternative, for the concentration of TF where stack or duct emissions are sampled.
- (c) In order to demonstrate compliance with Condition D.1.2, the Permittee shall measure and record the emission rate of TF and POM from the green anode baking ring furnace exiting the exhaust stacks of the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system**.

D.1.14 TF and SO₂

In order to comply with Conditions D.1.2(a), D.1.3(e)(a)(4), and D.1.6, ~~the dry alumina scrubber at least two (2) of the three (3) A-446 pollution control system reactor sections~~ for TF and SO₂ control shall be in operation at all times when the green anode baking ring furnace is in operation.

The requirements of this condition shall supersede the requirements of Condition D.1.14 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.46 17 Emissions Monitoring Requirements [326 IAC 20-24-1] [40 CFR Part 63.848, Subpart LL]

The following applies to the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system** operating in the one (1) green anode baking ring furnace:

- (a) Pursuant to 40 CFR 63.848(c), using the procedures in Sec. 63.847 and in the approved test plan, the Permittee shall monitor TF and POM emissions from the anode bake furnace on an annual basis. The Permittee shall compute and record the annual average of TF and POM emissions from at least three (3) runs to determine compliance with the applicable emission limits. The Permittee must include all valid runs in the annual average.
- (b) Pursuant to 40 CFR 63.848(f), the Permittee shall install, operate, calibrate, and maintain a continuous parameter monitoring system for the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system**. The Permittee shall install monitoring devices for the

measurement of alumina flow and air flow for the dry alumina scrubber.

- (c) Pursuant to 40 CFR 63.848(f), Alcoa, Inc. - Warrick Operations submitted their compliance monitoring plan on April 23, 1999 **and amended their compliance monitoring plan on December 5, 2003.**
- (d) Pursuant to 40 CFR 63.848(g), the Permittee shall visually inspect the exhaust stacks of the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system** on a daily basis for evidence of any visible emissions indicating abnormal operation.
- (e) Pursuant to 40 CFR 63.848(f), if a monitoring device for the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system** measures an operating parameter outside the limits established pursuant to Sec. 63.847(h), if visible emissions indicating abnormal operation are observed from the exhaust stacks of the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system** during a daily inspection, the Permittee shall initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan within one (1) hour. Failure to initiate the corrective action procedures within one (1) hour or to take the necessary corrective actions to remedy the problem is a violation.
- (f) Pursuant to 40 CFR 63.848(j), the Permittee of an existing anode bake furnace shall install, operate, and maintain a monitoring device to determine the daily weight of aluminum produced and the weight of green anode material placed in the anode bake furnace. The weight of green anode material may be determined by monitoring the weight of all anodes or by monitoring the number of anodes placed in the furnace and determining an average weight from measurements of a representative sample of anodes.
- (g) Pursuant to 40 CFR 60.848(k), the Permittee shall submit recommended accuracy requirements to IDEM, OAQ, for review and approval. All monitoring devices required by this section must be certified by the Permittee to meet the accuracy requirements and must be calibrated in accordance with the manufacturer's instructions.
- (h) Pursuant to 40 CFR 60.848(l), the Permittee may monitor alternative ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system** operating parameters subject to prior written approval by IDEM, OAQ.

The requirements of this condition shall supersede the requirements of Condition D.1.16 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.4920 Anode Baking Furnace Record Keeping and Reporting Requirements [326 IAC 20-24-1][40 CFR Part 63, Subpart LL]

Pursuant to 40 CFR 63.850(e), the Permittee shall maintain files of all information (including all reports and notifications) required by Sec. 63.10(b) and by 40 CFR 63 Subpart LL.

In addition to the general records required by Sec. 63.10(b), the Permittee shall maintain records of the following information:

- (a) Daily production rate of green anode material placed in the anode bake furnace;
- (b) A copy of the startup, shutdown, and malfunction plan;
- (c) Records, such as a checklist or the equivalent, demonstrating that the daily visual inspection of the exhaust stacks ~~for of the baghouse and dry alumina scrubber~~ **A-446 pollution control system** has been performed as required in Sec. 63.848(g), including the results of

each inspection;

- (d) Records documenting the corrective actions taken when the limits for an operating parameter established under Sec. 63.847(h) were exceeded, when visible emissions indicating abnormal operation were observed from the ~~baghouse and dry alumina scrubber~~ **A-446 pollution control system** stacks during a daily inspection required under Sec. 63.848(g).

Change 11:

The changes in the emission limits for Condition D.1.3 as well as the changes in the operations of the A-446 pollution control system and the dross cooling operation baghouses will also cause Condition D.1.13 of SSM 173-15661-00007 to be revised as follows:

D.1.13 Particulate Matter (PM) and Particulate Matter Less than Ten Microns (PM₁₀)

- (a) **In order to comply with Conditions D.1.3(a)(2) and (3) as well as Condition D.1.5(a), at least (2) reactor sections of the A-446 pollution control system shall be in operation at all times when the green anode baking ring furnace is in operation.**
- ~~(a)~~(b) In order to comply with Conditions D.1.3~~(b)~~(c)(1) and (2), (d)(1) and (2), **as well as Conditions D.1.5(b)(2) and (3)**, the baghouses for PM and PM₁₀ control shall be in operation at all times when ~~the green anode baking ring furnace,~~ **the pitch fume treatment system and the anode butt blast machine** ~~is~~ are in operation.
- ~~(b)~~ (c) In order to comply with Conditions D.1.3~~(g)~~(b)(2) and (3) **and as well as Condition D.1.5(b)(1)**, ~~three (3) out of the four (4) baghouses~~ **at least one (1) small baghouse and one (1) large baghouse** controlling PM and PM₁₀ **shall be in operation at all times when** ~~from the dross cooling shall be in operation at all times when~~ the dross cooling process is in operation.

