

**FEDERALLY ENFORCEABLE STATE  
OPERATING PERMIT (FESOP)  
and ENHANCED NEW SOURCE REVIEW  
OFFICE OF AIR MANAGEMENT**

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

**IMCO Recycling of Indiana, Inc.  
1005 Fourth Street  
Bedford, Indiana 47421**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the facilities listed in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 and contains the conditions and provisions specified in 326 IAC 2-8 and 40 CFR Part 70.6 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments) and IC 13-15 and IC 13-17 (prior to July 1, 1996, IC 13-1-1-4 and IC 13-7-10).

Operation Permit No.: F093-5491-00016 (Revised: now OP# F093-5491-00009)	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: December 12, 1996
First Significant Permit Modification: SMF093-9376	Pages Affected: 2,3,5,15, 32a-e
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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- (f) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFC, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.
- (g) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFD, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.

#### A.3 Insignificant Activities

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-1(20):

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour;
- (b) The following equipment related to manufacturing activities not resulting in the emission of hazardous air pollutants: brazing equipment, cutting torches, soldering equipment, and welding equipment;
- (c) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (d) Paved and unpaved roads and parking lots with public access;
- (e) Fugitive emissions from dryer;
- (f) Fugitive emissions from bale breaker;
- (g) Fugitive emissions from briquette breaker; and
- (h) Fugitive emissions from the lime silo.

#### A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Federally Enforceable State Operating Permit (FESOP).

#### A.5 Prior Permit Conditions Superseded [326 IAC 2]

The terms and conditions of this permit incorporate all the current applicable requirements for all emission units located at this source and supersede all terms and conditions in all registrations and permits, including construction permits, issued prior to the date of issuance of this permit. All terms and conditions in such registrations and permits are no longer in effect.

- (a) The Permittee shall pay annual fees to IDEM, OAM, consistent with the fee schedule established in 326 IAC 2-8-16.
- (b) Failure to pay may result in administrative enforcement action, revocation of this permit, referral to the Office of Attorney General for collection, or other appropriate measures.
- (c) The Permittee shall pay the annual fee within thirty (30) calendar days of receipt of a billing by IDEM, OAM or in a time period that is consistent with the payment schedule issued by IDEM, OAM.
- (d) If the Permittee does not receive a bill from IDEM, OAM, thirty (30) calendar days before due date, the Permittee shall call the following telephone numbers: 1-800-451-6027 or 317-233-0179 (ask for OAM, Data Support Section), to determine the appropriate permit fee. The applicable fee is due April 1 of each year.

B.26 Affidavit

The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration and Development Section, verifying that the facilities were constructed as proposed in the application. The Permittee shall receive an Operation Validation Letter from the Chief of the Permit Administration and Development Section and attach it to this document.

B.27 Enhanced New Source Review [326 IAC 2]

The requirements of the construction permit rules in 326 IAC 2 are satisfied by this permit for any previously unpermitted facilities and such facilities to be constructed within eighteen (18) months after the date of issuance of this permit, as listed in Sections A.2 and A.3.

## SECTION D.5

## FACILITY OPERATION CONDITIONS

- (1) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFC, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.
- (2) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFD, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.

### Emission Limitations and Standards [326 IAC 2-8-4(1)]

#### D.5.1 Particulate Matter (PM) [326 IAC 2-8-4][326 IAC 6-3][326 IAC 2-2][326 IAC 2-7]

Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM and PM10 emission rate from each rotary furnace (RB-RFC and RB-RFD) shall each not exceed 7.68 pounds per hour when operating at a process weight rate of 2.55 tons per hour.

#### D.5.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for each facility and its control device.

### Compliance Determination Requirements

#### D.5.3 Testing Requirements

During the period between 12 and 24 months after issuance of this permit, the Permittee shall perform PM and PM-10 testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM-10, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM-10 includes filterable and condensable PM-10.

### Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

#### D.5.4 Particulate Matter (PM) [326 IAC 2-8]

Pursuant to 326 IAC 2-8 (FESOP), the baghouse (RB-RFC-B) for PM and PM10 control shall be in operation at all times when each rotary furnace is in operation and exhausting to the outside atmosphere.

#### D.5.5 Visible Emissions Notations

- (a) Daily visible emission notations of the rotary furnace stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) 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.

- (c) 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.
- (d) 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.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

#### D.5.6 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the rotary furnaces, at least once daily when the rotary furnaces are in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across each baghouse shall be maintained within the range of 4.0 and 6.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

#### D.5.7 Broken Bag or Failure Detection

In the event that bag failure has been observed:

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced.
- (b) Based upon the findings of the inspection, any additional response steps will be devised within eight (8) hours of discovery and will include a timetable for completion.

#### D.5.8 Lime Injection System Operating Condition

That the lime injection system on each rotary furnace (RB-RFC and RB-RFD) shall be operated at all times when the rotary furnaces are in operation.

- (a) The Permittee shall record the quantity of lime injected into each rotary furnace exhaust from the lime injection system controlling hazardous air pollutant emissions, at least once per working day when the rotary furnace is in operation. The hours of operation of each rotary furnace shall be recorded for the same time period. The hourly lime usage rate shall be the daily lime usage divided by the daily hours of operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the lime usage rate shall be maintained above the minimum rate established during the compliance stack test required under Construction Permit CP093-7543-00009, issued March 7, 1997. The Preventive Maintenance Plan for the lime injection system shall contain troubleshooting contingency and corrective actions for when the lime usage rate is below the minimum rate for any one reading.

- (b) The instrument used for measuring the quantity of lime shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

**Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**

**D.5.9 Record Keeping Requirements**

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- (a) To document compliance with Condition D.5.5, the Permittee shall maintain records of daily visible emission notations of each rotary furnace stack exhaust.
- (b) To document compliance with Condition D.5.6, the Permittee shall maintain the following:
  - (1) Daily records of the following operational parameters during normal operation when venting to the atmosphere:
    - (A) Inlet and outlet differential static pressure; and
    - (B) Cleaning cycle: frequency and differential pressure
  - (2) Documentation of all response steps implemented, per event .
  - (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
  - (4) Quality Assurance/Quality Control (QA/QC) procedures.
  - (5) Operator standard operating procedures (SOP).
  - (6) Manufacturer's specifications or its equivalent.
  - (7) Equipment "troubleshooting" contingency plan.
  - (8) Documentation of the dates vents are redirected.
- (c) To document compliance with Condition D.5.8, the Permittee shall maintain daily records of the lime injection rate on each rotary furnace.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION D.6

## FACILITY CONDITIONS

One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFD, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

### Construction Conditions [326 IAC 2-1-3.2]

#### General Construction Conditions

D.6.1 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

D.6.2 Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

#### Effective Date of the Permit

D.6.3 Pursuant to 40 CFR Parts 124.15 124.19 and 124.20, the effective date of this permit will be thirty-three (33) days from its issuance.

D.6.4 Pursuant to 326 IAC 2-1-9(b) (Revocation of Permits), IDEM, OAM may revoke this section of the approved permit if construction is not commenced within eighteen (18) months after receipt of this permit or if construction is suspended for a continuous period of one (1) year or more.

D.6.5 All requirements of these construction conditions 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

D.6.6 This document shall also become the first-time operation permit for the facilities under this section of this 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:

Indiana Department of Environmental Management  
Permit Administration & Development Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

verifying that the facilities were constructed as proposed in the application. The facilities covered in this section of this 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) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this permit.

