

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Aluminum Recovery Technologies, Inc.
2170 Production Road
Kendallville, Indiana**

is hereby authorized to construct

an aluminum foundry, consisting of the following equipment:

- (a) one (1) rotary dross furnace (ID Furnace #1), with a maximum melt rate of 12,000 pounds of aluminum scrap per hour, with one (1) lime injected baghouse (ID Baghouse A) for particulate matter control, exhausting through one (1) stack (ID No. V1); and
- (b) one (1) natural gas-fired turnings dryer (ID Dryer #1), having a maximum heat input capacity of 4.0 million British thermal units (MMBtu) per hour, with a maximum capacity of processing 20,000 pounds of aluminum scrap per hour, with one (1) lime injected baghouse (ID Baghouse A) and one (1) natural gas-fired afterburner (ID Afterburner), with a maximum heat input capacity of 6.0 MMBtu per hour, for particulate matter control, exhausting through one (1) stack (ID No. V1).

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-113-10429-00071	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).

- (e) Pursuant to 326 IAC 2-7-4, the Permittee shall apply for a Title V operating permit within twelve (12) months after the source becomes subject to Title V. This 12-month period starts at the postmarked submission date of the Affidavit of Construction. If the construction is completed in phases, the 12-month period starts at the postmarked submission date of the Affidavit of Construction that triggers the Title V applicability. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
 - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
 - (a) In the event that ownership of this aluminum foundry is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
 - (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
- (a) Violation of any conditions of this permit.
 - (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
 - (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
 - (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
 - (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, (local agency if applicable) or other public official having jurisdiction.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for particulate matter from the baghouse controlling the rotary dross furnace (ID Furnace #1) and the turnings dryer (ID Dryer #1) within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
- (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.
 - (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
 - (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
 - (d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
 - (e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

Malfunction Condition

8. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

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

Annual Emission Reporting

9. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

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

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

Particulate Matter (PM) Limitation

11. That pursuant to 326 IAC 6-3 (Process Operations), the following shall apply:
- (a) The baghouse (ID Baghouse A) shall be in operation at all times when the rotary dross furnace (ID Furnace #1) is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 13.6 pounds per hour.
 - (b) The turnings dryer (ID Dryer #1) shall not exceed the allowable particulate matter (PM) emission rate of 19.2 pounds per hour.
 - (c) Any change or modification which may increase the potential to emit particulate matter to 100 tons per year or greater from the equipment covered in this permit shall obtain a PSD permit pursuant to 326 IAC 2-2 before such change may occur.

Baghouse Operating Condition

12. That the baghouse (ID Baghouse A) shall be operated at all times when the rotary dross furnace (ID Furnace #1) is in operation.
- (a) The Permittee shall take readings of the total static pressure drop across the baghouse, at least once per week. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 2.0 and 6.0 inches of water. The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.
 - (b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
 - (c) The gauge employed to take the pressure drop across the baghouses or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within $\pm 2\%$ of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.
 - (d) An inspection shall be performed each calendar quarter of the all the baghouses. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.
 - (e) In the event that a bag's failure has been observed:
 - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
 - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

13. That visible emission notations of all exhaust to the atmosphere from the baghouse (ID Baghouse A) shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80% of the time, the process is in operation, not counting start up or shut down time.

- (b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
- (c) 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 and abnormal visible emissions for that specific process.
- (d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

14. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

Open Burning

15. That the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

Emergency Reduction Plans

16. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

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

within 180 calendar days from the date on which this source commences operation.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - (317) 233-5967**

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

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ? _____, 100 LBS/HR VOC ? _____, 100 LBS/HR SULFUR DIOXIDE ? _____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ? _____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

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

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON THE NEXT PAGE ? Y N

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

COMPANY: Aluminum Recovery Technologies, Inc. PHONE NO. (765) 472-3951

LOCATION: (CITY AND COUNTY) Kendallville, Noble County

PERMIT NO. 113-10429 AFS PLANT ID: 113-00071 AFS POINT ID: _____ INSP: Doyle Houser
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/19____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION:

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/19____ AM/PM

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

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL * SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY:

TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

REV 3/96
(317)233-5967

*SEE NEXT PAGE

FAX NUMBER -

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

326 IAC 1-6-1

Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39

“Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

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

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

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: Aluminum Recovery Technologies, Inc.
 Source Location: 2170 Production Road, Kendallville, Indiana
 County: Noble
 Construction Permit No.: CP-113-10429-00071
 SIC Code: 3365
 Permit Reviewer: Trish Earls/EVP

The Office of Air Management (OAM) has reviewed an application from Aluminum Recovery Technologies, Inc. relating to the construction and operation of an aluminum foundry, consisting of the following equipment:

- (a) one (1) rotary dross furnace (ID Furnace #1), with a maximum melt rate of 12,000 pounds of aluminum scrap per hour, with one (1) lime injected baghouse (ID Baghouse A) for particulate matter control, exhausting through one (1) stack (ID No. V1); and
- (b) one (1) natural gas-fired turnings dryer (ID Dryer #1), having a maximum heat input capacity of 4.0 million British thermal units (MMBtu) per hour, with a maximum capacity of processing 20,000 pounds of aluminum scrap per hour, with one (1) lime injected baghouse (ID Baghouse A) and one (1) natural gas-fired afterburner (ID Afterburner), with a maximum heat input capacity of 6.0 MMBtu per hour, for particulate matter control, exhausting through one (1) stack (ID No. V1).

