

Mr. Mark Lennart  
KUS Zollner Division  
2425 South Coliseum Blvd.  
Fort Wayne, Indiana 46803

Re: 003-11697  
First Significant Revision to  
FESOP 003-5869-00064

Dear Mr. Lennart:

Zollner Company Limited Partnership was issued a permit on December 9, 1996 for an aluminum foundry. A letter requesting changes to this permit was received on December 21, 1999. Pursuant to the provisions of 326 IAC 2-8-11.1 a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

The modification consists of adding the following to their existing plant:

- (a) one (1) natural gas-fired reverberatory furnace, constructed in 1998, with a maximum melt capacity of 2,000 pounds of aluminum per hour, and a maximum heat input capacity of 4.6 million British thermal units (MMBtu) per hour, identified as F14; and
- (b) one (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds of aluminum per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4.

Potential emissions from the addition of each of the furnaces listed above to this source are at exempt levels pursuant to 326 IAC 2-1.1-3 (Exemptions). On March 31, 2000, KUS Zollner applied for an exemption letter (Exemption No. 003-12117-00064) for the new melt furnace, identified as M4. This was issued to the source on April 14, 2000.

Also, nine (9) existing reverberatory furnaces, identified as F3, F6, F8, F9, F10, F14, F15, F16, and F19, were removed from the source, one (1) reverberatory furnace listed in the original FESOP, identified as F24, was never constructed and would not be in the future, and two (2) of the existing melt furnaces, identified as M2 and M3, will be removed when the new melt furnace is operational. Also, the maximum heat input for the hearth furnace, now identified as F13, should be 5.1 MMBtu per hour instead of 5.0 MMBtu per hour.

The source also stated that the number of crucible furnaces listed in their current FESOP was incorrect and should be corrected from forty five (45) to sixty one (61). The crucible furnaces are now identified as C1a through C48a, C1b through C11b, and C1c through C2c. Furnaces C1a through C48a each have a maximum melt capacity of 200 pounds per hour. Furnaces C1b through C11b each have a maximum melt capacity of 400 pounds per hour. Furnaces C1c and C2c each have a maximum melt capacity of 600 pounds per hour. These additional furnaces were constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action.

Additionally, the source requested that the company name be changed from Zollner Company Limited Partnership to KUS Zollner Division, the responsible official be changed from Bud Sawyer to Mark Lennart, and that the pressure drop range of the baghouse controlling the shotblasting operation be changed from 1.0 to 4.0 inches of water to 1.0 to 8.0 inches of water based on manufacturer's information.

Finally, the source submitted IDEM approved stack test results from a test on reverberatory furnace 14 that was conducted on January 18, 2000. The test results yielded PM and PM-10 emission factors of 0.019 and 0.13 lb per ton of metal, respectively. These emission factors will now be used to calculate PM and PM-10 emissions from the reverberatory and melt furnaces at the source. Because of this, potential PM-10 emissions from the source are now less than 100 tons per year. Since potential source-wide PM-10 emissions are now less than 100 tons per year, the metal throughput limits for the reverberatory, melt, hearth, and crucible furnaces at this source are no longer necessary and will be removed from the FESOP.

A letter requesting an exemption (Exemption No. 003-12315-00064) for the conversion of the existing electric M1 melt furnace to a natural gas fired unit was received on May 30, 2000. The furnace will be equipped with a melt burner and two flat flame holding burners. Due to the natural gas conversion, the M1 furnace will have a maximum capacity of 1,200 pounds per hour of aluminum. The natural gas melt burner will have a maximum firing rate of 2.0 million British Thermal Units per hour (MMBTU/hr). The two flat flame holding burners will each have a maximum firing rate of 1.0 MMBTU/hr. Potential emissions from this furnace have been calculated and are at exempt levels. This includes emissions from all other processes at the source that are affected by the increase in aluminum throughput to this furnace. The exemption was issued to the source by IDEM, OAQ on July 6, 2000. Since emissions are at exempt levels, this unit will be listed as an insignificant activity and the compliance monitoring requirements for this furnace will be removed from the FESOP through this Significant Permit Revision.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Trish Earls, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call at (973) 575-2555, ext. 3219, or dial (800) 451-6027, press 0 and ask for extension 3-6878.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

Attachments  
TE/EVP

cc: File - Allen County  
U.S. EPA, Region V  
Allen County Health Department  
Air Compliance Section Inspector - Jennifer Schick

KUS Zollner Division  
Fort Wayne, Indiana  
Permit Reviewer: TE/EVP

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Significant Permit Revision No. 003-11697-00064

Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Michelle Boner

**FEDERALLY ENFORCEABLE STATE  
OPERATING PERMIT (FESOP)  
OFFICE OF AIR QUALITY**

**KUS Zollner Division  
2425 South Coliseum Blvd.  
Fort Wayne, Indiana 46803-2998**

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

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

Operation Permit No.: F003-5869-00064	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: December 9, 1996
First Significant Permit Revision 003-11697-00064	Pages Affected: 4, 5, 5a, 17, 22-24, 24a, 25, 26, 26a
Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date:

## SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-8-3(b)]

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The Permittee owns and operates a stationary aluminum foundry.

Authorized individual: Mark Lennart, Plant Manager/Vice President of Operations  
Source Address: 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
Mailing Address: 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
Phone Number: 219-426-8081  
SIC Code: 3361  
County Location: Allen  
County Status: Attainment for all criteria pollutants  
Source Status: Federally Enforceable State Operating Permit (FESOP)  
Minor Source, under PSD Rules  
1 of 28 Source Categories

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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This stationary source consists of the following emission units and pollution control devices:

- (a) one (1) evaporator, referred to as EV1.

### A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

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This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) natural gas-fired combustion sources with heat input equal to or less than ten million British thermal units per hour, including the following:
- (1) four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;
  - (2) one (1) 100 hp, natural gas-fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3; and
  - (3) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.
- (b) a gasoline fuel transfer and dispensing operation;
- (c) storage tanks;
- (d) vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

- (e) activities associated with the treatment of wastewater streams;
- (f) quenching operations used with heat treating processes;
- (g) replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (h) trimmers that do not produce fugitive emissions and that are equipped with a dust collection or trim material recovery device such as a bag filter or cyclone;
- (i) grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.
  - (1) two (2) shot blast systems, each with a maximum throughput capacity of 800 pounds of processed metal per hour, each with emissions controlled by one (1) baghouse;
- (j) a coating operation and curing oven for surface coating pistons which includes a pre-washer, dryer, print coating, and a curing oven (pre-heating and curing oven);
- (k) a phosphate pretreat line, consisting of six dip tanks connected to a mist eliminator;
- (l) an electric bake oven (14kW) to bake and cure a maximum of 80 pounds per hour graphite coated aluminum pistons;
- (m) a tin plating line, consisting of six dip tanks connected to a wet collector;
- (n) five parts washers (PW1 - 5) for washing cutting fluid off pistons;
- (o) two board washers (BW1 - 2) for washing cutting fluid off pistons;
- (p) two tin plating systems which include a detergent washer section, surface pretreatment, and plating and rinse sections;
- (q) lathe room exhaust system to remove gaseous emissions;
- (r) maintenance welding operations and maintenance brazing operations;
- (s) diesel testing cells;
- (t) The following facilities with emissions below insignificant thresholds:
  - (1) ten (10) natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F4 - F5, F11 - F12, F17 - F18, and F20 - F23. Furnaces F4 - F5, F17 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;

- (2) one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;
- (3) One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.1 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, identified as F13;
- (4) One (1) melt furnace, identified as M1, with a maximum melt capacity of 1,200 pounds per hour, equipped with one (1) natural gas-fired melt burner, with a maximum heat input capacity of 2.0 million British thermal units (MMBtu) per hour, and two (2) natural gas-fired flat flame holding burners, each with a maximum heat input capacity of 1.0 MMBtu per hour;
- (5) One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4;
- (6) forty-eight (48) natural gas-fired crucible furnaces, each with a maximum melt capacity of 200 pounds per hour, and each with a maximum heat input capacity of 0.5 MMBtu per hour, referred to as C1a - C48a;
- (7) eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b; and
- (8) two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2c.

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 the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

A.5 Prior Permit Conditions

- (a) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits.
- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued.

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

#### C.1 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

- (a) Pursuant to 326 IAC 2-8:
- (1) The potential to emit any regulated pollutant from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;
  - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
  - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (b) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (c) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

#### C.2 Opacity [326 IAC 5-1]

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

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

#### C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

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. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.



## SECTION D.1 FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

#### Insignificant Activities:

- (1) ten (10) natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F4 - F5, F11 - F12, F17 - F18, and F20 - F23. Furnaces F4 - F5, F17 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;
- (2) one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;
- (3) One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.1 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, identified as F13;
- (4) One (1) melt furnace, identified as M1, with a maximum melt capacity of 1,200 pounds per hour, equipped with one (1) natural gas-fired melt burner, with a maximum heat input capacity of 2.0 million British thermal units (MMBtu) per hour, and two (2) natural gas-fired flat flame holding burners, each with a maximum heat input capacity of 1.0 MMBtu per hour; and
- (5) One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4;

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

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

#### D.1.1 Particulate Matter (PM) [326 IAC 6-3]

- (a) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the ten (10) reverberatory furnaces, identified as F4 - F5, F11, F12, F17 - F18, F20 - F23, shall not exceed the allowable emission rate of 2.22 pounds per hour, based on a process weight rate of 800 pounds per hour for each furnace.
- (b) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) reverberatory furnace, identified as F14, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.
- (c) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) melt furnace, identified as M1, shall not exceed the allowable emission rate of 2.91 pounds per hour, based on a process weight rate of 1,200 pounds per hour.
- (d) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) melt furnace, identified as M4, shall not exceed the allowable emission rate of 4.76 pounds per hour, based on a process weight rate of 2,500 pounds per hour.
- (e) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) hearth furnace, identified as F13, shall not exceed the allowable emission rate of 4.1 pounds per

hour, based on a process weight rate of 2,000 pounds per hour.