When the dross cooling process is only operating one (1) small baghouse and one (1) large baghouse, in order to comply with Conditions D.1.3(b)(2) and (3) as well as Condition D.1.5(b)(1), all roll-up doors in the dross cooling building shall be closed, except when vehicles are entering or exiting the building.

The requirements of this condition shall supersede the requirements of Condition D.1.13 of SSM 173-15661-00007, issued on August 23, 2002.

Change 12:

For all baghouses in this modification, the Permittee will be required to operate a bag leak detection system. Therefore, Condition D.1.17 from SSM 173-15661-00007 (now Condition D.1.18) and the record keeping in Condition D.1.20(f), (now Condition D.1.21(g)) will be revised as follows:

D.1.17 18 Bag Leak Detection System

The Permittee shall install and operate a continuous bag leak detection system for each **baghouse exhaust stack** of the **A-446 pollution control system** for the green anode baking ring furnace, and the dross cooling room, **the pitch fume treatment system, and the anode butt blast machine.** The bag leak detection system shall meet the following requirements:

- (a) Each ~~triboelectric~~ **electrodynamic** bag leak detection system shall be installed, calibrated, operated, and maintained according to the "Fabric Filter Bag Leak Detection Guidance," (September 1997).

- (b) The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of ten (10) milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
- (c) The bag leak detection system sensor shall provide output of relative or absolute PM loadings.
- (d) The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor.
- (e) The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel.
- (f) For negative pressure or induced air fabric filters, the bag leak detector shall be installed downstream of the fabric filter.
- (g) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
- (h) The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
- (i) Following initial adjustment of the system, the Permittee shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the Compliance Response Plan. In no case may the sensitivity be increased by more than one hundred (100%) percent or decreased more than fifty (50%) percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.
- (j) In the event that a bag leak detection system should malfunction, fail or otherwise need repair, the Permittee shall perform visible emissions notations of the stack exhausts associated with that bag leak detection system as follows:
 - (1) Visible emission notations of the stack exhausts shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
 - (2) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
 - (3) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
 - (4) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
 - (5) The Compliance Response Plan for the green anode baking ring furnace and the dross cooling operation shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. **Failure to take response steps**

in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

The requirements of this condition shall supersede the requirements of Conditions D.1.5, D.1.6, and D.1.7, of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.17 of SSM 173-15661-00007, issued on August 23, 2002.

D.1.20 21 Record Keeping Requirements

- ~~(f)~~ **(g)** To document compliance with Condition D.1.47**18(j)**, the Permittee shall maintain records of visible emission notations of the green anode baking ring furnace, and dross cooling operation, **pitch fume treatment system, and anode butt blast machine baghouse** stack exhausts once per day when the applicable bag leak detection system malfunctions, fails or otherwise needs repair.

Change 13:

Since the operating parameters of the control devices for the green anode baking ring furnace, dross cooling operation, pitch fume treatment system, and the anode butt blast machine have changed, Conditions D.1.18 and D.1.20(c)(1) and (g) (now Conditions D.1.19 and D.1.21(d)(1) and (h)) will be revised as follows:

D.1.18 19 Bag Leak Detection Alarm Activation

In the event that a bag leak detection system alarm is activated for any reason, the same corrective actions specified in the CRP for use during periods of startup, shutdown, and malfunction, shall be followed to correct the cause for the alarm, regardless of whether the alarm is caused by a malfunction as defined, the Permittee shall take the following response steps:

- (a) For the ring furnace A-446 pollution control system **and the pitch fume treatment pollution control system**, which ~~is a~~ **are** multi-compartment **multi-reactor** units, corrective actions shall be initiated for the affected compartment in accordance with the CRP (SSM **and Parametric Monitoring**) plan within one (1) hour. **For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.**

~~In the event of baghouse failure, operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B - Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.~~

- (1) If operations continue at the green anode baking ring furnace after bag failure is observed and two (2) of the three (3) reactor sections of the A-446 pollution control system have been in operation, the failure shall be addressed by**

shutting down the reactor section that the failure has occurred at and starting up the reactor section that is not in operation. If it will be ten (10) days or more after the failure, is observed before the failed reactor section will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date that the failed reactor section will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

(2) If operations continue at the baghouse portion of the pitch fume treatment system after bag failure is observed, the failure shall be addressed by conducting visible emissions notations once per day or by calculating daily particulate concentrations. If it will be ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

- (b) For the four (4) dross cooling operation baghouses which are single compartment baghouses, when more than one (1) of the four (4) units fail **one (1) large baghouse fails or when more than two (2) of the four (4) baghouses fail**, if failure is indicated by an opacity violation or a bag leak detection alarm activation that is not a false alarm, or if bag failure is determined by other means, such as daily checks of the particulate concentration readings from electrodynamic bag leak detectors or visible emissions notations, ~~failed units and then~~ the associated process will be shut down immediately until the failed units have been repaired or replaced **a sufficient number of failed units have been brought back on-line to meet the minimum operating criteria specified by the Compliance Response Plan**. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B C - Emergency Provisions).
- (c) For the anode butt blast machine baghouse which is a single compartment baghouse, if failure is indicated by an opacity violation or a bag leak detection alarm activation that is not a false alarm, or if bag failure is determined by other means, such as daily checks of the particulate concentration readings from electrodynamic bag leak detectors or visible emissions notations, then the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

The requirements of this condition shall supersede the requirements of Conditions D.1.8 and D.1.9 of SSM 173-14145-00007, issued on July 7, 2001 and Condition D.1.19 of SSM 173-15661-00007, issued on August 23, 2002.