## Indiana Department of Environmental Management Office of Air Management

### Technical Support Document (TSD) for First Significant Permit Modification of the Federally Enforceable State Operating Permit (FESOP) and Enhanced New Source Review (ENSR)

#### Source Background and Description

Source Name:	IMCO Recycling of Indiana, Inc.		
Source Location:	1005 Fourth Street, Bedford, Indiana 47421		
County:	Lawrence		
FESOP No.:	F093-5491-00009	Issued:	December 12, 1996
Revision No.:	SMF-093-9376		
SIC Code:	3341		
Permit Reviewer:	Scott Pan/EVP		

#### History

IMCO Recycling of Indiana was previously issued a Federally Enforceable State Operating Permit (FESOP) (F093-5491-00009) on December 12, 1996.

A subsequent construction permit (CP-093-7543-00009), was issued on March 7, 1997 for the construction and operation of a melt furnace identified as RB-RFC. The melt furnace RB-RFC should have been incorporated into the source's existing FESOP instead of being permitted separately. Included in CP-093-7543-00009, however, were operating conditions limiting source-wide PM10 emissions below 99 tons per year. Although the source was issued a separate construction permit outside of its FESOP, the source was never permitted to emit any criteria pollutant in excess of 99 tons per year.

This First Significant Modification to a FESOP consists of the incorporation of melt furnace RB-RFC, and the incorporation of a new melt furnace identified as RB-RFD, into the source's existing FESOP (F093-5491-00009). Both of these units were reviewed under Enhanced New Source Review (ENSR).

#### Changes Proposed

- (a) The construction and operation of the following new equipment to be added to the FESOP:
  - (1) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFC, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.

- (2) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFD, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFD-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFD-B-S6.
- (b) The following changes have been made to the FESOP:
- (1) Condition A.2, Page 5 of 37  
Add to the listing of emission units the following, lettered (f) and (g):
    - (f) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFC, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFC-B-S6.
    - (g) One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFD, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as RB-RFD-B, for controlling particulate matter emissions, exhausting at one (1) stack, identified as RB-RFD-B-S6.
  - (2) Condition A.5, Page 5 of 37  
Add a new condition A.5 stating the following:

Prior Permit Conditions Superseded [326 IAC 2]  
“The terms and conditions of this permit incorporate all the current applicable requirements for all emission units located at this source and supersede all terms and conditions in all registrations and permits, including construction permits, issued prior to the date of issuance of this permit. All terms and conditions in such registrations and permits are no longer in effect.”
  - (3) Condition B.27, Page 15 of 37  
Add a new condition B.27 for Enhanced New Source Review stating the following:

Enhanced New Source Review [326 IAC 2]  
“The requirements of the construction permit rules in 326 IAC 2 are satisfied by this permit for any facilities to be constructed within eighteen (18) months after the date of issuance of this permit, as listed in Sections A.2 and A.3.”
  - (4) Section D.5 has been added to the FESOP on page 32a. This section includes operating conditions for the rotary furnace identified as RB-RFC, which was previously issued a construction permit (CP-093-7543-00009, issued March 7, 1997), and rotary furnace RB-RFD.

- (5) Section D.6 has been added to the FESOP on page 32d. This section includes construction conditions for the rotary furnace identified as RB-RFD, which is being constructed and permitted under Enhanced New Source Review.

**Stack Summary**

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
RB-RFC-B-S6	rotary melting furnace	40	4.5	25,000	1,200
RB-RFD-B-S6	rotary melting furnace	40	4.5	25,000	1,200

**Recommendation**

The staff recommends to the Commissioner that this modification be approved.

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 January 28, 1998.

**Emissions Calculations**

See Appendix A for detailed emissions calculations (four (4) pages).