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

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

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

#### D.1.1a Particulate Matter (PM) [326 IAC 2-2]

- (a) The PM emissions from each of the ten (10) reverberatory furnaces, identified as F4 - F5, F11, F12, F17 - F18, F20 - F23, shall be limited to 0.42 pounds per hour (18.4 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (b) The PM emissions from the one (1) reverberatory furnace, identified as F14, shall be limited to 0.63 pounds per hour (2.76 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (c) The PM emissions from the one (1) melt furnace, identified as M1, shall be limited to 0.35 pounds per hour (1.53 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (d) The PM emissions from the one (1) melt furnace, identified as M4, shall be limited to 0.71 pounds per hour (3.11 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (e) The PM emissions from the one (1) hearth furnace, identified as F13, shall be limited to 0.63 pounds per hour (2.76 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

Since the pound per hour PM emission limits to ensure the requirements of 326 IAC 2-2 (PSD) do not apply are less than the pound per hour PM emission limits pursuant to 326 IAC 6-3, these limits will also satisfy the requirements of 326 IAC 6-3-2.

#### D.1.2 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 the reverberatory furnaces, dry hearth furnaces, and melt furnaces.

### **Compliance Determination Requirements**

#### D.1.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

During the period between 24 months and 36 months after issuance of this permit, the Permittee shall perform PM10 and PM testing on a representative reverberatory furnace utilizing methods per 40 CFR Part 60 Appendix A, Method 5 or 17 for PM, and 40 CFR Part 51, Appendix M, Methods 201 or 201a and 202 for PM10, 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. Testing shall be conducted in accordance with Section C- Performance Testing.

## SECTION D.2 FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

Insignificant Activities:

- (6) forty-eight (48) natural gas-fired crucible furnaces, each with a maximum melt capacity of 200 pounds per hour, and each with a maximum heat input capacity of 0.5 MMBtu per hour, referred to as C1a - C48a;
- (7) eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b;
- (8) two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2c.

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

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

#### D.2.1 Particulate Matter (PM) [326 IAC 6-3]

- (a) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1a through C48a shall not exceed the allowable emission rate of 0.88 pounds per hour, based on a process weight rate of 200 pounds per hour for each furnace.
- (b) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1b through C11b shall not exceed the allowable emission rate of 1.4 pounds per hour, based on a process weight rate of 400 pounds per hour for each furnace.
- (c) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1c and C2c shall not exceed the allowable emission rate of 1.8 pounds per hour, based on a process weight rate of 600 pounds per hour for each furnace.

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

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

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

#### D.2.1a Particulate Matter (PM) [326 IAC 2-2]

- (a) The PM emissions from each of the crucible furnaces identified as C1a through C48a shall be limited to 0.19 pounds per hour (39.95 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

- (b) The PM emissions from each of the crucible furnaces identified as C1b through C11b shall be limited to 0.38 pounds per hour (18.31 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (c) The PM emissions from each of the crucible furnaces identified as C1c and C2c shall be limited to 0.57 pounds per hour (4.99 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

Since the pound per hour PM emission limits to ensure the requirements of 326 IAC 2-2 (PSD) do not apply are less than the pound per hour PM emission limits pursuant to 326 IAC 6-3, these limits will also satisfy the requirements of 326 IAC 6-3-2.

D.2.2 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 the crucible furnaces.

## SECTION D.3

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

Insignificant Activities:

- (i) grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.
  - (1) two (2) shot blast systems, each with a maximum throughput capacity of 800 pounds of processed metal per hour, each with emissions controlled by one (1) baghouse;

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

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

#### D.3.1 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations), the baghouses shall operate at all times that the shot blasting systems are in operation and the particulate matter emissions from each of the shot blasting systems shall not exceed 2.2 pounds per hour, based on a process weight rate of 800 pounds per hour.

The above pounds per hour limitation was calculated with the following equation:

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

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

#### D.3.2 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 the shot blasting systems and their control devices.

## SECTION D.5

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

Insignificant Activities:

- (a) natural gas-fired combustion sources with heat input equal to or less than ten million British thermal units per hour, including the following:
  - (1) four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;
  - (2) one (1) 100 hp, natural gas-fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3; and
  - (3) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.

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

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

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

- (a) Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), the following conditions shall apply:
  - (1) particulate matter (PM) emissions from the 8.4, 5.6, and 6.7 million British thermal units per hour boilers (boilers 1, 2, and 5) shall be limited to 0.8 pound per million British thermal unit of heat input.
  - (2) Particulate matter emissions from the 3.35 million British thermal units per hour boiler (boiler 3) shall be limited to 0.6 pound per million British thermal unit of heat input.
- (b) Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate matter (PM) emissions from the 5.6 and 2.5 million British thermal units per hour boilers (boilers 4 and 6) shall be limited to 0.63 pound per million British thermal unit of heat input.

## Indiana Department of Environmental Management Office of Air Quality

### Addendum to the Technical Support Document for a Permit Revision to a Federally Enforceable State Operating Permit

Source Name:	KUS Zollner Division
Source Location:	2425 South Coliseum Boulevard Fort Wayne, Indiana 46803
County:	Allen
SIC Code:	3361
Operation Permit No.:	F 003-5869-00064
Operation Permit Issuance Date:	December 9, 1996
Permit Revision No.:	003-11697-00064
Permit Reviewer:	Trish Earls/EVP

On May 19, 2000, the Office of Air Management (OAM), now referred to as the Office of Air Quality (OAQ), had a notice published in the Fort Wayne Journal Gazette, Fort Wayne, Indiana, stating that KUS Zollner Division had applied for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP) to add one (1) melt furnace, one (1) reverberatory furnace, and sixteen (16) crucible furnaces to their existing aluminum foundry. The notice also stated that OAM, now OAQ, proposed to issue a permit for this installation 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.

As of January 1, 2001, the Office of Air Management is now being referred to as the Office of Air Quality. Therefore, all references to the Office of Air Management have been revised to refer to the Office of Air Quality.

On June 16, 2000, Kathryn Stowring of August Mack Environmental, Inc. (August Mack) submitted comments on behalf of KUS Zollner Division (Zollner) on the proposed permit. The summary of the comments and corresponding responses is as follows:

#### **Comment #1**

##### Section A.1 - General Information

Please revise the authorized individual to read as follows: Mr. Mark Lennart, Plant Manager/Vice President of Operations.

#### **Response #1**

Section A.1 of the FESOP is revised to include the correct authorized individual. This section has also been revised to include identification of the source as one of the 28 listed source categories under 326 IAC 2-2 (PSD). Section A.1 now reads as follows:

##### A.1 General Information [326 IAC 2-8-3(b)]

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The Permittee owns and operates a stationary aluminum foundry.

Authorized individual:	<del>Frank Pohlmann, President and CEO</del> <b>Mark Lennart, Plant Manager/Vice President of Operations</b>
Source Address:	2425 South Coliseum Blvd., Fort Wayne, Indiana 46803

Mailing Address: 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
Phone Number: 219-426-8081  
SIC Code: 3361  
County Location: Allen  
County Status: Attainment for all criteria pollutants  
Source Status: Federally Enforceable State Operating Permit (FESOP)  
Minor Source, under PSD Rules  
**1 of 28 Source Categories**

## **Comment #2**

### Section A.3 - Insignificant Activities

Please revise part (i) to include the buffing operations in conjunction with the grinding and machining operations at the Zollner facility. There are two buffing stations in the finishing operations. Each buffing station is used to fine polish a piston.

Please revise part (r) to include the maintenance brazing operations in conjunction with the maintenance welding operations at the Zollner facility. The maintenance brazing operations are utilized to repair tools at the Zollner facility.

Please include diesel testing cells as an insignificant activity. The diesel testing cells are utilized for quality control testing of the manufactured pistons.

## **Response #2**

Parts (i) and (r) of Section A.3 of the FESOP are revised to read as follows:

- (i) grinding and machining operations **and buffing operations;**
- (r) maintenance welding operations **and maintenance brazing operations;**

A new part (s) has been added to section A.3 and reads as follows:

- (s) **diesel testing cells;**

## **Comments #3 and #4**

### Section D.1

Please revise the facility description for the one electric melt furnace identified as M1 according to the request for exemption letter dated May 26, 2000 which was submitted to the IDEM for the conversion of the electric M1 melt furnace to a natural gas fired unit. The furnace will be equipped with a melt burner and two flat flame holding burners. Due to the natural gas conversion, the M1 furnace will have a maximum capacity of 1,200 pounds per hour of aluminum. The natural gas melt burner will have a maximum firing rate of 2.0 million British Thermal Units per hour (mmBTU/hr). The two flat flame holding burners will each have a maximum firing rate of 1.0 mmBTU/hr.

It is August Mack's understanding that compliance monitoring is not required for an emission unit which has the potential to emit PM and PM10 emissions below the 5.0 tons per year exemption threshold level. Since each reverberatory and melt furnace has the potential to emit PM and PM10 emissions below the 5.0 tons per year exemption threshold and each utilizes a dedicated stack, please remove the visible emissions compliance monitoring requirements from Section D.1.4. If the IDEM deems that the visible emissions are necessary and since each of these emission units is an insignificant activity, please reduce the required visible emission notations to once per day during normal daylight operations.



## Section D.2

It is August Mack's understanding, that compliance monitoring is not required for an emission unit which has the potential to emit PM and PM10 emissions below the 5.0 tons per year exemption threshold level. Since each crucible furnace has the potential to emit PM and PM10 emissions below the 5.0 tons per year exemption threshold, please remove the visible emissions compliance monitoring requirements from Section D.2.3. If the IDEM deems that the visible emissions are necessary and since each of these emission units is an insignificant activity, please reduce the required visible emissions notations to once per day during normal daylight operations.

## **Responses #3 and #4**

A letter requesting an exemption (Exemption No. 003-12315-00064) for the modification to the melt furnace identified as M1 was received on May 30, 2000. Potential emissions from this furnace have been calculated and are at exempt levels. This includes emissions from all other processes at the source that are affected by the increase in aluminum throughput to this furnace. This exemption was issued to the source by IDEM, OAM (now OAQ) on July 6, 2000. Since emissions are at exempt levels, this unit will be listed as an insignificant activity and the compliance monitoring requirements for this furnace will be removed from the FESOP.