~~D.1.20~~ 21 Record Keeping Requirements

~~(e)~~ (d) To document compliance with Conditions D.1.6 and D.1.15:

- (1) Records of the A446 outlet SO₂ emission rates and of the dry alumina scrubber operations shall be maintained for the most recent twenty-four (24) month period and

made available to the OAQ upon request.

Records of the dry alumina scrubber operations shall include the following:

- (A) An estimate of the daily average alumina feed rates in pounds per hour per reactor; **and**
 - ~~(B) The time periods when either of the reactors is out of service; and~~
 - ~~(C)~~ **(B)** The time periods when ~~either any~~ of the reactors ~~is~~ **are** out of service and summary of all maintenance (routine, preventative or malfunction related) ~~done performed~~ on the A446 system.
- ~~(g)~~ **(h)** To document compliance with Condition D.1.48 **19**, the Permittee shall maintain records of the occurrences of all bag leak detection alarms and the response steps.

Condition No Longer Necessary For This Modification But Not Superseded

- (a) Condition C.11 of SSM 173-15661-00007, issued on August 27, 2002 has not been included because this source operates a continuous parametric monitoring system in accordance with 40 CFR 63, Subpart LL, not the requirements of a continuous emission monitoring system. The requirements of 40 CFR 63, Subpart LL are covered in Section D.1 of SSM 173-15661-00007. Thus, it is no longer necessary to include Condition C.11 of SSM 173-15661-00007 in the proposed modification.
- (b) Condition D.1.4 of SSM 173-15661-00007, issued on August 27, 2002, was not included in this modification because nonapplicability conditions are no longer included in Part 70 Operating Permits, but are included in the Technical Support Documents of those permits to explain why requirements are no longer applicable. However, Condition D.1.4 of SSM 173-15561-00007 will not be superseded until the Part 70 Operating Permit is issued since the nonapplicability requirements in that condition have been accurately stated.

Appeal Resolutions

As a result of the preceding proposed changes to SSM 173-15661-00007, issued on August 23, 2002, this modification will result in the resolution of issues raised in Section 6 of Cause No. 01-A-J-2768 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-14145-00007), received on July 31, 2001, and Section 6 of Cause No. 02-A-J-2948 (Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Effectiveness (Modification No. 173-15661-00007), received on September 16, 2003 without an adjudicatory hearing.

Issue 1:

In Section 6(a) of Cause No. 02-A-J-2948, the source questions the addition of the Section 112(j) "MACT hammer" Part 2 application requirements in Condition C.19 of SSM 173-15661-00007 after public notice. The source states that the requirements of 40 CFR 60 Subpart LL exempted the ring furnace from the Section 112(j) requirements and contends that there were no other units in the Green Anode Production Mill being modified to warrant the addition of Condition C.19 of SSM 173-15661-00007.

Resolution 1:

Facilities subject to the requirements of 40 CFR 63 Subpart LL are not covered in the exemption to the requirements of the Section 112(j) "MACT Hammer" requirements. In addition, the green anode baking ring furnace is a "major source" of HAPs. Furthermore, at the time SSM 173-15661-00007 was issued, it was not known by IDEM, OAQ whether or not the green anode baking ring furnace was going to be subject to the requirements of the proposed NESHAP Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters).

However, it has now been determined that the green anode baking ring furnace will not be subject to the requirements of the proposed NESHAP Subpart DDDDD since the green anode baking ring furnace is a direct fired combustion unit. Therefore, the Section 112(j) "MACT Hammer" requirements are not applicable to the rebuilt green anode baking ring furnace. As a result, Condition C.19 of 173-15661-00007 will not be included in this modification.

Condition C.19(b) of SSM 173-15661-00007 states:

"Notwithstanding paragraph (a), the Permittee is not required to submit a Part 2 MACT Application if the Permittee no longer meets the applicability criteria of 40 CFR 63.50 by the application deadline in 40 CFR 63.52(e)(1). For example, the Permittee would not have to submit a Part 2 MACT Application if, by the application deadline:

- (1) The source is no longer a major source of hazardous air pollutants, as defined in 40 CFR 63.2;
- (2) The source no longer includes one or more units in an affected source category for which the U.S. EPA failed to promulgate an emission standard by May 15, 2002; or
- (3) The MACT standard or standards for the affected source categories included at the source are promulgated."

Since the Alcoa, Inc. - Warrick Operations submitted a Section 112(j) Part 1 application to IDEM, OAQ for the entire source on May 15, 2002 and the source does not need to submit a Section 112(j) Part 2 application for the green anode baking ring furnace, the dross cooling operation, pitch fume treatment system, and the anode butt blast machine, the source has satisfied the requirements of Condition C.19 of SSM 173-15661-00007 in regards to the ring furnace modification. As a result, IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that the exclusion of Condition C.19 of SSM 173-15661-00007 from this modification will resolve all issues concerning Section 6(a) of Cause No. 02-A-J-2948.