**Total Potential and Allowable Emissions**

Indiana Permit Allowable Emissions Definition for the proposed rotary melt furnaces only (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)	70.28	148.2
Particulate Matter (PM10)	70.28	148.2
Sulfur Dioxide (SO <sub>2</sub> )	--	0.13
Volatile Organic Compounds (VOC)	--	18.9
Carbon Monoxide (CO)	--	7.7
Nitrogen Oxides (NO <sub>x</sub> )	--	30.7
Single Hazardous Air Pollutant (HAP)	--	16.4
Combination of HAPs	--	18.3

- (a) Allowable emissions of PM, and PM10 are determined from the applicability of rule 326 IAC 6-3 for the source.
- (b) Allowable emissions (as defined in the Indiana Rule) of PM, PM10, and NO<sub>x</sub> are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

- (c) This First Significant Modification to the FESOP is being done simultaneously with Enhanced New Source Review such that the modified emission limits under the FESOP modification continue to satisfy the requirements of 326 IAC 2-8, and 326 IAC 2-7 (Part 70 Permit Program) does not apply to this source.
- (d) Allowable emissions (as defined in the Indiana Rule) of a single hazardous air pollutant (HAP) are greater than 10 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.

**Proposed Modification**

PTE from the proposed First Significant Modification to FESOP F039-5491-00009:

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO <sub>2</sub> (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO <sub>x</sub> (ton/yr)	Single HAP (ton/yr)	Combo HAPs (ton/yr)
PTE from Proposed Modification	5.9	5.9	0.1	2.5	7.7	30.7	1.5	1.9
Existing FESOP Limits (F093-5491-00009, issued on December 12, 1996)	57.9	57.9	0.1	15.3	5.8	23.3	6.5	11.0
Revised FESOP Limits	63.8	63.8	0.2	17.8	13.5	54.0	8.0	12.9
Title V Significant Levels	--	99	99	99	99	99	9.4	24
Note: This source will be able to keep its FESOP status.								

This First Significant Modification to the stationary source FESOP will **not** change the status of the stationary source because the emissions increase is still less than the FESOP significant levels. Therefore, the following requirements will not apply:

- (a) PSD, 326 IAC 2-2, and 40 CFR 52.21,
- (b) Emission Offset, 326 IAC 2-3, and
- (c) Part 70 Permit Program, 326 IAC 2-7.

**Federal Rule Applicability**

- (a) There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 63) applicable to this facility.

### State Rule Applicability

The following State Rule changes have been added to this source as a result of the First Significant Modification to the FESOP :

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

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.

#### 326 IAC 6-3 (Particulate Rule - Process Operations)

The two (2) rotary melting furnaces, RB-RFC and RB-RFD, are subject to 326 IAC 6-3 (Particulate Emissions Limitations). Pursuant to this rule, particulate matter emissions from each rotary melting furnace shall be limited to 7.68 pounds per hour. This limit is calculated as follows:

$$E = 4.10 * P^{0.67} = 4.10 * (2.55)^{0.67} = 7.68 \text{ lb/hr}$$

where: E is allowable emission in lb/hr  
P is process weight rate in ton/hr.

Particulate emissions from each rotary melting furnace are controlled at 0.33 pounds per hour. This renders both melt furnaces in compliance with the requirements of 326 IAC 6-3 (Process Operations).

### Compliance Monitoring

The compliance monitoring requirements applicable to the melt furnaces RB-RFC and RB-RFD are as follows:

- (a) Daily visible emissions notations of the baghouses (RB-RFC-B, and RB-RFD-B) controlling the stack exhausts of melt furnaces RB-RFC and RB-RFD shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. 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. 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. 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. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

- (b) The Permittee shall record the total static pressure drop across the baghouses controlling each melt furnace, at least once daily when the melt furnaces are in operation and exhausted to the atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across each of the baghouses shall be maintained within a range of 4 to 6 inches of water or a range established during the latest stack test. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of the above mentioned range for any one reading.
- (c) That the lime injection system on each rotary furnace shall be operated at all times when the rotary furnaces are in operation.
  - (1) The Permittee shall record the quantity of lime injected into each rotary furnace exhaust from the lime injection system controlling hazardous air pollutant emissions, at least once per working day when the rotary furnace is in operation. The hours of operation of each rotary furnace shall be recorded for the same time period. The hourly lime usage rate shall be the daily lime usage divided by the daily hours of operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the lime usage rate shall be maintained above the minimum rate established during the compliance stack test required under Construction Permit CP093-7543-00009, issued March 7, 1997.
  - (2) The instrument used for measuring the quantity of lime shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

These monitoring conditions are necessary because the baghouses and lime injection systems must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (FESOP).