Potential PM and PM10 emissions from the melting that occurs in the reverberatory and melt furnaces at this source were calculated using emission factors developed during an IDEM approved stack test conducted on January 18, 2000 on reverberatory furnace #14. These emission factors were approved by the OAM (now OAQ) on March 7, 2000 and are valid for all the reverberatory and melt furnaces at the source. Total potential emissions from each of the reverberatory and melt furnaces at this source, including emissions from natural gas combustion and pouring/casting, are less than the insignificant activity thresholds per 326 IAC 2-7-1(21)(A) and (B). Therefore, each of the reverberatory and melt furnaces should be listed as insignificant activities in the FESOP. Therefore, they have been added under a new item (t) under section A.3.

After further discussion with Kathryn Stowring of August Mack, it was determined that each of the crucible furnaces has its own exhaust stack and that each furnace exhausts inside the building only. Therefore, visible emission notations are not required. Also, based on the potential emissions of each furnace, they will now be considered insignificant activities. Therefore, they have also been added to a new item (t) under section A.3

Additionally, further information was received from Zollner on March 8, 2001 that two (2) more of the existing reverberatory furnaces (ID F6 and F16) have been removed from the source. Therefore, the emission calculations in Appendix A have been revised to reflect the correct existing source emissions. Also, all references to these furnaces in sections A.2 and D.1 have been removed.

The revised sections A.2 and A.3 now read as follows:

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) ~~twelve (12) natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F4 - F6, F11 - F12, F16 - F18, and F20 - F23. Furnaces F4 - F6, F16 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;~~

- ~~(b) one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;~~
- ~~(c) One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.1 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, identified as F13;~~
- ~~(d) One (1) electric melt furnace, with a maximum melt capacity of 800 pounds per hour, identified as M1;~~
- ~~(e) One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4;~~
- ~~(f) forty-eight (48) natural gas-fired crucible furnaces, each with a maximum melt capacity of 200 pounds per hour, and each with a maximum heat input capacity of 0.5 MMBtu per hour, referred to as C1a - C48a;~~
- ~~(g) eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b;~~
- ~~(h) two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2e;~~
- ~~(i)(a) two (2) shot blast systems, with emissions controlled by two baghouses;~~
- ~~(i)(b) one (1) evaporator, referred to as EV1;~~
- ~~(i)(c) four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;~~
- ~~(i)(d) one (1) 100 hp, natural gas-oil fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3;~~
- ~~(i)(e) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.~~

**A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]**

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This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) natural gas-fired combustion sources with heat input equal to or less than ten million British thermal units per hour;
- (b) a gasoline fuel transfer and dispensing operation;
- (c) storage tanks;
- (d) vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

- (e) activities associated with the treatment of wastewater streams;
- (f) quenching operations used with heat treating processes;
- (g) replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (h) trimmers that do not produce fugitive emissions and that are equipped with a dust collection or trim material recovery device such as a bag filter or cyclone;
- (i) grinding and machining operations and buffing operations;
- (j) a coating operation and curing oven for surface coating pistons which includes a pre-washer, dryer, print coating, and a curing oven (pre-heating and curing oven);
- (k) a phosphate pretreat line, consisting of six dip tanks connected to a mist eliminator;
- (l) an electric bake oven (14kW) to bake and cure a maximum of 80 pounds per hour graphite coated aluminum pistons;
- (m) a tin plating line, consisting of six dip tanks connected to a wet collector;
- (n) five parts washers (PW1 - 5) for washing cutting fluid off pistons;
- (o) two board washers (BW1 - 2) for washing cutting fluid off pistons;
- (p) two tin plating systems which include a detergent washer section, surface pretreatment, and plating and rinse sections;
- (q) lathe room exhaust system to remove gaseous emissions;
- (r) maintenance welding operations and maintenance brazing operations;
- (s) diesel testing cells;
- (t) **The following facilities with emissions below insignificant thresholds:**
  - (1) **ten (10) natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F4 - F5, F11 - F12, F17 - F18, and F20 - F23. Furnaces F4 - F5, F17 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;**
  - (2) **one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;**
  - (3) **One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.1 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, identified as F13;**
  - (4) **One (1) melt furnace, identified as M1, with a maximum melt capacity of 1,200 pounds per hour, equipped with one (1) natural gas-fired melt burner, with a maximum heat input capacity of 2.0 million British thermal units**

- (5) **(MMBtu) per hour, and two (2) natural gas-fired flat flame holding burners, each with a maximum heat input capacity of 1.0 MMBtu per hour;**
- (5) **One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4;**
- (6) **forty-eight (48) natural gas-fired crucible furnaces, each with a maximum melt capacity of 200 pounds per hour, and each with a maximum heat input capacity of 0.5 MMBtu per hour, referred to as C1a - C48a;**
- (7) **eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b; and**
- (8) **two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2c.**

The compliance monitoring requirements for these units have been removed from the FESOP since they are not necessary for units with potential emissions at exempt levels. Sections D.1 and D.2 of the FESOP are now revised to read as follows:

#### SECTION D.1 FACILITY OPERATION CONDITIONS

##### Facility Description [326 IAC 2-8-4(10)]:

##### Insignificant Activities:

- (a)(1) ~~twelve (12)~~ **ten (10)** natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F4 - F65, F11 - F12, F167 - F18, and F20 - F23. Furnaces F4 - F65, F167 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;
- (b)(2) one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;
- (c)(3) One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.1 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, identified as F13;
- (d)(4) ~~One (1) electric melt furnace, with a maximum melt capacity of 800 pounds per hour, identified as M4;~~  
**One (1) melt furnace, identified as M1, with a maximum melt capacity of 1,200 pounds per hour, equipped with one (1) natural gas-fired melt burner, with a maximum heat input capacity of 2.0 million British thermal units (MMBtu) per hour, and two (2) natural gas-fired flat flame holding burners, each with a maximum heat input capacity of 1.0 MMBtu per hour; and**
- (e)(5) One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4.

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

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

### D.1.1 Particulate Matter (PM) [326 IAC 6-3]

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- (a) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the ~~twelve (12)~~ **ten (10)** reverberatory furnaces, identified as F4 - F65, F11, F12, F167 - F18, F20 - F23, shall not exceed the allowable emission rate of 2.22 pounds per hour, based on a process weight rate of 800 pounds per hour for each furnace.
- (b) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) reverberatory furnace, identified as F14, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.
- (c) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) melt furnace, identified as M1, shall not exceed the allowable emission rate of ~~2.22~~ **2.91** pounds per hour, based on a process weight rate of ~~800~~ **1,200** pounds per hour.
- (d) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) melt furnace, identified as M4, shall not exceed the allowable emission rate of 4.76 pounds per hour, based on a process weight rate of 2,500 pounds per hour.
- (e) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) hearth furnace, identified as F13, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.

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

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

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

### D.1.1a Particulate Matter (PM) [326 IAC 2-2]

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- (a) The PM emissions from each of the ~~twelve (12)~~ **ten (10)** reverberatory furnaces, identified as F4 - F65, F11, F12, F167 - F18, F20 - F23, shall be limited to ~~0.3542~~ pounds per hour (18.4 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (b) The PM emissions from the one (1) reverberatory furnace, identified as F14, shall be limited to 0.63 pounds per hour (2.76 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (c) The PM emissions from the one (1) melt furnace, identified as M1, shall be limited to 0.35 pounds per hour (1.53 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (d) The PM emissions from the one (1) melt furnace, identified as M4, shall be limited to 0.71 pounds per hour (3.11 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (e) The PM emissions from the one (1) hearth furnace, identified as F13, shall be limited to

0.63 pounds per hour (2.76 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

Since the pound per hour PM emission limits to ensure the requirements of 326 IAC 2-2 (PSD) do not apply are less than the pound per hour PM emission limits pursuant to 326 IAC 6-3, these limits will also satisfy the requirements of 326 IAC 6-3-2.

**D.1.2 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 the reverberatory furnaces, dry hearth furnace, and melt furnaces.

**Compliance Determination Requirements**

**D.1.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]**

During the period between 24 months and 36 months after issuance of this permit, the Permittee shall perform PM10 and PM testing on a representative reverberatory furnace utilizing methods per 40 CFR Part 60 Appendix A, Method 5 or 17 for PM, and 40 CFR Part 51, Appendix M, Methods 201 or 201a and 202 for PM10, 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. Testing shall be conducted in accordance with Section C- Performance Testing.

**~~Compliance Monitoring Requirements [326 IAC 2-8-5(a)(1)]~~**

**~~D.1.4 Visible Emissions Notations~~**

- ~~(a) Visible emission notations of the furnace stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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.~~

## SECTION D.2

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

#### Insignificant Activities:

- (f)(6) forty-eight (48) natural gas-fired crucible furnaces, each with a maximum melt capacity of 200 pounds per hour, and each with a maximum heat input capacity of 0.5 MMBtu per hour, referred to as C1a - C48a;
- (g)(7) eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b;
- (h)(8) two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2c.

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

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

#### D.2.1 Particulate Matter (PM) [326 IAC 6-3]

- (a) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1a through C48a shall not exceed the allowable emission rate of 0.88 pounds per hour, based on a process weight rate of 200 pounds per hour for each furnace.
- (b) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1b through C11b shall not exceed the allowable emission rate of 1.4 pounds per hour, based on a process weight rate of 400 pounds per hour for each furnace.
- (c) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1c and C2c shall not exceed the allowable emission rate of 1.8 pounds per hour, based on a process weight rate of 600 pounds per hour for each furnace.

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

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

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

#### D.2.1a Particulate Matter (PM) [326 IAC 2-2]

- (a) The PM emissions from each of the crucible furnaces identified as C1a through C48a shall be limited to 0.19 pounds per hour (39.95 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

- (b) The PM emissions from each of the crucible furnaces identified as C1b through C11b shall be limited to 0.38 pounds per hour (18.31 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (c) The PM emissions from each of the crucible furnaces identified as C1c and C2c shall be limited to 0.57 pounds per hour (4.99 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

Since the pound per hour PM emission limits to ensure the requirements of 326 IAC 2-2 (PSD) do not apply are less than the pound per hour PM emission limits pursuant to 326 IAC 6-3, these limits will also satisfy the requirements of 326 IAC 6-3-2.