Issue 2:

In Section 6(b) of Cause No. 02-A-J-2948, the source disputes the justification for IDEM, OAQ to require emission limits as well as testing on Green Anode Production Mill in Conditions D.1.3(h) through (aa) and D.1.12(d) of SSM173-15561-00007 for the fresh petroleum coke screening, fresh petroleum coke hammermill, fresh petroleum coke intermediate classifier, ball mill classifier, coal tar pitch receiving, butts, pitch, and fresh coke mixing, green anode forming operation, anode butt blast machine, anode butts impactor, the anode crushed butts storage, anode busbar cleaning, and the finished anode cast ironing process to render the requirements of 326 IAC 2-2 not applicable to the modification to rebuild the green anode baking ring furnace. Specifically, the source questioned IDEM, OAQ's interpretation of the definition of major PSD modification pursuant to 326 IAC

2-2-1(W) and cited upcoming US EPA New Source Review reforms to justify their petition.

Resolution 2:

The green anode baking ring furnace has been rebuilt to a smaller capacity from that permitted by SSM 173-15661-00007. As a result, there is no longer increased utilization of the upstream and downstream emission units in the Green Anode Production Mill which has caused Conditions D.1.3 and D.1.12(d) of SSM 173-15661-00007 to be revised in the proposed modification. IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that Conditions D.1.3 and D.1.12 of the proposed modification will resolve all issues concerning Section 6(b) of Cause No. 02-A-J-2948.

See Changes 4 and 9 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Conditions D.1.3 and D.1.12 of SSM 173-15661-00007.

Issue 3:

In Section 6(c) of Cause No. 02-A-J-2948, the source contests that 40 CFR 63 Subpart LL does not require that the baghouse and dry alumina scrubber be in operation at all times, but rather requires corrective actions specified in the SSM Plan to be initiated. As a result, the source contends that Conditions D.1.13(a) and D.1.14 should be revised to provide the operational flexibility for the A-446 Pollution Control system that 40 CFR 63 Subpart LL allows.

Resolution 3:

As part of August 4, 2003 modification application, Alcoa, Inc. - Warrick Operations provided descriptive information on the A-446 pollution control system that was not included in the March 5, 2002 application for SSM 173-15661-00007. In addition, the operation of the A-446 pollution control system has changed, such that the source can be permitted to have the operational flexibility and still comply with all applicable emission limitations. As a result, Conditions D.1.13(a) and D.1.14 of SSM 173-15661-00007 have been revised in the proposed modification to represent the current operations of the A-446 pollution control system. IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that Conditions D.1.13(a) and D.1.14 of the proposed modification will resolve all issues concerning Section 6(c) of Cause No. 02-A-J-2948.

See Changes 10 and 11 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Conditions D.1.13(a) and D.1.14 of SSM 173-15661-00007.

Issue 4:

In Section 6(a) of Cause No. 01-A-J-2768, the source questioned the regulatory or statutory authority for requiring a pressure gauge specification requirement in Condition C.10 of SSM 173-14145-00007. In addition, the source also disputed the ranges required in the pressure gauge requirement.

Resolution 4:

As part of the August 4, 2003 application for this modification, Alcoa, Inc. - Warrick Operations requested that this modification combine and replace the requirements from SSM 173-14145-00007 and SSM 173-15661-00007. Since the operation of the baghouse located at the anode butt blast machine is identical to those operated at the green anode baking ring furnace, dross cooling operation, and pitch fume treatment system, the baghouse as well as the pressure gauge requirements of this modification will also apply to the anode butt blast machine. As a result, Condition C.10 has been replaced and superseded by Condition C.13 of the proposed modification. IDEM, OAQ and

Alcoa, Inc. - Warrick Operations have agreed that Condition C.13 of the proposed modification will resolve all issues concerning Section 6(a) of Cause No. 01-A-J-2768.

See Change 2 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Condition C.13 of SSM 173-15661-00007.

Issue 5:

In Section 6(b) of Cause No. 01-A-J-2768, the source is disputing the regulatory or statutory authority for requiring visible emission notations to be performed once per shift on the anode butt blast machine in Condition D.1.6 of SSM 173-14145-00007.

Resolution 5:

A bag leak detection system has already been installed at the anode butt blast machine. For similar baghouses that have bag leak detection system, Condition D.1.17(j) of SSM 173-15661-00007 (Condition D.1.18(j) in the proposed modification) required visible emission notations to be taken once per day when the bag leak detection system malfunctions. Condition D.1.18 in the proposed modification will include the bag leak detection system requirements for the anode blast machine. As a result Condition D.1.18 will supersede the requirements in Condition D.1.6 of SSM 173-14145-00007. IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that Condition D.1.18 of the proposed modification will resolve all issues concerning Section 6(b) of Cause No. 01-A-J-2768.

See Change 12 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Condition D.1.17 of SSM 173-15661-00007.

Issue 6:

In Section 6(c) of Cause No. 01-A-J-2768, the source questions the value on relying on pressure drop as a compliance parameter for a baghouse as well as the regulatory or statutory authority to require the source to monitor pressure drop across a baghouse as required in Condition D.1.7 of SSM 173-14145-00007. In addition, the source suggests that the Preventive Maintenance Plan should provide for recording pressure drop only when the bag leak detection system is not operating properly.