### **Air Toxic Emissions**

- (a) This proposed modification will emit levels of air greater than those that constitute major source applicability according to Section 112 of the Clean Air Act.
- (b) See Appendix A, page 4 of 4 for detailed calculations.

### **Conclusion**

The modification of this secondary aluminum smelting source will be subject to the conditions of the attached proposed FESOP Significant Modification Permit No.SMF-093-9376-00009.

## Indiana Department of Environmental Management Office of Air Management

### Addendum to the Technical Support Document (TSD) for First Significant Permit Modification of the Federally Enforceable State Operating Permit (FESOP) and Enhanced New Source Review (ENSR)

#### Source Background and Description

Source Name:	IMCO Recycling of Indiana, Inc.		
Source Location:	1005 Fourth Street, Bedford, Indiana 47421		
County:	Lawrence		
FESOP No.:	F093-5491-00016 (now F093-5491-00009)	Issued:	December
12,1996			
Revision No.:	SMF-093-9376-00009		
SIC Code:	3341		
Permit Reviewer:	JM/EVP		

On April 22, 1998 the Office of Air Management (OAM) had a notice published in the Times-Mail, in Bedford, Indiana, stating that IMCO Recycling of Indiana, Inc. had applied for the First Significant Permit Modification to the Federally Enforceable State Operating Permit (FESOP) and Enhanced New Source Review (ENSR). The modification to the FESOP for this secondary aluminum reclamation source sought to construct and operate two (2) aluminum used beverage cans (UBC), scrap and dross rotary melting furnaces. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit 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 permit modification should be issued as proposed.

Upon further review, the OAM has decided to make the following changes to the First Significant FESOP Modification (changes in bold or strikeout for emphasis):

- 1) The front page of the permit mistakenly read "First Minor Permit Modification", it has been changed to read "First Significant Permit Modification".
- 2) In Condition D.5.3, on page 32a of 37 of the Significant FESOP Modification, the condition has been changed to include a new stack testing requirement for PM and PM10.

~~**D.5.3 Testing Requirements [326 IAC 2-8-5(1)]**~~

~~Testing of this facility is not required by this permit. However, if testing is required, compliance with the PM and PM10 limits specified in Condition D.5.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing. This does not preclude testing requirements on this facility under 326 IAC 2-8-4 and 326 IAC 2-8-5.~~

**D.5.3 Testing Requirements**

**During the period between 12 and 24 months after issuance of this permit, the Permittee shall perform PM and PM-10 testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM-10, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM-10 includes filterable and condensable PM-10.**

- 3) In Condition D.5.1, on page 32a of 37 of the Significant FESOP Modification, the condition has been changed to include an hourly PM10 emission limit.

D.5.1 Particulate Matter (PM) [326 IAC 2-8-4][326 IAC 6-3][326 IAC 2-2][326 IAC 2-7]  
Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM **and PM10** emission rate from each rotary furnace (RB-RFC and RB-RFD) shall each not exceed 7.68 pounds per hour when operating at a process weight rate of 2.55 tons per hour. (It is assumed PM = PM10).

On April 28, 1998, Lisa Zwanzig of SEICO, Inc., submitted the following comments on behalf of IMCO Recycling of Indiana, Inc.:

**Comment #1**

*Throughout the Draft Modification to the FESOP and TSD, the baghouse identified as RB-RFD-B and one (1) stack identified as RB-RFD-B-S6 should be changed to baghouse identified as RB-RFC-B and one (1) stack, identified as RB-RFC-B-S6. To summarize, both natural gas fired 25 million British thermal units per hour aluminum used beverage cans, scrap and dross rotary melting furnaces identified as RB-RFC and RB-RFD feed into one (1) baghouse, identified as RB-RFC-B, for controlling particulate matter emissions, and both exhausting at one (1) stack, identified as RB-RFC-B-S6.*

