

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

Superior Aluminum Alloys
14214 Edgertown Road
New Haven, IN 46774

is hereby authorized to construct

- (a) One (1) scrap shredder rated at 12.5 tons of scrap per hour, with a baghouse for PM control.
- (b) One (1) scrap dryer rated at 6 tons of scrap per hour and 6 MMBtu heat input per hour, with a baghouse for PM control and a thermal oxidizer for VOC control.
- (c) Two (2) reverberatory furnaces, each rated at 14 tons of scrap per hour and 28 MMBtu heat input per hour, each with a baghouse for PM control.
- (d) Six (6) melt pot stands, each with two (2) burners, with each burner rated at 1.5 MMBtu heat input per hour.

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-003-9243-00286	
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 secondary aluminum smelting plant 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 PM emissions from Stacks C, D, and either E or F, and a VOC destruction efficiency test shall be performed for the thermal oxidizer, 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 3-6 (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]

Opacity Limitations

- 9. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
 - (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
 - (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

Prevention of Significant Deterioration

- 10. That pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements), the cyclone and baghouse (emission point C) shall be in operation at all times when the shredder is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 0.338 pounds per hour, the baghouse (emission point D) shall be in operation at all times when the dryer is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 4.188 pounds per hour, and the baghouses (emission points E and F) shall be in operation at all times when the reverbatory furnaces are in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 1.204 pounds per hour each.

Baghouse Operating Condition

- 11. That the baghouses shall be operated at all times when the shredder, dryer, and reverbatory furnaces are in operation.
 - (a) The Permittee shall take readings of the total static pressure drop across the baghouses at least once per day and record the results on the attached form. 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 one and four 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

12. That visible emission notations of all exhaust to the atmosphere from the cyclone and all baghouses 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

13. 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)].

BACT Condition

14. That pursuant to 326 IAC 8-1-6, the thermal oxidizer determined to be best available control technology shall be operated at all times that the dryer is in operation. The performance test required by Operation Condition 7 of this permit shall be used to develop parameters for the thermal oxidizer to insure an acceptable destruction efficiency is achieved and maintained.

Thermal Oxidizer Operation

15. That the thermal incinerator shall operate at all times that the dryer is operated and the operating temperature shall be monitored continuously. When operating, the thermal incinerator shall maintain a minimum VOC capture efficiency of 99% and a minimum operating temperature of 1300 °F or the temperature, residence time and air flow rate determined in the compliance tests (described in Operation Condition 7) to maintain a minimum 99% destruction of the volatile organic compound (VOC) captured.

Reporting Requirements

16. That a log of information necessary to document compliance with operation permit conditions 10, 11, 12, and 15 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request to the Office of Air Management (OAM).

- (a) A quarterly summary shall be submitted to:

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

within thirty (30) calendar days after the end of the quarter being reported in the format attached.

- (b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:

- (i) Postmarked on or before the date it is due; or
(ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.

- (c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.

- (d) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.

- (e) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Open Burning

17. 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

18. 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. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.
- (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.
- (g) 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-

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 REVERSE SIDE ? Y N

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

COMPANY: _____ PHONE NO. () _____

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

DATE/TIME MALFUNCTION STARTED: ____ / ____ / 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: _____

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
 COMPLIANCE DATA SECTION**

Monthly Report

Source Name: Superior Aluminum Alloys
 Location: 14214 Edgertown Road, New Haven, IN 46774
 Construction Permit No.:CP-003-9243-00286
 Facility: Baghouse
 Parameter: Pressure Drop

Month: _____ Year: _____

Day	Pressure Drop (in of Hg)	Day	Pressure Drop (in of Hg)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of Deviations	

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.
 Deviation has been reported on: _____

Submitted by: _____
 Title/Position: _____
 Signature: _____
 Phone: _____

Mail to: Permit Administration & Development Section
Office Of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Superior Aluminum Alloys
2410 Coliseum
FT. Wayne, IN 46805

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)
4. I hereby certify that Superior Aluminum Alloys, 14214 Edgertown Road, New Haven, IN, 46774, has constructed the secondary aluminum smelting plant in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on November 25, 1997, and as permitted pursuant to **Construction Permit No. CP-003-9243, Plant ID No.003-00286** issued on _____
5. I hereby certify that Superior Aluminum Alloys, 14214 Edgertown Road, New Haven, IN, 46774, will submit a Part 70 permit within twelve (12) months after this source becomes subject to Title V. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of
Indiana on this _____ day of _____, 19 _____.