Resolution 6:

The baghouse operations at the anode butt blast machine are similar to the baghouses permitted in SSM 173-15661-00007. Conditions D.1.17 and D.1.18 of SSM 173-15661-00007 contain specific requirements for baghouses that operate a bag leak detection system with a bag leak detection alarm. SSM 173-15661-00007 does not require the source to monitor pressure drop since corrective actions are already prescribed in the Compliance Response Plan/Startup Shutdown Malfunction Plan as well as the Parametric Monitoring Plan if the bag leak detection system alarms sound. As a result, the baghouse for the anode butt blast machine has been included in the baghouse compliance monitoring requirements of Conditions D.1.18 and D.1.19 in the proposed modification. IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that Conditions D.1.18 and D.1.19 of the proposed modification will resolve all issues concerning Section 6(c) of Cause No. 01-A-J-2768.

See Changes 12 and 13 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Conditions D.1.17 and D.1.18 of SSM 173-15661-00007.

Issue 7:

In Section 6(d) of Cause No. 01-A-J-2768, the source expressed concerns in terms of the ambiguous nature of the requirements in Condition D.1.8 of SSM 173-14145-00007. The source stated that it was unclear when and what baghouses should be inspected and expressed concerns about damaging properly functioning baghouse as a result of removing a baghouse for visual inspection. The source suggested language to clarify the baghouse inspection condition.

Resolution 7:

Since the baghouse requirements in Conditions D.1.18 and D.1.19 in the proposed modification have included the baghouse for the anode butt blast machine, the baghouse inspections on the anode butt blast machine baghouse required in Condition D.1.8 of SSM 173-14145-00007 are no longer necessary. The source is operating a bag leak detection system with alarm activation that will cause corrective actions to be initiated if any malfunction occurs without inspections taking place. IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that Conditions D.1.18 and D.1.19 of the proposed modification will resolve all issues concerning Section 6(d) of Cause No. 01-A-J-2768.

See Changes 12 and 13 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Conditions D.1.17 and D.1.18 of SSM 173-15661-00007.

Issue 8:

In Section 6(e) of Cause No. 01-A-J-2768, the source contested that the PSD limit in Condition D.1.2 of SSM 173-14145-00007 was calculated without the use of baseline emissions. The source claimed that the baseline emissions should have been 29.02 tons of PM per year and 0.11 tons of PM₁₀ per year and requested that the emission limits in Condition D.1.2 of SSM 173-14145-00007 be revised to 12.31 pounds of PM per hour and 3.43 pounds of PM₁₀ per hour.

Resolution 8:

IDEM, OAQ did not evaluate past actual emissions versus future potential emissions which is the standard analysis used for evaluating modifications to existing emission units at major PSD sources. The source had requested that PSD netting credit be the use of baseline emissions given to the anode butt blast machine during the public comment period of SSM 173-14145-00007. In Condition D.1.3 of SSM 173-15661-00007, the source provided a PSD netting analysis on the anode butt blast machine for the purposes of evaluating the increased utilization of that emission unit. The baseline emissions used for that PSD netting analysis were from the average past actual emissions of 2000 and 2001. The PSD netting credit for the anode butt blast machine should have dated back two (2) years from the submittal of the application for SSM 173-14145-00007, on March 21, 2001.

However, as part of the August 4, 2003 source modification application, the source requested stricter limitations on the anode butt blast machine from those listed in Condition D.1.2 of SSM 173-14145-00007 and requested in Section 6(e) of Cause No. 01-A-J-2768. Since the source is electing to limit the anode butt blast machine for the ring furnace modification, the PSD netting for the anode butt blasting in this modification has been based on the average past actual emissions of the anode butt blast machine from 2000 and 2001. As a result, the PM and PM₁₀ limits for the anode butt blast machine in Condition D.1.3(d)(1) and (2) of the proposed modification will supersede the limits in Condition D.1.2 of SSM 173-14145-00007. IDEM, OAQ and Alcoa, Inc. - Warrick Operations have agreed that Conditions D.1.3(d)(1) and (2) of the proposed modification will resolve all issues concerning Section 6(e) of Cause No. 01-A-J-2768.

See Change 4 in the Changes to Existing Source Modifications section of this document for details regarding revisions to Conditions D.1.3 of SSM 173-15661-00007 that will cause Condition D.1.2

SSM 173-14145-00007 to be superseded.

Conclusion

The operation of the green anode baking ring furnace, the dross cooling operation, the pitch fume treatment system, and the anode butt blast machine shall be subject to the conditions of the attached proposed Significant Source Modification No. 173-17780-00007.

Company Name: Alcoa, Inc. - Warrick Operations
 Plant Location: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
 Significant Source Modification: 173-17780
 Plt ID: 173-00007
 Permit Reviewer: Michael S. Schaffer
 Date: August 4, 2003