#### D.2.2 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 the crucible furnaces.

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

##### ~~D.2.3 Visible Emissions Notations~~

- ~~(a) Visible emission notations of the furnace stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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.~~

Due to the modification to melt furnace M1, the source wide potential emission calculations have been revised to reflect the new aluminum throughput to M1 of 1,200 pounds per hour. Also, HAP emission calculations from natural gas combustion in the new furnaces were performed. Additionally, since two of the reverberatory furnaces (ID F6 and F16) have been removed from the source, the existing source emissions have been revised to reflect this.

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

The Limited Potential to Emit section of the TSD is revised as follows:

#### **Limited Potential to Emit**

The table below summarizes the total potential to emit, reflecting all limits, of the significant



emission units.

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
New Furnaces F14 and M4	0.27	1.61	0.02	0.24	3.71	4.42	<del>0.0</del> <b>0.08</b>
Existing Reverberatory and Melt Furnaces	<del>0.83</del> <b>0.78</b>	<del>4.77</del> <b>4.39</b>	<del>0.10</del> <b>0.12</b>	<del>0.90</del> <b>0.87</b>	<del>13.72</del> <b>13.41</b>	<del>16.34</del> <b>15.98</b>	6.72
Additional Crucible Furnaces	25.92	23.56	0.04	0.35	5.33	6.35	<del>0.0</del> <b>0.12</b>
Existing Crucible Furnaces	37.64	34.26	0.06	0.54	8.28	9.86	1.17
Additional Pouring/Casting	0.0	0.0	0.47	3.28	0.0	0.23	0.0
Existing Pouring/Casting	0.0	0.0	<del>0.94</del> <b>0.88</b>	<del>6.56</del> <b>6.19</b>	0.0	<del>0.47</del> <b>0.44</b>	0.0
Natural Gas Combustion*	0.23	0.93	0.07	0.67	10.23	12.18	0.0
Evaporator**	0.0	0.0	0.0	24.0	0.0	0.0	0.0
Surface Coating**	0.0	0.0	0.0	0.62	0.0	0.0	0.07
Tin Electroplating**	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welding**	4.56	4.56	0.0	0.0	0.0	0.0	0.0
Shot blasting***	2.41	2.41	0.0	0.0	0.0	0.0	0.0
Parts Washers**	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions	<del>71.86</del> <b>71.81</b>	<del>72.10</del> <b>71.72</b>	<del>1.70</del> <b>1.66</b>	<del>37.16</del> <b>36.76</b>	<del>41.27</del> <b>40.96</b>	<del>49.85</del> <b>49.46</b>	<del>7.96</del> <b>8.16</b>
Title V Applicability Threshold	N/A	100	100	100	100	100	10/25
PSD Applicability Threshold	100	100	100	100	100	100	N/A

Note: All furnace emissions include emissions from natural gas combustion.

\* Emissions from natural gas combustion are based on updated AP-42 emission factors as of 3/98. They include combustion emissions from existing boilers at the source.

\*\* Emissions from other existing equipment is based on FESOP No. F003-5869-00064, issued 12/9/96.

\*\*\* Allowable PM emissions from shot blasting are based on the 326 IAC 6-3-2 allowable emission rate of 0.551 lb/hr pursuant to FESOP No. F003-5869-00064, issued 12/9/96.

- (a) Limited emissions from this source, including this modification, are less than 100 tons per year, therefore, this source is not subject to the Part 70 Operating Permit Program. The requirements of 326 IAC 2-2 (PSD) are also not applicable.

The Compliance Requirements section of the TSD is also revised as follows:

## Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, ~~OP~~ **OAQ**, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

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

1. ~~The reverberatory, melt, and hearth furnaces have applicable compliance monitoring conditions as specified below:~~

~~(a) Visible emissions notations of the furnace stack exhausts shall be performed once per shift 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.~~

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

2. ~~The crucible furnaces have applicable compliance monitoring conditions as specified below:~~

~~(a) Visible emissions notations of the crucible furnace stack exhausts shall be performed once per shift 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.~~

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

31. The natural gas combustion units have applicable compliance monitoring conditions as specified below:
- (a) Quarterly reports shall be submitted to IDEM, ~~ΘAM~~ **OAQ** including the amount of natural gas combusted at the source.

These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).

42. The evaporator has applicable compliance monitoring conditions as specified below:
- (a) Quarterly reports shall be submitted to IDEM, ~~ΘAM~~ **OAQ** including the amount of oil charged to the evaporator minus the oil disposed of as waste.

These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).

53. The shot blasting operation has applicable compliance monitoring conditions as specified below:
- (a) Visible emissions notations of the shot blasting operation stack exhaust shall be performed once per ~~shift~~ **day** 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 each of the baghouses controlling the two (2) shot blasting systems, at least once per ~~shift~~ **day** when the shot blasting systems are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across each of the baghouses shall be maintained within the range of 1.0 to 8.0 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.

These monitoring conditions are necessary because the baghouses for the shot blasting operation must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (Part 70).

#### **Comment #5**

Since the shot blast systems, have a federally enforceable PM limit of 0.551 pounds per hour (2.41 tons per year) which would classify the shot blast systems as an insignificant activity, please reduce the required parametric monitoring and visible emissions notations to once per day when the shot blast systems are in operation and once per day during normal daylight hours, respectively.

Please remove the requirements of recording the frequency and differential pressure of baghouse cleaning cycle. Monitoring these items will be impossible unless an employee is stationed next to the baghouse at all times.

#### **Response #5**

An emission unit may be classified as an insignificant activity based on the potential emissions from that emission unit, not on a federally enforceable emission limit. However, additional information was received from the source on October 20, 2000, stating that the design grain loading of each of the baghouses controlling each shot blast system is 0.02 grains per actual cubic foot and the flow rate for each baghouse is 1,300 actual cubic feet per minute (acfm). Therefore, the shot blast systems are insignificant activities because they belong to a listed activity under 326 IAC 2-7-1(21)(G)(xxiii). Since they are insignificant activities, the compliance monitoring requirements no longer apply and have been removed from the FESOP. Therefore, conditions D.3.3 through D.3.7 have been removed. Also, since these units are insignificant activities, their equipment descriptions have been moved from section A.2 to section A.3. Section A.2 and item (i) under section A.3 is further revised to read as follows:

#### **A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]**

This stationary source consists of the following emission units and pollution control devices:

- ~~(a)~~ ~~two (2) shot blast systems, with emissions controlled by two baghouses;~~
- ~~(b)~~**(a)** one (1) evaporator, referred to as EV1;
- ~~(c)~~**(b)** four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;
- ~~(d)~~**(c)** one (1) 100 hp, natural gas-oil fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3;

- ~~(e)~~(d) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (i) grinding and machining operations ~~and buffing operations~~ **controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.**
- (1) **two (2) shot blast systems, each with a maximum throughput capacity of 800 pounds of processed metal per hour, each equipped with one (1) baghouse for particulate matter control;**

The additional information received from the source also listed the maximum capacity of each of the shot blast machines as 800 pounds of processed metal per hour. Therefore, the allowable PM emission limit pursuant to 326 IAC 6-3-2 has been revised to 2.2 pounds per hour. Condition D.3.1 has been revised accordingly. The equipment descriptions for these shot blast systems now listed in section A.3 have also been revised to include the maximum capacity as shown above. Section D.3 is revised to read as follows:

**SECTION D.3 FACILITY OPERATION CONDITIONS**

**Facility Description [326 IAC 2-8-4(10)]:**

- ~~(a) two (2) shot blast systems, with emissions controlled by two baghouses.~~

**Insignificant Activities:**

- (i) grinding and machining operations ~~and buffing operations~~ **controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.**
- (1) **two (2) shot blast systems, each with a maximum throughput capacity of 800 pounds of processed metal per hour, each equipped with one (1) baghouse for particulate matter control.**

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

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

D.3.1 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations), the baghouses shall operate at all times that the shot blasting systems are in operation and the particulate matter emissions from **each of** the shot blasting systems shall not exceed ~~0.55~~ **2.2** pounds per hour, based on a process weight rate of ~~400~~ **800** pounds per hour.

The above pounds per hour limitation was calculated with the following equation:

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

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

#### D.3.2 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 the shot blasting systems and their control devices.

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

##### ~~D.3.3 Parametric Monitoring~~

~~The Permittee shall record the total static pressure drop across each of the baghouses used in conjunction with the shot blasting systems, at least once per working shift when the shot blasting systems 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 of the baghouses shall be maintained within the range of 1.0 and 8.0 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.3.4 Baghouse Inspections~~

~~An inspection shall be performed each calendar quarter of all bags controlling the shot blasting systems when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.~~

##### ~~D.3.5 Visible Emissions Notations~~

~~(a) Visible emission notations of the shot blast stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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.3.6 Broken or Failed Bag Detection~~

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~~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. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).~~

~~(b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).~~

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

#### **D.3.7 Record Keeping Requirements**

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~~(a) To document compliance with Condition D.3.5, the Permittee shall maintain records of visible emission notations of the shot blast stack exhaust once per shift.~~

~~(b) To document compliance with Condition D.3.3, 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 purchase 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.3.4, the Permittee shall maintain records of the~~

~~results of the inspections required under Condition D.3.4 and the dates the vents are redirected.~~

~~(d) All records shall be maintained in accordance with Section C—General Record Keeping Requirements, of this permit.~~

On October 20, 2000, Kathryn Stowring of August Mack submitted additional information in response to a request for additional information on behalf of KUS Zollner Division. Additional comments on the proposed permit were also included. The summary of the additional comments and corresponding responses is as follows:

#### **Comment #6**

All six boilers at this source utilize only natural gas as fuel. Therefore, the boiler referred to as B3 in the FESOP should be listed as a natural gas-fired boiler, not a natural gas-oil fired boiler.

Also, according to 326 IAC 2-7-1(21), natural gas-fired combustion sources with heat input equal to or less than ten (10) million British thermal units (Btu) per hour are considered insignificant activities by IDEM. Therefore, the six boilers at this source (B1 through B6), which all have heat input capacities less than 10 million Btu per hour, should be listed as insignificant activities.