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
V1	Baghouse	24	5	60,000	200

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

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

A complete application for the purposes of this review was received on November 25, 1998.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (3 pages).

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	143.7	9636.8
Particulate Matter (PM10)	143.7	9636.8
Sulfur Dioxide (SO ₂)	--	0.03
Volatile Organic Compounds (VOC)	--	0.2
Carbon Monoxide (CO)	--	3.7
Nitrogen Oxides (NO _x)	--	4.4
Single Hazardous Air Pollutant (HAP)	--	0.0
Combination of HAPs	--	0.0

- (a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3-2. See attached spreadsheets for detailed calculations.
- (b) The allowable PM and PM10 emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of PM10 are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Noble County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Noble County has been classified as attainment or unclassifiable for PM10, sulfur dioxide (SO₂), and carbon monoxide (CO). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	48.2
PM10	48.2
SO ₂	0.0
VOC	0.2
CO	3.7
NO _x	4.4
Single HAP	0.0
Combination HAPs	0.0

- (a) This new source is **not** a major stationary source because even though it is one of the 28 listed source categories, it does not emit 100 tons per year or more of any regulated pollutant after control. Therefore, pursuant to 326 IAC 2-2 and 2-3, and 40 CFR 52.21, the PSD and Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is subject to the Part 70 Permit requirements because the potential to emit (PTE) before control of:

- (a) a criteria pollutant (PM10) is greater than or equal to 100 tons per year,
(b) a single hazardous air pollutant (HAP) is greater than or equal to 10 tons per year, or
(c) any combination of HAPs is greater than or equal to 25 tons/year.

This new source shall apply for a Part 70 (Title V) operating permit or a Federally Enforceable State Operating Permit (FESOP) within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

- (a) This source is not subject to the requirements of the New Source Performance Standard (NSPS), 326 IAC 12, (40 CFR 60.191, Subpart S (Primary Aluminum Reduction), because the source does not perform primary aluminum reduction as defined in 40 CFR 60.191. This source is a secondary aluminum foundry plant, therefore the requirements under 326 IAC 12, (40 CFR 60.191, Subpart S) do not apply.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(40 CFR Part 63) applicable to this source.

State Rule Applicability

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons/yr of PM₁₀. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)

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

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

326 IAC 6-3-2 (Process Operations)

The PM emissions from the rotary cross furnace (ID Furnace #1) shall be limited to 13.6 pounds per hour. The PM emissions from the turnings dryer (Dryer #1) shall be limited to 19.2 pounds per hour. These emission limits were calculated using the following:

Interpolation and extrapolation 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:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour
= 6.0 tons per hour for Furnace #1
= 10 tons per hour for Dryer #1

Potential PM emissions from Dryer #1 are 0.13 tons per year, therefore, the dryer is in compliance with 326 IAC 6-3-2. The controlled potential PM emissions from Furnace #1 are 11.0 pounds per hour. Therefore, the baghouse shall be in operation at all times that Furnace #1 is in operation in order to comply with this limit.

326 IAC 6-4 (Fugitive Dust Emissions)

This source is subject to 326 IAC 6-4 for fugitive dust emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), fugitive dust shall not be visible crossing the boundary or property line of a source. Observances of visible emissions crossing property lines may be refuted by factual data expressed in 326 IAC 6-4-2(1), (2) or (3).

326 IAC 11-1 (Emission Limitations for Specific Type of Operations)

Pursuant to 326 IAC 11-1-1, emission limitations are established for particulate matter from foundries. Particulate emissions from all foundries in operation on or before December 6, 1968 shall comply with the requirements set forth in section 2 of this rule and all foundries in operation after December 6, 1968, shall comply with 326 IAC 6-3. Since this source is a new foundry, it must comply with 326 IAC 6-3-2. Therefore, since this source is in compliance with 326 IAC 6-3-2, it is also in compliance with the requirements of 326 IAC 11-1.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) None of these listed air toxics will be emitted from this proposed construction.

Conclusion

The construction of this aluminum foundry will be subject to the conditions of the attached proposed **Construction Permit No. CP-113-10429-00071**.

Appendix A: Emission Calculations Emissions Summary

Company Name: Aluminum Recovery Technologies, Inc.
Address City IN Zip: 2170 Production Road, Kendallville, Indiana
CP: 113-10429
Pit ID: 113-00071
Reviewer: Trish Earls
Date: December 9, 1998

Allowable Emissions Definition (tons/year)

Emissions Generating Activity			
Pollutant	Dryer and Afterburner	Baghouse for Furnace and Dryer	TOTAL
PM	0.33	9636.50	9636.8
PM-10	0.33	9636.50	9636.8
SO ₂	0.03	0.00	0.0
NO _x	4.38	0.00	4.4
VOC	0.24	0.00	0.2
CO	3.68	0.00	3.7

Total emissions based on rated capacity at 8,760 hours/year.