Green Anode Baking Ring Furnace Emissions

Pollutant	Limited No. of Green Anodes (tons/yr)	Emission Factor (lbs/ton)	Green Anode (tons/hr)	Potential Emissions (lbs/hr)	Potential Emissions (lbs/yr)	Potential Emissions Before Controls (tons/yr)	Control Efficiency	Potential Emissions After Controls (tons/yr)	Potential Emissions After Limits & Controls (tons/yr)
PM	187645	2.283	21.42	48.89	428299	214.1	70.38%	63.43	63.43
PM-10	187645	13.256	21.42	283.94	2487345	1243.7	70.39%	368.3	368.3
SO2	187645	3.690	21.42	79.0	692389	346.2	70.01%	103.8	103.8
NOx	187645	0.390	21.42	8.4	73179	36.6	0.00%	36.6	36.6
CO	187645	3.565	21.42	76.4	668852	334.4	0.00%	334.4	334.4
VOC	187645	0.370	21.42	7.9	69427	34.7	0.00%	34.7	34.7
TF	187645	0.580	21.42	12.429	108879	54.44	94.42%	3.04	3.04
HAPs									
Acetophenone	187645	0.00004	21.42	0.0008	6.72	0.003	0.00%	0.003	0.0034
Benzene	187645	0.005	21.42	0.097	852	0.426	0.00%	0.426	0.426
Dibenzofuran	187645	0.00002	21.42	0.0005	3.96	0.00198	0.00%	0.00198	0.00198
Ethylbenzene	187645	0.0001	21.42	0.002	13.6	0.0068	0.00%	0.0068	0.0068
Formaldehyde	187645	0.005	21.42	0.113	993	0.496	0.00%	0.496	0.496
Napthalene	187645	0.009	21.42	0.192	1685	0.843	0.00%	0.843	0.843
Phenol	187645	0.00004	21.42	0.001	8.31	0.00416	0.00%	0.00416	0.00416
POM	187645	0.180	21.42	3.86	33775	16.9	0.00%	16.9	16.9
Toluene	187645	0.001	21.42	0.015	135	0.0674	0.00%	0.0674	0.0674
Xylene	187645	0.0003	21.42	0.006	52.7	0.0264	0.00%	0.0264	0.0264

Pollutant	Limited Ton Pitch Loss Per Hour	Unlimited Ton Pitch Loss Per Hour	Tons of Lead Per Ton of Pitch	Potential Emissions (lbs/hr)	Potential Emissions (lbs/yr)	Maximum Uncontrolled Emissions (tons/yr)	Control Efficiency	Maximum Controlled Emissions (tons/yr)	Potential Emissions After Limits & Controls (tons/yr)
Pb	1.07	1.26	0.00006	0.124	1088	0.544	70.58%	0.160	0.160

Total HAPs: **19.3** **18.9** **18.9**

Methodology

PM, PM-10 and Total Flouride emission factors are based on the equation: maximum allowable emission factors
 SO2 emission factors are uncontrolled emission factors, a minimum control efficiency of 69.99% is the minimum control efficiency required to reduce the SO2 emission factor to achieve the emission rate 1.03lbs/ton
 A 70.01% control efficiency was used to calculate the potential SO2 emissions based on a previously submitted graph feed rates
 NOx, CO, VOC, emission factors are based on 2000 stack tests
 emission factor x desired grain loading input = maximum emission (lbs/hr)
 Pb Emissions in (lbs/hr)= ton pitch loss per hour x tons of lead per tons pitch x 2000 lbs / ton (uncontrolled)
 Pb Emissions in (lbs/hr) is representative of an uncontrolled emission factor 2.27 lbs/ton,
 Pb control efficiency = (uncontrolled emission factor - controlled emission factor / uncontrolled emission factor) x 100

Net Emission For The Rebuilt Green Anode Baking Ring Furnace

Pollutant	2000 Actual Emissions (tons/yr)	2001 Actual Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Rebuilt Furnace Net Emissions (tons/yr)
PM	13.8	107	60.36	3.07
PM10	80.7	624	352.5	15.8
SO2	73.0	55.0	64.0	39.8
NOx	31.7	26.7	29.2	7.38
CO	283	238	260.6	73.8
VOC	30.1	25.4	27.7	7.00
Pb	0.040	0.230	0.135	0.025
TF	0.120	0.160	0.140	2.90

Note that Actual PM10 Emissions are PM emissions x 5.84 based on latest broken bag detection calibrations
 Rebuilt Furnace Net Emissions = Potential to Emit of Rebuilt Furnace - Average 2000 and 2001 Actual Emission

Appendix A: Emissions Calculations

Company Name: Alcoa, Inc. - Warrick Operations
Plant Location: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
Significant Source Modification: 173-17780
Pit ID: 173-00007
Permit Reviewer: Michael S. Schaffer
Date: August 4, 2003

Dross Cooling Room Emissions

Pollutant	Limited Dross Throughput (tons/yr)	Emission Factor (lbs/ton)	Potential Emissions (lbs/yr)	Potential Emissions Before Controls (tons/yr)	Control Efficiency	Potential Emissions After Controls (tons/yr)
PM	38000	0.890	33820	16.9	50.05%	8.45
PM-10	38000	0.910	34580	17.3	50.00%	8.65
Pb	38000	0.00001	0.384	0.0002	50.05%	0.000096

Note: Potential Emissions after controls and a throughput limit of 38,000 tons/yr per year is equivalent to an emission factor of 0.455 pounds of PM-10 per ton of dross.

Emission Factors are PM and PM-10 measured at the Baghouse inlets in December 2001. Lead was calculated to be 1.11E-05 of the measured PM.