#### **Response #6**

Since the six boilers at this source, identified as B1 through B6, each have maximum heat input capacities less than 10 million Btu per hour, these units will be listed as insignificant activities in the FESOP. Therefore, their equipment descriptions have been moved from section A.2 to section A.3. Section A.2 and item (a) under section A.3 now read as follows:

#### **A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]**

This stationary source consists of the following emission units and pollution control devices:

- (a) one (1) evaporator, referred to as EV1.
- ~~(b) four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;~~
- ~~(c) one (1) 100 hp, natural gas-oil fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3;~~
- ~~(d) one (1) natural gas fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.~~

#### **A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]**

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) natural gas-fired combustion sources with heat input equal to or less than ten million British thermal units per hour, **including the following:**

- (1) four (4) 200 hp, natural gas-fired boilers, with maximum heat input**



capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;

- (2) one (1) 100 hp, natural gas-fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3; and
- (3) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.

The equipment description in section D.5 of the FESOP is revised as follows:

#### **SECTION D.5 FACILITY OPERATION CONDITIONS**

##### **Facility Description [326 IAC 2-8-4(10)]:**

~~Six (6) natural gas-fired boilers, referred to as B1 – B6, with maximum heat input capacities of 8.4, 5.6, 3.35, 2.5, 6.7, and 1.25 million British thermal units per hour, respectively.~~

##### **Insignificant Activities:**

- (a) natural gas-fired combustion sources with heat input equal to or less than ten million British thermal units per hour, including the following:
  - (1) four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;
  - (2) one (1) 100 hp, natural gas-fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3; and
  - (3) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.

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

##### **Comment #7**

The source has a total maximum natural gas heat input capacity of 111.4 million Btu per hour. As a result, the potential emissions generated from the combustion of natural gas are less than 100 tons per year. Since a limit on natural gas usage is not necessary to limit source emissions below 100 tons per year, Zollner is requesting that the required natural gas quarterly reporting for the source be removed from the FESOP.

##### **Response #7**

Using the most recent emission factors for natural gas combustion from USEPA's AP-42, potential emission calculations for natural gas combustion were performed. When the limited emissions from all other emission units are combined with potential emissions from natural gas combustion, source-wide emissions of all pollutants are less than 100 tons per year. Therefore, a limit on natural gas usage is not necessary to comply with 326 IAC 2-8 (FESOP) and conditions D.5.2, D.5.3, and D.5.4 have been removed from the FESOP as follows:

~~D.5.2 Natural Gas Usage~~

~~\_\_\_\_\_ The natural gas usage for the entire source shall be limited to 117.5 million cubic feet per month. This condition is necessary in order to limit NOx emissions to 8.25 tons per month. Compliance with this condition is necessary in order to render the requirements of 326 IAC 2-7 not applicable.~~

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

#### ~~D.5.3 Record Keeping~~

~~\_\_\_\_\_ That the Permittee shall maintain records of the natural gas usage at the source. These records shall be made available upon request of the Office of Air Management (OAM) staff.~~

#### ~~D.5.4 Quarterly Reporting~~

~~\_\_\_\_\_ That a quarterly summary to document compliance with operation condition D.5.2 shall be submitted to the address listed in Section C - General Reporting Requirements, using the enclosed forms or their equivalent, within thirty (30) days after the end of the quarter being reported.~~

The Quarterly Report form for natural gas usage has also been removed from the FESOP.

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. The section of the State Rule Applicability - Entire Source section of the TSD discussing 326 IAC 2-8 (FESOP) is revised to read as follows:

#### 326 IAC 2-8 (FESOP)

To comply with the requirements of this rule, the following conditions shall apply:

- ~~(a) Pursuant to F003-5869-00064, issued December 9, 1996, the natural gas usage for the entire source shall be limited to 83.37 million cubic feet per month.~~
- (b) Pursuant to F003-5869-00064, issued December 9, 1996, the amount of oil charged to the evaporator minus the oil disposed of as waste shall be limited to 2,740 gallons per month. This is equivalent to a VOC emission limit of 2.0 tons per month.

Compliance with ~~these~~ **this** requirements will render the requirements of 326 IAC 2-7 (Part 70) not applicable.

Note: Due to the revised PM and PM-10 emission factors for the reverberatory and melt furnaces, which were based on a recent IDEM approved stack test, the metal throughputs to all furnaces at the source are no longer required to limit PM-10 emissions to less than 100 tons per year to comply with 326 IAC 2-8 (FESOP). **Also, due to the revised emission factors for natural gas combustion, a natural gas usage limitation is no longer required to limit NOx emissions below 100 tons per year to comply with 326 IAC 2-8 (FESOP).**

The Compliance Requirements section of the TSD is further revised as follows:

### **Compliance Requirements**

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement

for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

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

~~1. The natural gas combustion units have applicable compliance monitoring conditions as specified below:~~

~~(a) Quarterly reports shall be submitted to IDEM, OAQ including the amount of natural gas combusted at the source.~~

~~These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).~~

21. The evaporator has applicable compliance monitoring conditions as specified below:

(a) Quarterly reports shall be submitted to IDEM, OAQ including the amount of oil charged to the evaporator minus the oil disposed of as waste.

These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).

32. The shot blasting operation has applicable compliance monitoring conditions as specified below:

(a) Visible emissions notations of the shot blasting operation stack exhaust shall be performed once per day 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 each of the baghouses controlling the two (2) shot blasting systems, at least once per day when the shot blasting systems are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across each of the baghouses shall be maintained within the range of 1.0 to 8.0 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.

These monitoring conditions are necessary because the baghouses for the shot blasting operation must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (Part 70).

Upon further review, the OAQ has decided to make the following revision to the Technical Support Document:

1. The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. The Federal Rule Applicability section of the TSD has been revised to add a discussion of the applicability of 40 CFR 63.1500 through 63.1519, Subpart RRR, "National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production". Part (c) has been added as follows:

#### **Federal Rule Applicability**

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.
- (c) **This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63.1500 through 63.1519, Subpart RRR, because pursuant to 40 CFR 63.1500 (d), the requirements of this subpart do not apply to manufacturers of aluminum die castings, aluminum foundries, or aluminum extruders that melt no materials other than clean charge and materials generated within the facility; and that also do not operate a thermal chip dryer, sweat furnace or scrap dryer/delacquering kiln/decoating kiln. This source, which is not a major source of HAPs, only melts clean charge and does not operate a thermal chip dryer, sweat furnace or scrap dryer/delacquering kiln/decoating kiln, therefore, the requirements of this rule do not apply.**

## Indiana Department of Environmental Management Office of Air Management

### Technical Support Document (TSD) for a Permit Revision to a Federally Enforceable State Operating Permit

#### Source Background and Description

<b>Source Name:</b>	<b>KUS Zollner Division</b>
<b>Source Location:</b>	<b>2425 South Coliseum Boulevard Fort Wayne, Indiana 46803</b>
<b>County:</b>	<b>Allen</b>
<b>SIC Code:</b>	<b>3361</b>
<b>Operation Permit No.:</b>	<b>F 003-5869-00064</b>
<b>Operation Permit Issuance Date:</b>	<b>December 9, 1996</b>
<b>Permit Revision No.:</b>	<b>003-11697-00064</b>
<b>Permit Reviewer:</b>	<b>Trish Earls/EVP</b>

The Office of Air Management (OAM) has reviewed a revision application from KUS Zollner Division relating to a modification of this existing aluminum foundry.

#### History

On December 21, 1999, KUS Zollner Division submitted an application to the OAM requesting to add the following to their existing plant:

- (a) one (1) natural gas-fired reverberatory furnace, constructed in 1998, with a maximum melt capacity of 2,000 pounds of aluminum per hour, and a maximum heat input capacity of 4.6 million British thermal units (MMBtu) per hour, identified as F14; and
- (b) one (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds of aluminum per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4.

Potential emissions from the addition of each of the furnaces listed above to this source are at exempt levels pursuant to 326 IAC 2-1.1-3 (Exemptions). On March 31, 2000, KUS Zollner applied for an exemption letter (Exemption No. 003-12117-00064) for the new melt furnace, identified as M4. This is currently under review at IDEM, OAM.

They also stated that seven (7) existing reverberatory furnaces, identified as F3, F8, F9, F10, F14, F15, and F19, were removed from the source, one (1) reverberatory furnace listed in the original FESOP, identified as F24, was never constructed and would not be in the future, and two (2) of the existing melt furnaces, identified as M2 and M3, would be removed when the new melt furnace is operational. Also, the maximum heat input for the hearth furnace, now identified as F13, should be 5.1 MMBtu per hour instead of 5.0 MMBtu per hour.

The source also stated that the number of crucible furnaces listed in their current FESOP was incorrect and should be corrected from forty five (45) to sixty one (61). The crucible furnaces are now identified as C1a through C48a, C1b through C11b, and C1c through C2c. Furnaces C1a through C48a each have a maximum melt capacity of 200 pounds per hour. Furnaces C1b through C11b each have a maximum melt capacity of 400 pounds per hour. Furnaces C1c and C2c each have a maximum melt capacity of 600 pounds per hour.

Thirdly, the source requested that the company name be changed from Zollner Company Limited Partnership to KUS Zollner Division, the responsible official be changed from Bud Sawyer to Frank Pohlmann, and that the pressure drop range of the baghouse controlling the shotblasting operation be changed from 1.0 to 4.0 inches of water to 1.0 to 8.0 inches of water based on manufacturer's information.

Finally, the source submitted IDEM approved stack test results from a test on reverberatory furnace 14 that was conducted on January 18, 2000. The test results yielded PM and PM-10 emission factors of 0.019 and 0.13 lb per ton of metal, respectively. These emission factors will now be used to calculate PM and PM-10 emissions from the reverberatory and melt furnaces at the source. Because of this, potential PM-10 emissions from the source are now less than 100 tons per year. Since potential source-wide PM-10 emissions are now less than 100 tons per year, the metal throughput limits for the reverberatory, melt, hearth, and crucible furnaces at this source are no longer necessary. The source has requested that these limits be removed from the FESOP.

Zollner Company Limited Partnership, now KUS Zollner Division, was issued a Federally Enforceable State Operating Permit (FESOP) (F003-5869-00064) on December 9, 1996. The source has stated that it will continue to comply with all the emission limits in their current FESOP.

### **Existing Approvals**

The source was issued a FESOP (F003-5869-00064) on December 9, 1996.