My Commission expires: _____

Signature

Name (typed or printed)

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: Superior Aluminum Alloys
 Source Location: 14214 Edgertown Road, New Haven, IN 46774
 County: Allen
 Construction Permit No.:CP-003-9243-00286
 SIC Code: 3341
 Permit Reviewer: W.E.McPhail

The Office of Air Management (OAM) has reviewed an application from Superior Aluminum Alloys relating to the construction and operation of a secondary aluminum smelting plant, consisting of the following equipment:

- (a) One (1) scrap shredder rated at 12.5 tons of scrap per hour, with a baghouse for PM control (98% efficiency).
- (b) One (1) scrap dryer rated at 6 tons of scrap per hour and 6 MMBtu heat input per hour, with a baghouse for PM control (98% efficiency) and a thermal oxidizer for VOC control (99% efficiency).
- (c) Two (2) reverberatory furnaces, each rated at 14 tons of scrap per hour and 28 MMBtu heat input per hour, each with a baghouse for PM control (98% efficiency).
- (d) Six (6) melt pot stands, each with two (2) burners, with each burner rated at 1.5 MMBtu heat input per hour.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
A	Revb furn #1	50	3 x 3.17	20,000	1600
B	Revb Furn #2	50	3 x 3.17	20,000	1600
C	Shredder	26	1.33	25,000	70
D	Drier	40	3.17	48,000	160
E	Revb Bagh #1	40	3.83	60,000	125
F	Revb Bagh #2	40	3.83	60,000	125

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.

An application for the purposes of this review was received on November 25, 1997, with additional information received on December 15, 1997.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (4pages).

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)	372.26	1522.43
Sulfur Dioxide (SO ₂)	89.89	89.89
Volatile Organic Compounds (VOC)	52.14	884.43
Carbon Monoxide (CO)	7.01	7.01
Nitrogen Oxides (NO _x)	88.91	88.91
Single Hazardous Air Pollutant (HAP)	0.47	0.47
Combination of HAPs	0.76	0.76

- (a) Allowable emissions are determined from the applicability of rules 326 IAC 6-3-2 and 326 IAC 8-1-6 See attached spreadsheets for detailed calculations.
- (b) The allowable 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 PM, SO₂, VOCs, and NO_x 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. Allen 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) Allen County has been classified as attainment or unclassifiable for all pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Limited PTE

The source has accepted federally enforceable PM-10 limits of 99 tons per year.

Limited PTE (tons/year)	
The table below summarizes the total PM potential to emit.	
Production Unit	PM
Shredder	1.48
Dryer	18.34
Dryer - Afterburner Combustion	0.60
Dryer - Combustion	0.30
Reverb Furnaces - Smelting	10.55
Reverb Furnaces _ Combustion	2.80
Melt Pots	0.90
Reverb Furnaces - Casting	-
Total	34.97

Attached Table 1 summarizes the permit conditions and requirements.

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	34.97
SO ₂	89.92
VOC	52.14
CO	8.07
NO _x	93.92
Single HAP	0.47
Combination HAPs	0.76

(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. Therefore, pursuant to 326 IAC 2-2 and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to this facility.

State Rule Applicability

326 IAC 5-1-2 (Visible Emission Limitations)

This source is subject to 326 IAC 5-1-2 (Visible Emission Limitations). Except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-4 (Fugitive Dust Emissions)

That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), if fugitive dust is visible crossing the boundary or property line of the source, the source is in violation of this fugitive dust rule.

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 6-3 (Process Operations)

This several of these facilities are subject to 326 IAC 6-3 (Process Operations), because it is not one of the listed exempted processes.

- (a) The scrap shredder, scrap dryer, reverberatory furnaces shall each comply with 326 IAC 6-3-2(c) using the following equation:

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

where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)

Production Unit	Allowable Emissions (ton/yr)	Controlled Emissions (ton/yr)	Status
Shredder	97.57	1.48	In Compliance
Dryer	59.66	18.34	In Compliance
Reverberatory Furnaces	210.46	10.55	In Compliance

326 IAC 8-1-6 (General Provisions Relating to VOC Rules: General Reduction Requirements for new Facilities)

The scrap dryer is subject to 326 IAC 8-1-6 (General Provisions Relating to VOC Rules: General Reduction Requirements for new Facilities) because it is to be constructed after January 1, 1980 and has the potential to emit more than 25 tons of VOCs per year. This facility is therefore required to reduce VOC emissions using best available control technology (BACT). The company proposes to comply with this requirement by using a thermal oxidizer with a control efficiency of 99% to control VOC emissions from their dryer operations. This proposal is accepted as BACT and thus complies with the requirements of this rule.