Dross Cooling Room Net Emissions

Pollutant	2000 Emissions (tons/yr)	2001 Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Dross Cooling Room Net Emissions (tons/yr)
PM	16.09	12.70	14.39	-5.95
PM-10	16.45	12.98	14.72	-6.07
Pb	0.000183	0.000144	0.000163	-0.00007

Dross Cooling Operation Net Emissions = Potential to Emit of Dross Cooling Operations - Average 2000 and 2001 Actual Emission

Appendix A: Emission Calculations

Company Name: Alcoa, Inc. - Warrick Operations
Plant Location: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
Significant Source Modification: 173-17780
Pit ID: 173-00007
Permit Reviewer: Michael S. Schaffer
Date: August 4, 2003

Limited Emissions From The Anode Butt Blast Machine

Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	PM Emission Rate after Controls (lb/hr)	PM Emission Rate after Controls (tons/yr)
0.0100	12000	1.0286	4.51

Note that the source has elected to take a 0.01 grains per dry standard cubic foot limit as part of this modification

Methodology

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

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

Limited PM-10 and Lead Emissions From The Anode Butt Blast Machine

Pollutant	PM Emission Rate after controls (tons/yr)	Ration of Pollutant to PM Emission Rate (ton of pollutant/ton of PM)	Pollutant Emission Rate after Controls (tons/yr)
PM-10	4.51	0.8333	3.75
Pb	4.51	0.00001	0.00004

Note that PM-10 Ratio is based on Alcoa's 2001 broken bag calibration test

Methodology

Pollutant Emission Rate after Controls (tons/yr) = PM Emission Rate After Controls (tons/yr) * Ratio of Pollutant to PM Emission Rate (tons of pollutant / 1 ton of PM)

Revised Net Emission For The Anode Butt Blast Machine

Pollutant	2000 Actual Emissions (tons/yr)	2001 Actual Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Anode Butt Blast Machine Net Emissions (tons/yr)
PM	28.6	18.4	23.5	-19.0
PM10	0.108	0.070	0.089	3.67
Pb	0.00029	0.00018	0.00024	-0.0002

Note that 1994 stack test results were 1.98 lbs of PM per ton of butts processed and 0.0075 lbs PM-10 per ton of butts processed

Stack test data also indicated that lead comprised 9.55 ppm of PM emissions

Anode Butt Blast Machine Net Emissions = Limited Potential to Emit of Anode Butt Blast Machine - Average 2000 and 2001 Actual Emission

Appendix A: Emissions Calculations

Company Name: Alcoa, Inc. - Warrick Operations
 Plant Location: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
 Significant Source Modification: 173-17780
 Plt ID: 173-00007
 Permit Reviewer: Michael S. Schaffer
 Date: August 4, 2003

Scalper Step Cutter Emissions

Pollutant	Aluminum Chips Scalped (tons/year)	Emission Factor (lbs/ton)	Potential Emissions (lbs/yr)	Potential Emissions (tons/yr)
PM	60000	0.143	8580	4.29
PM-10	60000	0.143	8580	4.29

Maximum chip throughput was specified in MSM 173-14944, issued on December 5, 2001

Potential Emissions (tons per year) = Alluminum Chips Scalped (tons/year)*Emission Factor (lbs/ton)*(1 ton/2000lbs)

Pound per ton emission rates are based on Alcoa stack tests performed in 1996

Lead Emissions From The Scalper Step Cutter

Pollutant	PM Emission Rate after controls (tons/yr)	Ratio of Pollutant to PM Emission Rate (ton of pollutant/ton of PM)	Pollutant Emission Rate after Controls (tons/yr)
Pb	4.29	0.00005	0.00021

Lead Comprises a maximum of 0.005% by weight of aluminum chips, thus PTE is based on that value.

Scalper Step Cutter Net Emissions

Pollutant	2000 Emissions (tons/yr)	2001 Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Scalper Step Cutter Net Emissions (tons/yr)
PM	2.93	2.28	2.61	1.68
PM-10	2.93	2.28	2.61	1.68
Pb	0.00015	0.00011	0.00013	0.00008

Alcoa used same methodologies as done for PTE to obtain baseline emissions

Scalper Step Cutter Net Emissions = Potential to Emit of Scalper Step Cutter - Average 2000 and 2001 Actual Emission

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

**Company Name: Alcoa, Inc. - Warrick Operations
Address City IN Zip: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
Significant Source Modification: 173-17780
Plt ID: 173-00007
Reviewer: Michael S. Schaffer
Date: August 4, 2003**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Average Throughput MMCF/yr	Air Make-up Unit in Green anode Production Mill
6.88	60.225	15.056	

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	SO2	NOx	VOC	CO	Pb
	1.90	7.60	0.600	100 **see below	5.50	84.0	0.001
Potential Emission tons/yr	0.057	0.229	0.018	3.01	0.166	2.53	0.00002
Average Past Actual Baseline Emissions tons/yr 2000 and 2001	0.014	0.057	0.005	0.753	0.041	0.632	0.000004

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Average Throughput (mmcf/yr) = (15.056 mmcf in 2000 + 15.056 mmcf in 2001)/2

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

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

Past Actual Baseline Emissions (tons/yr) for natural gas-combustion are considered Contemporaneous Increases in this modification

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

**Company Name: Alcoa, Inc. - Warrick Operations
Address City IN Zip: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
Significant Source Modification: 173-17780
Plt ID: 173-00007
Reviewer: Michael S. Schaffer
Date: August 4, 2003**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Average Throughput MMCF/yr	Three (3) Boilers Rated at 12 MMBtu/hr each
36.00	315.360	97.950	