### **Enforcement Issue**

- (a) IDEM is aware that the sixteen (16) additional crucible furnaces, not included in the original FESOP, have been constructed and operated prior to receipt of the proper permit.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

### **Recommendation**

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

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

An application for the purposes of this review was received on December 21, 1999.

### **Emission Calculations**

See Appendix A of this document for detailed emissions calculations (5 pages).

**Potential To Emit of Modification**

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

Pollutant	Potential To Emit (tons/year)
PM	26.19
PM-10	25.18
SO <sub>2</sub>	0.53
VOC	3.87
CO	9.05
NO <sub>x</sub>	11.00

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

Note: These emissions represent emissions from the reverberatory furnace F14, the new melt furnace M4, and the sixteen (16) additional crucible furnaces.

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM10 from this modification are equal to or greater than 25 tons per year. Therefore, the FESOP is being revised through a Significant Permit Revision pursuant to 326 IAC 2-8-11.1.
- (b) Fugitive Emissions  
Since this type of operation is one of the twenty-eight (28) listed source categories under 326 IAC 2-2 (Secondary Metal Production Plants), the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

**Limited Potential to Emit**

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
New Furnaces F14 and M4	0.27	1.61	0.02	0.24	3.71	4.42	0.0
Existing Reverberatory and Melt Furnaces	0.83	4.77	0.10	0.90	13.72	16.34	6.72
Additional Crucible Furnaces	25.92	23.56	0.04	0.35	5.33	6.35	0.0
Existing Crucible Furnaces	37.64	34.26	0.06	0.54	8.28	9.86	1.17
Additional Pouring/Casting	0.0	0.0	0.47	3.28	0.0	0.23	0.0
Existing Pouring/Casting	0.0	0.0	0.94	6.56	0.0	0.47	0.0
Natural Gas Combustion*	0.23	0.93	0.07	0.67	10.23	12.18	0.0

Evaporator**	0.0	0.0	0.0	24.0	0.0	0.0	0.0
Surface Coating**	0.0	0.0	0.0	0.62	0.0	0.0	0.07
Tin Electroplating**	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welding**	4.56	4.56	0.0	0.0	0.0	0.0	0.0
Shot blasting***	2.41	2.41	0.0	0.0	0.0	0.0	0.0
Parts Washers**	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions	71.86	72.10	1.70	37.16	41.27	49.85	7.96
Title V Applicability Threshold	N/A	100	100	100	100	100	10/25
PSD Applicability Threshold	100	100	100	100	100	100	N/A

Note: All furnace emissions include emissions from natural gas combustion.

\* Emissions from natural gas combustion are based on updated AP-42 emission factors as of 3/98. They include combustion emissions from existing boilers at the source.

\*\* Emissions from other existing equipment is based on FESOP No. F003-5869-00064, issued 12/9/96.

\*\*\* Allowable PM emissions from shot blasting are based on the 326 IAC 6-3-2 allowable emission rate of 0.551 lb/hr pursuant to FESOP No. F003-5869-00064, issued 12/9/96.

- (a) Limited emissions from this source, including this modification, are less than 100 tons per year, therefore, this source is not subject to the Part 70 Operating Permit Program. The requirements of 326 IAC 2-2 (PSD) are also not applicable.

### County Attainment Status

The source is located in Allen County.

Pollutant	Status
PM-10	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Allen County has been designated as attainment or unclassifiable for ozone.



### **Federal Rule Applicability**

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.

### **State Rule Applicability - Entire Source**

#### 326 IAC 2-2 (PSD)

This source is a secondary metal production plant because it produces aluminum parts which are alloys. Therefore, this source is one of the 28 listed source categories under 326 IAC 2-2-1(p)(1). However, potential emissions of all criteria pollutants from this source are less than 100 tons per year, the requirements of this rule do not apply.

Although potential PM emissions from this source are less than 100 tons per year, the allowable pound per hour PM emission limits from the reverberatory, melt, hearth and crucible furnaces pursuant to 326 IAC 6-3-2 can exceed 100 tons per year based on 8,760 hours of operation per year. Therefore, a separate limit will be established to ensure that PM emissions from these furnaces do not exceed 91.8 tons per year for a source-wide limit of 99.0 tons per year.

#### 326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), which would require the source to submit an annual emission statement. Pursuant to this rule, any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable. This source, which is located in Allen County, has accepted federally enforceable operation conditions which limit emissions of all pollutants to which this rule applies to below 100 tons per year per pollutant, therefore, 326 IAC 2-6 does not apply.

#### 326 IAC 2-8 (FESOP)

To comply with the requirements of this rule, the following conditions shall apply:

- (a) Pursuant to F003-5869-00064, issued December 9, 1996, the natural gas usage for the entire source shall be limited to 83.37 million cubic feet per month.
- (b) Pursuant to F003-5869-00064, issued December 9, 1996, the amount of oil charged to the evaporator minus the oil disposed of as waste shall be limited to 2,740 gallons per month. This is equivalent to a VOC emission limit of 2.0 tons per month.

Compliance with these requirements will render the requirements of 326 IAC 2-7 (Part 70) not applicable.

Note: Due to the revised PM and PM-10 emission factors for the reverberatory and melt furnaces, which were based on a recent IDEM approved stack test, the metal throughputs to all furnaces at the source are no longer required to limit PM-10 emissions to less than 100 tons per year to comply with 326 IAC 2-8 (FESOP).

#### 326 IAC 5-1 (Opacity Limitations)

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

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

All entire source State Rules cited in FESOP (F003-5869-00064), issued on December 9, 1996, continue to apply to the existing emission units of this source.

### **State Rule Applicability - Individual Facilities**

#### 326 IAC 6-3-2 (Process Operations)

- (a) The particulate matter (PM) emissions from the new reverberatory furnace, identified as F14, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.
- (b) The PM emissions from the new melt furnace, identified as M4, shall not exceed the allowable emission rate of 4.76 pounds per hour, based on a process weight rate of 2,500 pounds per hour.
- (c) The PM emissions from each of the twelve (12) existing reverberatory furnaces, identified as F4 - F6, F11, F12, F16 - F18, F20 - F23, shall not exceed the allowable emission rate of 2.22 pounds per hour, based on a process weight rate of 800 pounds per hour for each furnace.
- (d) The PM emissions from the one (1) existing hearth furnace, identified as F13, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.
- (e) The PM emissions from the one (1) existing melt furnace, identified as M1, shall not exceed the allowable emission rate of 2.22 pounds per hour, based on a process weight rate of 800 pounds per hour.
- (f) The PM emissions from each of the crucible furnaces identified as C1a through C48a shall not exceed the allowable emission rate of 0.88 pounds per hour, based on a process weight rate of 200 pounds per hour for each furnace. The PM emissions from each of the crucible furnaces identified as C1b through C11b shall not exceed the allowable emission rate of 1.4 pounds per hour, based on a process weight rate of 400 pounds per hour for each furnace. The PM emissions from each of the crucible furnaces identified as C1c and C2c shall not exceed the allowable emission rate of 1.8 pounds per hour, based on a process weight rate of 600 pounds per hour for each furnace.
- (g) Pursuant to F003-5869-00064, issued on December 9, 1996, the PM emissions from the shot blast operation shall not exceed the allowable emission rate of 0.551 pound per hour, based on a process weight rate of 100 pounds per hour. The baghouse shall be in operation at all times that the shot blast is in operation to comply with this limit.

The above limits were calculated using the following:

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

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

Note: The 326 IAC 6-3 allowable PM emissions listed in the original FESOP for the existing reverberatory, melt and hearth furnaces were incorrectly based on the holding capacity of the furnaces, not the maximum melt rates, and were truncated to comply with 326 IAC 2-8 (FESOP). The allowable PM limits listed in the original FESOP for the crucible furnaces was for all the furnaces together and was also truncated to comply with 326 IAC 2-8 (FESOP). Since the applicability of 326 IAC 2-7 (Part 70 Permit Program) is based on PM-10 emissions, not PM emissions, limits on PM emissions to comply with 326 IAC 2-8 are not necessary. The limits for all the furnaces have been re-calculated using the maximum melt rates of each furnace as the process weight rates. However, these limits, when converted to tons per year based on 8,760 hours per year, result in allowable PM emissions that could potentially exceed 100 tons per year, which would make the requirements of 326 IAC 2-2 (PSD) applicable. Therefore, an additional pound per hour PM emission limit for each furnace has been added to the FESOP to ensure that PM emissions from all the furnaces at this source do not exceed 91.8 tons per year for a source-wide limit of less than 100 tons per year so that the requirements of 326 IAC 2-2 (PSD) do not apply to this source.

All individual facilities State Rules cited in FESOP (F003-5869-00064), issued on December 9, 1996, continue to apply to the existing emission units of this source.

### **Compliance Requirements**

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

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

1. The reverberatory, melt, and hearth furnaces have applicable compliance monitoring conditions as specified below:

- (a) Visible emissions notations of the furnace stack exhausts shall be performed once per shift 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.

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

2. The crucible furnaces have applicable compliance monitoring conditions as specified below:

- (a) Visible emissions notations of the crucible furnace stack exhausts shall be performed once per shift 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.

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

3. The natural gas combustion units have applicable compliance monitoring conditions as specified below:

- (a) Quarterly reports shall be submitted to IDEM, OAM including the amount of natural gas combusted at the source.

These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).

4. The evaporator has applicable compliance monitoring conditions as specified below:

- (a) Quarterly reports shall be submitted to IDEM, OAM including the amount of oil charged to the evaporator minus the oil disposed of as waste.

These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).

5. The shot blasting operation has applicable compliance monitoring conditions as specified

below:

- (a) Visible emissions notations of the shot blasting operation stack exhaust shall be performed once per shift 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 each of the baghouses controlling the two (2) shot blasting systems, at least once per shift when the shot blasting systems are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across each of the baghouses shall be maintained within the range of 1.0 to 8.0 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.

These monitoring conditions are necessary because the baghouses for the shot blasting operation must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (Part 70).

### **Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) 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) Part 70 Application Form GSD-08.

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.