New Source PSD Definition (tons/year)

Emissions Generating Activity			
Pollutant	Dryer and Afterburner	Baghouse for Furnace and Dryer	TOTAL
PM	1.66E-03	48.18	48.2
PM-10	1.66E-03	48.18	48.2
SO ₂	0.03	0.00	0.0
NO _x	4.38	0.00	4.4
VOC	0.24	0.00	0.2
CO	3.68	0.00	3.7

Total emissions based on rated capacity at 8,760 hours/year.

Appendix A: Emission Calculations
Natural Gas Combustion
MM Btu/hr 0.3 - < 100

Company Name: Aluminum Recovery Technologies, Inc.
Address City IN Zip: 2170 Production Road, Kendallville, Indiana
CP: 113-10429
Plt ID: 113-00071
Reviewer: Trish Earls
Date: December 9, 1998

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Baghouse Control Efficiency
10.0	87.6	99.50%

Heat Input Capacity includes:
 One (1) dryer (Dryer #1) rated at 4.0 MMBtu/hr and one (1) thermal oxidizer (Afterburner) rated at 6.0 MMBtu/hr.

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0	5.5	84.0
Potential Emissions in tons/yr	0.33	0.33	0.03	4.38	0.24	3.68
Controlled Emissions in tons/yr	1.66E-03	1.66E-03	0.03	4.38	0.24	3.68

Methodology:

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 50, Flue gas recirculation = 32

All PM is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors may be used to estimate PM10, PM2.5, and PM1 emissic

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

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2, SCC #1-01-006-02, #1-02-006-02, #1-03-006-02, #1-03-006-03

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

326 IAC 6-3-2 Compliance Calculations for Dryer #1

The following calculations determine compliance with 326 IAC 6-3-2 for process weight rates less than 60,000 pounds per hour:

$$\text{Limit} = 4.1 * (10.0 \quad 0.67) = 19.18 \text{ lb/hr or } 84.00 \text{ tons/yr}$$

Since controlled particulate matter emissions are less than 19.2 lbs/hr, Dryer #1 is in compliance with 326 IAC 6-3-2.

Appendix A: Process Particulate Emissions

Company Name: Aluminum Recovery Technologies, Inc.
Address City IN Zip: 2170 Production Road, Kendallville, Indiana
CP: 113-10429
Plt ID: 113-00071
Reviewer: Trish Earls
Date: December 9, 1998

Potential Emissions (tons/year)						
A. Baghouses						
Process	No. of Units	Grain Loading per Actual Cubic Foot of Outlet Air	Air to Cloth Ratio Air Flow (acfm/ft ²)	Total Filter Area (ft ²)	Control Efficiency	Total (tons/yr)
Baghouse A	1	0.02	3.1	20,700	99.50%	9636.50
Total Emissions Based on Rated Capacity at 8,760 Hours/Year						9636.50
Controlled Emissions (tons/year)						
A. Baghouses						
Process	No. of Units	Grain Loading per Actual Cubic Foot of Outlet Air	Air to Cloth Ratio Air Flow (acfm/ft ²)	Total Filter Area (ft ²)	Control Efficiency	Total (tons/yr)
Baghouse A	1	0.02	3.1	20,700	99.50%	48.18
Total Emissions Based on Rated Capacity at 8,760 Hours/Year and source controls						48.18
Note: It was conservatively assumed that the design grain loading of the baghouse was equal to the particulate matter emissions from Furnace #1.						

Methodology:

State Potential (uncontrolled):

$$\text{Baghouse (tons/yr)} = \text{No. Units} * \text{Loading (grains/acf)} * \text{Air/Cloth Ratio (acfm/ft}^2\text{)} * \text{Filter Area (ft}^2\text{)} * 1 \text{ lb/7,000 grains} * 60 \text{ min/hr} * 8760 \text{ hr/yr} * 1 \text{ ton/2,000 lbs} * 1/(1-\text{Control Efficiency})$$

Federal Potential (controlled):

$$\text{Baghouse (tons/yr)} = \text{No. Units} * \text{Loading (grains/acf)} * \text{Air/Cloth Ratio (acfm/ft}^2\text{)} * \text{Filter Area (ft}^2\text{)} * 1 \text{ lb/7,000 grains} * 60 \text{ min/hr} * 8760 \text{ hr/yr} * 1 \text{ ton/2,000 lbs}$$

326 IAC 6-3-2 Compliance Calculations for Furnace #1

The following calculations determine compliance with 326 IAC 6-3-2 for process weight rates less than 60,000 pounds per hour:

$$\text{Limit} = 4.1 * (6.0 \quad 0.67) = 13.62 \text{ lb/hr or } 59.65 \text{ tons/yr}$$

Since controlled particulate matter emissions are less than 13.6 lbs/hr, Furnace #1 is in compliance with 326 IAC 6-3-2.