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	SO2	NOx	VOC	CO	Pb
	1.90	7.60	0.600	100 **see below	5.50	84.0	0.001
Potential Emission tons/yr	0.300	1.198	0.095	15.77	0.867	13.25	0.00008
Average Past Actual Baseline Emissions tons/yr 2000 and 2001	0.093	0.372	0.029	4.90	0.269	4.11	0.00002

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

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Average Throughput (mmcf/yr) = (114.4 mmcf in 2000 + 81.5 mmcf in 2001)/2
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Past Actual Baseline Emissions (tons/yr) for natural gas-combustion are considered Contemporaneous Increases in this modification

**Appendix A: Emissions Calculations
Additional PSD Netting**

Company Name: Alcoa, Inc. - Warrick Operations
Plant Location: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
Significant Source Modification: 173-17780
Plt ID: 173-00007
Permit Reviewer: Michael S. Schaffer
Date: August 4, 2003

Chemical Conversion Coating Line Net Emissions

Pollutant	2000 Emissions (tons/yr)	2001 Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Future Potential Emissions (tons/yr)	Chemical Conversion Coating Line Net Emissions (tons/yr)
VOC	0.00	0.00	0.00	0.540	0.540

Note that the potential emissions calculations for this emission unit has been included in Alcoa's Part 70 Application

Diesel Engine Powered Fire Suppression Net Emissions

Pollutant	2000 Emissions (tons/yr)	2001 Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Future Potential Emissions (tons/yr)	Diesel Engine Powered Fire Suppression Unit Net Emissions (tons/yr)
CO	0.00	0.00	0.00	0.010	0.010
NOx	0.00	0.00	0.00	0.050	0.050

Note that the potential emissions calculations for this emission unit has been included in Alcoa's Part 70 Application

Lime Silo

Pollutant	2000 Emissions (tons/yr)	2001 Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Future Potential Emissions (tons/yr)	Diesel Engine Powered Fire Suppression Unit Net Emissions (tons/yr)
PM	0.170	0.170	0.170	0.320	0.150
PM-10	0.170	0.170	0.170	0.320	0.150

Emissions from this Emission Unit are as reported in Alcoa's 2000 and 2001 emission statement

Since the Lime output in 2001 was 585 tons, the potential emissions in Alcoa's Part 70 application will be revised to 0.320 tons per year

1998 Revision to Hot Mill Lubrication System

Pollutant	Increase in Potential Emissions (tons/yr)
VOC	21.0

Alcoa has elected to not use the baseline emission credit for this emission unit. Therefore, the increase in PTE of this emission unit will be considered a contemporaneous increase.

The increase in potential to emit is based on a Registration 173-9960-00007, issued on August 8, 1998

Appendix A: Emissions Calculations

Company Name: Alcoa, Inc. - Warrick Operations
Plant Location: Jct. IN Hwys. 66 & 61, Newburgh, Indiana 47629-0010
Significant Source Modification: 173-17780
Plt ID: 173-00007
Permit Reviewer: Michael S. Schaffer
Date: August 4, 2003

PSD Emission Netting For This Modification

Pollutant	Rebuilt Furnace Net Emissions (tons/yr)	Dross Cooling Operations Net Emissions (tons/yr)	Anode Butt Blast Machine Net Emissions (tons/yr)	Pitch Fume Treatment and Dry Coke Scrubber Net Emissions (tons/yr)	Scalper Step Cutter Net Emissions (tons/yr)	Air Make-up Unit Net Emissions (tons/yr)	Three (3) 12MMBtu Boilers Net Emissions (tons/yr)
PM	3.07	-5.95	-19.0	-4.66	1.68	0.014	0.093
PM-10	15.8	-6.07	3.67	-2.05	1.68	0.057	0.372
SO ₂	39.8	0.00	0.00	0.00	0.00	0.005	0.029
NO _x	7.38	0.00	0.00	0.00	0.00	0.753	4.90
CO	73.8	0.00	0.00	0.00	0.00	0.632	4.11
VOC	7.00	0.00	0.00	-1.67	0.00	0.041	0.269
Pb	0.025	-0.00007	-0.00019	-0.00004	0.00021	0.000004	0.00002
TF	2.90	0.00	0.00	0.00	0.00	0.00	0.00

Pollutant	Chemical Coating Line Net Emissions (tons/yr)	Diesel Engine Powered Fire Suppression Net Emissions (tons/yr)	Lime Silo Net Emissions (tons/yr)	Hot Mill Lubrication System Net Emissions (tons/yr)	Overall Net Emissions from Modification** (tons/yr)
PM	0.00	0.00	0.150	0.00	-24.6
PM-10	0.00	0.00	0.150	0.00	13.6
SO ₂	0.00	0.00	0.00	0.00	39.8
NO _x	0.00	0.050	0.00	0.00	13.1
CO	0.00	0.010	0.00	0.00	78.6
VOC	0.540	0.00	0.00	21.00	27.2
Pb	0.00	0.00	0.00	0.00	0.025
TF	0.00	0.00	0.00	0.00	2.90

**** Note: Overall Net Emissions from Modification = The Rebuilt Furnace Net Emissions + Dross Cooling Room Net Emissions + Anode Butt Blast Machine Net Emissions + Scalp Step Cutter Net Emissions + Three (3) Boilers Net Emissions + Air Make-up Unit Net Emissions + Chemical Coating Line Net Emissions + Diesel Engine Powered Fire Suppression Net Emissions + Lime Silo Net Emissions + Hot Mill Lubrication System Net Emissions**