**Response #1**

Pursuant to Comment #1, the following changes have been made to Section A.2 (page 5 of 37), Section D.5 (page 32 of 37), and Section D.6 (page 32a of 37) of the Significant Permit Modification to the FESOP, and in the Technical Support Document, page 2 of 6, Paragraph (a) *Changes Proposed*, subparagraph (2) and paragraph (b)(1)(g) now read as follows (changes indicated in bold face or strikeout):

One (1) natural gas fired 25 million British thermal units per hour aluminum used beverage cans (UBC), scrap and dross rotary melting furnace, identified as RB-RFD, with a maximum capacity of 5,100 pounds per hour, equipped with a lime injection system for hazardous air pollutant control, and a baghouse, identified as ~~RB-RFD-B~~ **RB-RFC-B**, for controlling particulate matter emissions, exhausting at one (1) stack, identified as ~~RB-RFD-B-S6~~ **RB-RFC-B-S6**.

Pursuant to Comment #1, the following changes have been made to the Significant FESOP Modification:

- 1) In Condition D.5.4, page 32a of 37 of the Significant FESOP Modification, the reference to baghouse RB-RFD-B has been deleted. It now reads as follows (changes in bold or strikeout for emphasis):

D.5.4 Particulate Matter (PM) [326 IAC 2-8]  
Pursuant to 326 IAC 2-8 (FESOP), the baghouse (RB-RFC-B, ~~and RB-RFD-B~~) for PM and PM10 control shall be in operation at all times when each rotary furnace is in operation and exhausting to the outside atmosphere

- 2) On page 3 of 6 of the Technical Support Document (TSD), the following stack summary now reads as follows (changes in bold or strikeout for emphasis):

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
RB-RFC-B-S6	<b>two (2) rotary melting furnaces</b>	40	4.5	25,000	1,200
<del>RB-RFD-B-S6</del>	<del>rotary melting furnace</del>	<del>40</del>	<del>4.5</del>	<del>25,000</del>	<del>1,200</del>

- 3) On page 5 of 6 of the TSD, Compliance Monitoring, paragraph (a) now reads as follows (changes in bold or strikeout for emphasis):

### Compliance Monitoring

The compliance monitoring requirements applicable to the melt furnaces RB-RFC and RB-RFD are as follows:

- (a) Daily visible emissions notations of the baghouse (RB-RFC-B, ~~and RB-RFD-B~~) controlling the stack exhausts of melt furnaces RB-RFC and RB-RFD shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. 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. 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. 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. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.
- 4) For clarification purposes, the potential to emit PM10 from this proposed significant FESOP modification is 5.9 tons per year (see TSD, page 4 of 6) after the use of a baghouse for particulate control. This limit, when combined with the potential to emit PM10 from existing emission units, will limit the total source wide potential to emit PM10 to 63.8 tons per year. Therefore, 326 IAC 2-7 (Part 70) does not apply.
- 5) The original FESOP (F093-5491-00016, issued: December 12, 1996) was issued with an incorrect plant id number. The FESOP number should have been F093-5491-**00009**. The correct plant id number for the source is # 093-00009.

**Appendix A: Emissions Summary (Page 1 of 4)**

**Company Name: IMCO Recycling of Indiana, Inc.**  
**Address IN Zip: 1005 Fourth Street, Bedford, Indiana 47421**  
**Operation Permit No.: SMF-093-9376-00009**  
**Reviewer: Scott Pan**  
**Date: February 4, 1998**

Total Potential Emissions (tons/yr)						
Emission Unit	PM/PM-10	SO2	NOx	VOC (1)	CO	HAPs
Combustion Emissions	3.00	0.13	30.66	0.61	7.67	negligible
Rotary Furnace - RB-RFC	72.60	0.00	0.00	9.15	0.00	9.15
Rotary Furnace - RB-RFD	72.60	0.00	0.00	9.15	0.00	9.15
<b>Total</b>	<b>148.20</b>	<b>0.13</b>	<b>30.66</b>	<b>18.91</b>	<b>7.67</b>	<b>18.30</b>

Potential Emissions based on maximum rated capacity assuming operations at 8,760 per year, before control.