### **Changes Proposed**

The following changes have been made to the Federally Enforceable State Operating Permit (F003-5869-00064) :

1. Sections A.1 and A.2 have been revised to indicate the new company name, the new responsible official and to include the new emission units and to delete the emission units that have been removed from the source as follows (additions in bold, deletions in strikeout):

## **SECTION A SOURCE SUMMARY**

**This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or**

**inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.**

**A.1 General Information [326 IAC 2-8-3(b)]**

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The Permittee owns and operates a **stationary** aluminum foundry.

~~Responsible Official: Bud Sawyer, Senior Vice-President of Operations~~

**Authorized Individual: Frank Pohlmann, President and CEO**

Source Address: 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803

Mailing Address: 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803

**Phone Number: 219-426-8081**

SIC Code: 3361

County Location: Allen

County Status: Attainment for all criteria pollutants

Source Status: ~~Synthetic Minor Source, FESOP Program~~

**Federally Enforceable State Operating Permit (FESOP)**

**Minor Source, under PSD Rules**

**A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]**

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This stationary source consists of the following emission units and pollution control devices:

- (a) ~~twenty (20)~~ **twelve (12)** natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F34 - F6, F811 - F12, **F16 - F18**, and F4420 - F2423. **Furnaces F4 - F6, F16 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;**
- (b) **one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;**
- (~~b~~)**(c)** One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.01 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, **identified as F13;**
- (~~e~~)**(d)** ~~Three (3)~~ **One (1) electric** melt furnaces, each with a maximum melt capacity of 800 pounds per hour, **identified as M1;**
- (e) **One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4;**
- (~~d~~)**(f)** ~~forty-five (45)~~ **forty-eight (48)** natural gas-fired crucibles ~~furnaces~~, each with a maximum melt capacity of 200 pounds per hour, **and each with a maximum heat input capacity of 0.5 MMBtu per hour**, referred to as C1a - C4548a;
- (g) **eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b;**
- (h) **two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2c;**

- (e)(i) two (2) shot blast systems, with emissions controlled by two baghouses;
- (f)(j) one (1) evaporator, referred to as EV1;
- (g)(k) four (4) 200 hp, natural gas-fired boilers, with maximum heat input capacities of 8.4, 5.6, 2.5, and 6.7 million British thermal units per hour, referred to as B1, B2, B4, and B5 respectively;
- (h)(l) one (1) 100 hp, natural gas-oil fired boiler, with a maximum heat input capacity of 3.35 million British thermal units per hour, referred to as B3;
- (i)(m) one (1) natural gas-fired boiler, with a maximum heat input capacity of 1.25 million British thermal units per hour, referred to as B6.

2. The following condition has been added to section A of the FESOP.

#### **A.5 Prior Permit Conditions**

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- (a) **This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits.**
- (b) **If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAM, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued.**

3. Condition C.1 of the FESOP has been revised to clarify that the overall source limit of all regulated pollutants, including PM, to less than 100 tons per year not only satisfies the requirements of 326 IAC 2-8, but also makes the requirements of 326 IAC 2-2 (PSD) not applicable. The revised condition reads as follows:

#### **C.1 Overall Source Limit [326 IAC 2-8]**

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~~Pursuant to 326 IAC 2-8, emissions of any regulated pollutant from the entire source shall not exceed 99 tons per 365 day period. Emissions of hazardous air pollutants (HAPs) from the entire source shall not exceed 9 tons of any individual HAP per 365 day period or 24 tons of any combination of HAPs per 365 day period. Emissions shall include those from all emission points at the source including those that are insignificant as defined in 326 IAC 2-7-1(20). The source shall be allowed to add insignificant activities not already listed in this permit, as long as the total emissions from the source do not exceed the above specified limits. In the event that any condition or combination of conditions in Section D of this permit differs from the above, the most restrictive limit will prevail.~~

**The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.**

**(a) Pursuant to 326 IAC 2-8:**

- (1) The potential to emit any regulated pollutant from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;**

- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and**
        - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.**
      - (b) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.**
      - (c) Section D of this permit contains independently enforceable provisions to satisfy this requirement.**
  - 4. Section D.1 has been revised to include the correct equipment list and to remove the metal throughput limits since they are no longer necessary due to the revised PM10 and PM emission factors for the reverberatory and melt furnaces which make source-wide potential PM10 and PM emissions less than 100 tons per year. Also, since the allowable pound per hour PM emission limits from the furnaces at this source pursuant to 326 IAC 6-3-2 can exceed 100 tons per year based on 8,760 hours of operation per year, an additional pound per hour PM emission limit for each furnace has been added in a new condition D.1.1a to ensure that PM emissions from all the furnaces at this source do not exceed 91.8 tons per year for a source-wide limit of less than 100 tons per year so that the requirements of 326 IAC 2-2 (PSD) do not apply to this source. The revised section D.1 now reads as follows (additions in bold, deletions in ~~strikeout~~):

**SECTION D.1**

**FACILITY OPERATION CONDITIONS**



**Facility Description [326 IAC 2-8-4(10)]:**

- (a) ~~twenty (20)~~ **twelve (12)** natural gas-fired reverberatory furnaces, each with a maximum melt capacity of 800 pounds per hour, referred to as F34 - F6, F811 - F12, **F16 - F18**, and ~~F4420 - F2423~~. **Furnaces F4 - F6, F16 - F18, and F22 each have a maximum heat input capacity of 2.4 million British thermal units (MMBtu) per hour. Furnaces F11 - F12 and F20 - F21 each have a maximum heat input capacity of 3.1 MMBtu per hour. Furnace F23 has a maximum heat input capacity of 3.0 MMBtu per hour;**
- (b) **one (1) natural gas-fired reverberatory furnace, with a maximum heat input capacity of 4.6 MMBtu per hour, and a maximum melt capacity of 2,000 pounds per hour, identified as F14;**
- ~~(b)~~(c) One (1) dry hearth furnace, fueled by natural gas only, with a heat input capacity of 5.01 million British thermal units per hour, and a charging capacity of 2000 pounds per hour, **identified as F13;**
- (d) ~~Three (3)~~ **One (1) electric** melt furnaces, each with a maximum melt capacity of 800 pounds per hour, **identified as M1;**
- (e) **One (1) natural gas-fired melt furnace, with a maximum melt capacity of 2,500 pounds per hour, and a maximum heat input capacity of 5.5 MMBtu per hour, identified as M4;**

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

**Emissions Limitations and Standards [326 IAC 2-8-4(1)] ~~[326 IAC 6-3]~~**

~~D.1.1 Particulate Matter less than ten microns (PM10)~~

~~The input metal to the reverberatory furnaces, melting furnaces, and the hearth furnaces shall be limited to 3,910 tons per month. The PM10 emissions from these furnaces shall not exceed 2.6 pounds per ton of metal. The combination of both of these limits is equivalent to PM10 emissions of 19.39 tons per month from the reverberatory, melting, and hearth furnaces, which is necessary in order to limit the PM10 emissions from the entire source to 8.25 tons per month. Compliance with this condition is necessary to render the requirements of 326 IAC 2-7 not applicable.~~

**D.1.21 Particulate Matter (PM) [326 IAC 6-3]**

~~The particulate matter emissions from the reverberatory, melting, and hearth furnaces shall not exceed the allowable particulate matter (PM) emission rate of 32.09 pounds per hour and 0.004 pounds per ton of aluminum throughput.~~

- (a) **Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the twelve (12) reverberatory furnaces, identified as F4 - F6, F11, F12, F16 - F18, F20 - F23, shall not exceed the allowable emission rate of 2.22 pounds per hour, based on a process weight rate of 800 pounds per hour for each furnace.**
- (b) **Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) reverberatory furnace, identified as F14, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.**

- (c) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) melt furnace, identified as M1, shall not exceed the allowable emission rate of 2.22 pounds per hour, based on a process weight rate of 800 pounds per hour.
- (d) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) melt furnace, identified as M4, shall not exceed the allowable emission rate of 4.76 pounds per hour, based on a process weight rate of 2,500 pounds per hour.
- (e) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the one (1) hearth furnace, identified as F13, shall not exceed the allowable emission rate of 4.1 pounds per hour, based on a process weight rate of 2,000 pounds per hour.

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

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

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

**D.1.1a Particulate Matter (PM) [326 IAC 2-2]**

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- (a) The PM emissions from each of the twelve (12) reverberatory furnaces, identified as F4 - F6, F11, F12, F16 - F18, F20 - F23, shall be limited to 0.35 pounds per hour (18.4 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (b) The PM emissions from the one (1) reverberatory furnace, identified as F14, shall be limited to 0.63 pounds per hour (2.76 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (c) The PM emissions from the one (1) melt furnace, identified as M1, shall be limited to 0.35 pounds per hour (1.53 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (d) The PM emissions from the one (1) melt furnace, identified as M4, shall be limited to 0.71 pounds per hour (3.11 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (e) The PM emissions from the one (1) hearth furnace, identified as F13, shall be limited to 0.63 pounds per hour (2.76 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

Since the pound per hour PM emission limits to ensure the requirements of 326 IAC 2-2 (PSD) do not apply are less than the pound per hour PM emission limits pursuant to 326 IAC 6-3, these limits will also satisfy the requirements of 326 IAC 6-3-2.

**D.1.2 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 the reverberatory furnaces, dry hearth furnaces, and melt furnaces.