326 IAC 2-2 (Prevention of Significant Deterioration [PSD] Requirements)

This source is not subject to 326 IAC 2-2 (Prevention of Significant Deterioration [PSD] Requirements) because the company has accepted enforceable emission limitations that reduce potential emissions to below the PSD thresholds.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The scrap dryer is subject to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations) because it has the potential to emit more than 25 tons of SO₂ per year. There are no limits on the dryer because the emissions are not related to combustion.

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) This new source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.
- (b) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of this secondary aluminum smelting plant will be subject to the conditions of the attached proposed **Construction Permit No. CP-003-9243-00286**.

Table 1

Emission Unit:	Scrap Dryer	Reverb Furn # 1	Reverb Furn # 2	Scrap Shredder	Scrap Dryer
Date of Construction:					
Alternative Scenario: None					
Pollution Control Equipment:	Baghouse	Baghouse	Baghouse	Baghouse	Thermal Oxidizer
General Description of Requirement:	98% Control	98% Control	98% Control	98% Control	99% Control
Numerical Emission Limit:	4.188 lb PM/hr	1.204 lb PM/hr	1.204 lb PM/hr	0.338 lb PM/hr	1.92 lb VOC/hr
Regulation/Citation:	321 IAC 2-2	321 IAC 2-2	321 IAC 2-2	321 IAC 2-2	326 IAC 8-1-6
Compliance Demonstration:	Within 180 days of issuance				
PERFORMANCE TESTING					
Parameter/Pollutant to be Tested:	PM	PM	PM	PM	VOC
Testing Method/Analysis:					
Testing Frequency/Schedule:	Once	Once	Once	Once	Once
Submittal of Test Results:	Within 45 days of test				
COMPLIANCE MONITORING					
Monitoring Description:					
Monitoring Method:	Pressure Drop	Pressure Drop	Pressure Drop	Pressure Drop	Temperature
Monitoring Regulation/Citation:					
Monitoring Frequency:	Daily	Daily	Daily	Daily	Daily
RECORD KEEPING					
Parameter/Pollutant to be Recorded:	Pressure Drop	Pressure Drop	Pressure Drop	Pressure Drop	Temperature
Recording Frequency:	Daily	Daily	Daily	Daily	Daily
Submittal Schedule of Reports:	When requested by OAM				
REPORTING REQUIREMENTS					
Information in Report:	Certification, Excess emissions				
Reporting Frequency/Submittal:	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
Additional Comments:					

Indiana Department of Environmental Management Office of Air Management

Appendix A to the Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: Superior Aluminum Alloys
 Source Location: 14214 Edgertown Road, New Haven, IN 46774
 County: Allen
 Construction Permit No.: CP-003-9243-00286
 SIC Code: 3341
 Permit Reviewer: W.E.McPhail

Emission Calculations

Scrap Shredder Emissions - Max Process Rate = 12.5 ton/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Allowable Emissions (lb/hr)	Allowable Emissions (ton/yr)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)
PM	1.35	16.88	73.91	22.27	97.54	0.34	1.48

Scrap Dryer Emissions - Max Process Rate = 6 ton/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Allowable Emissions (lb/hr)	Allowable Emissions (ton/yr)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)
PM	35.9	209.4	917.17	13.62	59.66	4.19	18.34
SO ₂	2.9	17.4	76.21	-	-	17.4	76.21
NO _x	0.9	5.4	23.65	-	-	5.4	23.65
VOC	32	192	840.96	-	-	1.92	8.40

Dryer Afterburner Combustion Emissions - Max Heat Input = 12 MMBtu/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)
PM	12	0.14	0.60
SO ₂	0.6	0.01	0.03
NO _x	100	1.14	5.01
VOC	5.3	0.06	0.27
CO	21	0.24	1.05