(1) includes HAPS from rotary furnace which are assumed to be VOC.

Total Allowable Emissions (tons/yr)						
Emission Unit	PM/PM-10	SO2	NOx	VOC	CO	HAPs
Combustion Emissions	3.00	---	---	---	---	---
Rotary Furnace - RB-RFC	33.64	---	---	---	---	---
Rotary Furnace - RB-RFD	33.64	---	---	---	---	---
<b>Total</b>	<b>70.28</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>

Allowable Emissions based on maximum rated capacity assuming operations at 8,760 hours per year, before control.

Modification PSD Definition (tons/yr)						
Emission Unit	PM/PM-10	SO2	NOx	VOC (1)	CO	HAPs
Combustion Emissions	3.00	0.13	30.66	0.61	7.67	negligible
Rotary Furnace - RB-RFC	1.45	0.00	0.00	0.95	0.00	0.95
Rotary Furnace - RB-RFD	1.45	0.00	0.00	0.95	0.00	0.95
<b>Total</b>	<b>5.90</b>	<b>0.13</b>	<b>30.66</b>	<b>2.51</b>	<b>7.67</b>	<b>1.90</b>

Modification PSD Emissions based on maximum rated capacity assuming operations at 8,760 hours per year, after control.

(1) includes HAPS from rotary furnace which are assumed to be VOC.

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

**Company Name:** IMCO Recycling of Indiana, Inc.  
**Address City IN Zip:** 1005 Fourth Street, Bedford, Indiana 47421  
**Operation Permit Number:** SMF-093-9376-00009  
**Reviewer:** Scott Pan  
**Date:** February 4, 1998

**Potential To Emit (Emissions at 8,760 hours of operation per year without control):**

Heat Input Capacity MMBtu/hr	Annual Fuel Usage Limitation	Potential Throughput MMCF/yr
50.0	n/a	438.0

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	13.7	13.7	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	3.00	3.00	0.13	30.66	0.61	7.67

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 140, Low NOx Burner = 81, Flue gas recirculation = 30

Emission Factors for CO: Uncontrolled = 35, Low NOx Burner = 61, Flue gas recirculation = 37

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

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02

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

## Appendix A: Process Particulate Matter Emissions Based on Stack Test Results

**Company Name: IMCO Recycling of Indiana, Inc.**  
**Address City IN Zip: 1005 Fourth Street, Bedford, Indiana 47421**  
**Operation Permit Number: SMF-093-9376-00009**  
**Reviewer: Scott Pan / EVP**  
**Date: February 4, 1998**

Potential to Emit (Uncontrolled)						
Process	Emission Rate After Control (lb/ton)	Emission Rate Uncontrolled (lb/ton)	Potential Throughput (lb/hr)	Potential Throughput (lbs/yr)	Control Efficiency	Uncontrolled Emissions (ton/year)
Rotary Furnace - RB-RFC	0.13	6.50	5,100	44,676,000	98.0%	72.60
Rotary Furnace - RB-RFD	0.13	6.50	5,100	44,676,000	98.0%	72.60
<b>Total State Potential Emissions Based on Rated Capacity at 8,760 Hours with no Controls</b>						<b>145.20</b>

**Methodology**

Uncontrolled PM Potential (lb/hr) = Emission rate (lb/ton) \* Potential Throughput (lbs/yr) \* 1 ton/2,000 lbs \* 1 ton/2,000 lbs / (1 - Control Efficiency)  
 Emission rate after control (0.13 lb/ton) based on the results of emission testing conducted at other IMCO facilities which operate similar baghouses with lime injection systems.  
 The emission rate includes the efficiency of the control device.

Federal Potential Emissions (Controlled)						
Process	Emission Rate After Control (lb/ton)	Emission Rate Uncontrolled (lb/ton)	Potential Throughput (lb/hr)	Annual Throughput (lbs/yr)	Control Efficiency	Controlled Emissions (ton/year)
Rotary Furnace - RB-RFC	0.13	6.50	5,100	44,676,000	98.0%	1.45
Rotary Furnace - RB-RFD	0.13	6.50	5,100	44,676,000	98.0%	1.45
<b>Total Federal Potential Emissions Based on Rated Capacity at 8,760 Hours after Controls</b>						<b>2.90</b>

**Methodology**

Limited Emissions (tons/yr) = Emission rate (lb/ton) \* Limited Throughput (lbs/yr) \* 1 ton/2,000 lbs \* 1 ton/2,000 lbs  
 Emission rate after control 0.13 (lb/ton) based on the results of emission testing conducted at other IMCO facilities which operate similar baghouses with lime injection systems.  
 The emission rate includes the efficiency of the control device.

**Compliance with 326 IAC 6-3-2:**

The following formula used to determine the compliance with 326 IAC 6-3-2 is as follows:

**E = (4.10 \* P<sup>0.67</sup>)** (For process weights less than 60,000 lbs/hr)

where: E = allowable emission rate in lbs/hr

P = process weight in tons/hr (2.55 tons/hr was for the furnace)

Therefore, E = (4.10 \* (2.55)<sup>0.67</sup>) = 7.68 lb/hr = 33.6 ton/yr > 1.45 ton/yr

WILL COMPLY

## Appendix A: Hazardous Air Pollutant (HAP) Emission Calculations

**Company Name:** IMCO Recycling of Indiana, Inc.  
**Address City IN Zip:** 1005 Fourth Street, Bedford, Indiana 47421  
**Operation Permit Number:** SMF-093-9376-00009  
**Reviewer:** Scott Pan  
**Date:** February 4, 1998

Pollutant	Emission Rate (lbs/ton)	Potential Throughput (lb/yr)	Control Efficiency	Potential to Emit (tons/yr)	Controlled Emissions (tons/yr)
<b>Chlorine</b> Rotary Furnace - C	8.00E-03	44,676,000	57%	0.21	0.09
<b>Hydrogen Chloride</b> Rotary Furnace - C	6.59E-02	44,676,000	91%	8.18	0.74
<b>Hydrogen Fluoride</b> Rotary Furnace - C	1.10E-02	44,676,000	84%	0.77	0.12
<b>Chlorine</b> Rotary Furnace - D	8.00E-03	44,676,000	57%	0.21	0.09
<b>Hydrogen Chloride</b> Rotary Furnace - D	6.59E-02	44,676,000	91%	8.18	0.74
<b>Hydrogen Fluoride</b> Rotary Furnace - D	1.10E-02	44,676,000	84%	0.77	0.12
<b>Total (tons/yr):</b>				<b>18.31</b>	<b>1.90</b>

### METHODOLOGY

Controlled Emissions (tons/yr) = Emission Rate (lbs/ton) \* 1 ton/2000 lbs \* Potential Throughput (lb/yr) \* 1 ton/2000 lbs

Potential to Emit (tons/yr) = Controlled Emission Rate (tons/yr) / (1 - Control Efficiency)

Emission Rate after control (lbs/ton) based on stack test data conducted at another IMCO facility which operates a similar rotary furnace and control device configuration.

The emission rate (lbs/ton) includes the efficiencies of the control devices.

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

IMCO Recycling of Indiana  
1005 Fourth Street  
Bedford, Indiana 47421

**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 IMCO Recycling of Indiana, 1005 Fourth Street, Bedford, Indiana 47421, has constructed the rotary melting furnace, baghouse and lime injection system in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on January 13, 1998 and as permitted pursuant to **FESOP Significant Modification SMF-093-9376, Plant ID No. 093-00009** issued on \_\_\_\_\_

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)