Scrap Dryer - Natural Gas Combustion Emissions - Max Heat Input = 6 MMBtu/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)
PM	12	0.07	0.30
SO2	0.6	0.003	0.02
NOx	100	0.57	2.50
VOC	5.3	0.03	0.13
CO	21	0.12	0.53

Reverbatory Furnaces - Smelting Emissions - Total Max Process Rate = 28 ton/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Allowable Emissions (lb/hr)	Allowable Emissions (ton/yr)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)
PM	4.3	120.4	527.35	48.05	210.46	2.41	10.55
VOC	0.2	6.0	24.53	-	-	-	-
SO2	0.09	2.5	11.04	-	-	-	-
NOx	0.25	7.0	30.66	-	-	-	-

Reverbatory Furnaces - Natural Gas Combustion Emissions - Max Heat Input = 56 MMBtu/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)
PM	12	0.64	2.80
SO2	0.6	0.03	0.14
NOx	100	5.33	23.36
VOC	5.3	0.28	1.24
CO	21	1.12	4.91

Melt Pot Emissions - Max Heat Input = 18 MMBtu/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)
PM	12	0.21	0.90
SO2	0.6	0.01	0.05
NOx	100	1.71	7.51
VOC	5.3	0.09	0.40
CO	21	0.36	1.58

Reverbatory Furnaces - Casting Emissions - Max Process Rate = 28 ton/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)
SO2	0.02	0.56	2.43
NOx	0.01	0.30	1.23
VOC	0.14	3.90	17.17

Total Potential Emissions (ton/yr)

Production Unit	PM	SO2	NOx	VOC	CO
Shredder	73.91	-	-	-	-
Dryer	917.17	76.21	23.65	840.96	-
Dryer - Combustion	0.30	0.02	2.50	0.13	0.53
Reverbatory Furnaces - Smelting	527.35	11.04	30.66	24.53	-
Reverbatory Furnaces - Combustion	2.80	0.14	23.36	1.24	4.91
Melt Pots	0.90	0.05	7.51	0.40	1.58
Reverbatory Furnaces - Casting	-	2.43	1.23	17.17	-
Total	1522.43	89.89	88.91	884.43	7.01

Total Controlled (PSD) Emissions (ton/yr)

Production Unit	PM	SO2	NOx	VOC	CO
Shredder	1.48	-	-	-	-
Dryer	18.34	76.21	23.65	8.40	-
Dryer - Afterburner Combustion	0.60	0.03	5.01	0.27	1.05
Dryer - Combustion	0.30	0.02	2.50	0.13	0.53
Reverbatory Furnaces- Smelting	10.55	11.04	30.66	24.53	-
Reverbatory Furnaces_ Combustion	2.80	0.14	23.36	1.24	4.91
Melt Pots	0.90	0.05	7.51	0.40	1.58
Reverbatory Furnaces- Casting	-	2.43	1.23	17.17	-
Total	34.97	89.92	93.92	52.14	8.07

Total Allowable PM Emissions (Ton/yr)

Production Unit	PM
Shredder	97.54
Dryer	59.66
Dryer - Afterburner Combustion	0.60
Dryer - Combustion	0.30
Reverbatory Furnaces - Smelting	210.46
Reverbatory Furnaces - Combustion	2.80
Melt Pots	0.90
Reverbatory Furnaces - Casting	-
Total	372.26

Reverbatory Furnaces - Smelting HAP Emissions - Total Max Process Rate = 28 ton/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)
Cadmium	0.00002	0.00056	0.0025
Chlorine	0.0023	0.064	0.28
Chromium	0.0000012	0.000034	0.00015
Hydrogen Chloride	0.0038	0.11	0.47
Lead	0.00005	0.0014	0.0061
Manganese	0.0000001	0.000028	0.000012
Nichel	0.0000001	0.000028	0.000012
Total		0.18	0.76

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: Superior Aluminum Alloys
 Source Location: 14214 Edgertown Road, New Haven, IN 46774
 County: Allen
 Construction Permit No.: CP-003-9243-00286
 SIC Code: 3341
 Permit Reviewer: W.E.McPhail

On March 5, 1998, the Office of Air Management (OAM) had a notice published in the Ft. Wayne Journal Gazette News Sentinel, Ft. Wayne, Indiana, stating that Superior Aluminum Alloys had applied for a construction and operating permit to operate a secondary aluminum smelting plant. The notice also stated that OAM proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAM has decided to make the following changes to the permit:

1. In the Technical Support document, the section headed Part 70 Permit Determination is changed to read as follows to correct the Part 70 evaluation that the source is subject to this program:

326 IAC 2-7 (Part 70 Permit Program)

This new source is ~~not~~ subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) ~~each criteria pollutant~~ **PM and VOCs** is ~~less~~ **greater than or equal to** 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is ~~less~~ **greater than or equal to** 10 tons per year, ~~and or~~
- (c) any combination of HAPs is ~~less~~ **greater than or equal to** 25 tons/year.

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

2. Operation Condition 11(a) on Page 6 of 10 is changed to read as follows to add the requirement that the pressure drop readings be recorded which will document that proper operation of the baghouses is maintained:

The Permittee shall take readings of the total static pressure drop across the baghouses at least once per day **and record the results on the attached form**. 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 one and four 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.

Due to this change, a reporting form has been added.

3. Operation Condition 15 on Page 7 of 10 is changed to read as follows to add the requirement

that the operating temperature be recorded which will document that proper operation of the thermal incinerator is maintained:

That the thermal incinerator shall operate at all times that the dryer is operated **and the operating temperature shall be monitored continuously**. When operating, the thermal incinerator shall maintain a minimum operating temperature of 1300 °F or the temperature, residence time and air flow rate determined in the compliance tests (described in Operation Condition 7) to maintain a minimum 99% destruction of the volatile organic compound (VOC) captured.

4. Operation Condition 7 on Page 4 of 10 is changed to read as follows to remove the requirement that PM emissions compliance stack tests be performed for both Stacks E and F, which exhaust emissions from identical facilities:

That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for PM emissions from Stacks C, D, ~~E~~, and **either E or F**, and a VOC destruction efficiency test shall be performed for the thermal oxidizer, 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 3-6 (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.

5. The listing of facilities covered by this permit on Page 1 of 10 is changed to read as follows to remove references to control efficiencies:

- (a) One (1) scrap shredder rated at 12.5 tons of scrap per hour, with a baghouse for PM control (~~98% efficiency~~).
- (b) One (1) scrap dryer rated at 6 tons of scrap per hour and 6 MMBtu heat input per hour, with a baghouse for PM control (~~98% efficiency~~) and a thermal oxidizer for VOC control (~~99% efficiency~~).

- (c) Two (2) reverberatory furnaces, each rated at 14 tons of scrap per hour and 28 MMBtu heat input per hour, each with a baghouse for PM control (~~98%~~ efficiency).
 - (d) Six (6) melt pot stands, each with two (2) burners, with each burner rated at 1.5 MMBtu heat input per hour.
- 6. A title "**Prevention of Significant Deterioration**" was added to Condition 10 on Page 5 of 10.
- 7. Operation Condition 18 on Page 8 of 10 is changed to read as follows to remove references to a local agency because the source is located in an area not covered by a local agency:
 - 18. 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 (~~and local agency~~), the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM (~~and local agency~~), shall supply such a plan.
 - (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.
 - (g) Upon direct notification by IDEM, OAM (~~and local agency~~), 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].
- 8. Operation Condition 16(b)(ii) on Page 7 of 10 is changed to read as follows to remove a reference to a local agency because the source is located in an area not covered by a local agency:
 - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.
- 9. Operation Condition 15 on Page 7 of 10 is changed to read as follows to add a VOC capture efficiency to the operation of the thermal oxidized:

Thermal Oxidizer Operation

That the thermal incinerator shall operate at all times that the dryer is operated and the operating temperature shall be monitored continuously. When operating, the thermal incinerator shall maintain a minimum **VOC capture efficiency of 99% and a minimum** operating temperature of 1300 °F or the temperature, residence time and air flow rate determined in the compliance tests (described in Operation Condition 7) to maintain a minimum 99% destruction of the volatile organic compound (VOC) captured.

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

Monthly Report

Source Name: Superior Aluminum Alloys
Location: 14214 Edgertown Road, New Haven, IN 46774
Construction Permit No.:CP-003-9243-00286
Facility: Baghouse
Parameter: Pressure Drop

Month: _____ Year: _____

Day	Pressure Drop (in of Hg)	Day	Pressure Drop (in of Hg)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of deviations	

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____
Title/Position: _____
Signature: _____
Phone: _____