**Testing Requirements [326 IAC 2-8-4(3)] Compliance Determination Requirements**

**D.1.3 ~~Particulate Matter less than ten microns (PM10) and PM Testing Requirements [326 IAC 2-8-5(a)(1), (4)]~~**[326 IAC 2-1.1-11]****

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During the period between 24 months and 36 months after issuance of this permit, the Permittee shall perform PM10 and PM testing on a representative reverberatory furnace utilizing methods per 40 CFR Part 60 Appendix A, Method 5 **or 17 for PM, and 40 CFR Part 51, Appendix M, Methods 201 or 201a and 202 for PM10, 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. **Testing shall be conducted in accordance with Section C- Performance Testing.**

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

~~D.1.4 Preventive Maintenance [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Condition B.13 of this permit, is required for the reverberatory furnaces, dry hearth furnaces, and melt furnaces.~~

**D.1.54 Visible Emissions Notations**

---

~~Visible emission notations of the furnace stack exhausts shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 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 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.~~

- (a) **Visible emission notations of the furnace stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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.**

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

~~D.1.6 Quarterly Reporting~~

---

~~That a quarterly summary to document compliance with operation condition D.1.1 shall be submitted to the address listed in Section C-General Reporting Requirements, using the enclosed forms or their equivalent, within thirty (30) days after the end of the quarter being reported.~~

5. Section D.2 has been revised to include the correct equipment list and to remove the metal

throughput limits since they are no longer necessary due to the revised PM10 and PM emission factors for the reverberatory and melt furnaces which make source-wide potential PM10 and PM emissions less than 100 tons per year. Also, since the allowable pound per hour PM emission limits from the furnaces at this source pursuant to 326 IAC 6-3-2 can exceed 100 tons per year based on 8,760 hours of operation per year, an additional pound per hour PM emission limit for each furnace has been added in a new condition D.2.1a to ensure that PM emissions from all the furnaces at this source do not exceed 91.8 tons per year for a source-wide limit of less than 100 tons per year so that the requirements of 326 IAC 2-2 (PSD) do not apply to this source. The revised section D.2 now reads as follows (additions in bold, deletions in strikeout):

## SECTION D.2 FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (f) ~~Forty-five (45)~~ **forty-eight (48)** natural gas-fired crucible furnaces, each with a maximum melt capacity of 200 pounds per hour, **and each with a maximum heat input capacity of 0.5 MMBtu per hour**, referred to as C1a - ~~C45~~**48a**;
- (g) **eleven (11) natural gas-fired crucible furnaces, each with a maximum melt capacity of 400 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1b - C11b;**
- (h) **two (2) natural gas-fired crucible furnaces, each with a maximum melt capacity of 600 pounds per hour, and each with a maximum heat input capacity of 1.0 MMBtu per hour, identified as C1c and C2c;**

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

### Emissions Limitations and Standards [326 IAC 2-8-4(1)] ~~[326 IAC 6-3]~~

#### ~~D.2.1 Particulate Matter less than ten microns (PM10)~~

~~The input metal to the crucible furnaces shall be limited to 2,105 tons per month. The PM10 emissions from these furnaces shall not exceed 1.7 pounds per ton of metal and 5.59 pounds per hour. The combination of both of these limits is equivalent to PM10 emissions of 1.31 tons per month from the crucible furnaces, which is necessary in order to limit the PM10 emissions from the entire source to 8.25 tons per month. Compliance with this condition is necessary to render the requirements of 326 IAC 2-7 not applicable.~~

#### D.2.21 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3, the particulate matter emissions from the crucible furnaces shall not exceed the allowable particulate matter (PM) emission rate of 4.00 pounds per hour.

- (a) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1a through C48a shall not exceed the allowable emission rate of 0.88 pounds per hour, based on a process weight rate of 200 pounds per hour for each furnace.
- (b) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1b through C11b shall not exceed the allowable emission rate of 1.4 pounds per hour, based on a process weight rate of 400 pounds per hour for each furnace.

- (c) Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from each of the crucible furnaces identified as C1c and C2c shall not exceed the allowable emission rate of 1.8 pounds per hour, based on a process weight rate of 600 pounds per hour for each furnace.

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

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

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

#### **D.2.1a Particulate Matter (PM) [326 IAC 2-2]**

---

- (a) The PM emissions from each of the crucible furnaces identified as C1a through C48a shall be limited to 0.19 pounds per hour (39.95 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (b) The PM emissions from each of the crucible furnaces identified as C1b through C11b shall be limited to 0.38 pounds per hour (18.31 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.
- (c) The PM emissions from each of the crucible furnaces identified as C1c and C2c shall be limited to 0.57 pounds per hour (4.99 tons per year) to ensure the requirements of 326 IAC 2-2 (PSD) do not apply.

Since the pound per hour PM emission limits to ensure the requirements of 326 IAC 2-2 (PSD) do not apply are less than the pound per hour PM emission limits pursuant to 326 IAC 6-3, these limits will also satisfy the requirements of 326 IAC 6-3-2.

#### **D.2.2 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 the crucible furnaces.

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

##### ~~D.2.3 Preventive Maintenance [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Condition B.13 of this permit, is required for the crucible furnaces.~~

#### **D.2.43 Visible Emissions Notations**

---

~~Visible emission notations of the furnace stack exhausts shall be performed once per working shift. A trained employee will record whether emission are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 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 the 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 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 abnormal emission is observed.~~

- (a) Visible emission notations of the furnace stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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.

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

**~~D.2.5~~ Quarterly Reporting**

~~That a quarterly summary to document compliance with operation condition D.2.1 shall be submitted to the address listed in Section C-General Reporting Requirements, using the enclosed forms or their equivalent, within thirty (30) days after the end of the quarter being reported.~~

6. Section D.3 has been revised to include the new pressure drop range for the baghouses controlling the shot blasting systems as follows (additions in bold, deletions in strikethrough):

**SECTION D.3 FACILITY OPERATION CONDITIONS**

**Facility Description [326 IAC 2-8-4(10)]:**

- (i) Two (2) shot blasting systems, with two (2) baghouses for particulate control.

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

**Emissions Limitations and Standards [326 IAC 2-8-4(1)] [~~326 IAC 6-3~~]**

**D.3.1 Particulate Matter (PM) [326 IAC 6-3]**

~~That Pursuant to 326 IAC 6-3 (Process Operations), the baghouses shall operate at all times that the shot blasting systems are in operation and the particulate matter emissions from the shot blasting systems shall not exceed 0.551 pounds per hour, based on a process weight rate of 100 pounds per hour.~~

The above pounds per hour limitation was calculated with the following equation:

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

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

and

**P = process weight rate in tons per hour**

### **D.3.2 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 the shot blasting systems and their control devices.**

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

#### **D.3.23 Pressure Readings Parametric Monitoring**

---

The Permittee shall ~~take readings of record~~ the total static pressure drop across **each of** the baghouses ~~controlling this operation~~ **used in conjunction with the shot blasting systems**, at least once per working shift when the shot blasting systems ~~is are~~ **are** in operation **when venting to the atmosphere**. Unless operated under conditions for which the ~~Preventive Maintenance Compliance Response~~ Plan specifies otherwise, the pressure drop across **each of** the baghouses shall be maintained within the range of 1.0 and ~~4.0~~ **8.0** inches of water or a range established during the latest stack test. The ~~Preventive Maintenance 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 ~~Condition C.9~~ **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.3.4 Baghouse Inspections**

---

**An inspection shall be performed each calendar quarter of all bags controlling the shot blasting systems when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.**

#### **D.3.35 Visible Emissions Notations**

---

~~Visible emission notations of the shot blast stack exhaust shall be performed once per working shift. A trained employee will record whether emission are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 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 the 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 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 abnormal emission is observed.~~

- (a) Visible emission notations of the shot blast stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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.3.46 Broken or Failed Bag Detection**

---

~~That~~ 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. **Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).**
- (b) ~~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.~~ **For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).**

~~D.3.5 Preventive Maintenance [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Condition B.13 of this permit, is required for the shot blasting systems.~~

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

~~D.3.6 Operational Parameters~~

~~That the Permittee shall maintain daily records at the stationary source of the following values:~~

- ~~(a) Inlet and outlet differential static pressure; and~~
- ~~(b) Visible observations.~~

**D.3.7 Record Keeping Requirements**

---

That the Permittee shall maintain records of baghouse preventive maintenance, parametric monitoring data, visible emissions observations, and all corrective actions taken and the outcome from each. These records shall be made available upon request of the Office of Air Management (OAM) staff.

- (a) **To document compliance with Condition D.3.5, the Permittee shall maintain records of visible emission notations of the shot blast stack exhaust once per shift.**
- (b) **To document compliance with Condition D.3.3, 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.3.4, the Permittee shall maintain records of the results of the inspections required under Condition D.3.4 and the dates the vents are redirected.**
- (d) **All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.**
7. The quarterly report form on page 32 of 35 of the FESOP, for the metal throughput to the reverberatory, melt and hearth furnaces, has been removed since this limit is no longer necessary.
8. The quarterly report form on page 33 of 35 of the FESOP, for the metal throughput to the crucible furnaces, has been removed since this limit is no longer necessary.

**Conclusion**

The operation of this aluminum foundry shall be subject to the conditions of the attached proposed **Significant Permit Revision to a FESOP No. 003-11697-00064.**

**Appendix A: Secondary Metal Production  
Aluminum  
Potential Emissions from New Equipment**

**Company Name:** KJS Zollner Division  
**Address City IN Zip:** 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
**Significant Permit Revision:** 003-11697  
**Pit ID:** 003-00064  
**Reviewer:** Trish Earls/EVP  
**Date:** December 21, 1999

SCC# 3-04-001-03 Smelting Furnace/Reverberatory Reverberatory Furnace #14 and Melt Furnace #4						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	4500	2000	2.25			
	<b>PM **</b> lbs/ton Produced	<b>PM10 **</b> lbs/ton Produced	<b>SOx</b> lbs/ton Produced	<b>NOx</b> lbs/ton Produced	<b>VOC *</b> lbs/ton Produced	<b>CO</b> lbs/tons Produced
	0.019	0.13	0	0	0	-
Potential Emissions lbs/hr	0.04	0.29	0.0	0.0	0.0	-
Potential Emissions lbs/day	1.03	7.02	0.0	0.0	0.0	-
Potential Emissions tons/year	0.19	1.28	0.0	0.0	0.0	-
SCC# 3-04-001-04 Fluxing/Chlorine						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Flux	0	2000	0			
	<b>PM *</b> lbs/ton Chlorine	<b>PM10 *</b> lbs/ton Chlorine	<b>SOx</b> lbs/ton Chlorine	<b>NOx</b> lbs/ton Chlorine	<b>VOC</b> lbs/ton Chlorine	<b>CO</b> lbs/tons Chlorine
	1000	532	0.00	0.00	0.00	-
Potential Emissions lbs/hr	0.0	0.0	0.0	0.0	0.0	-
Potential Emissions lbs/day	0.0	0.0	0.0	0.0	0.0	-
Potential Emissions tons/year	0.0	0.0	0.0	0.0	0.0	0
SCC# 3-04-001-14 Pouring/Casting						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	10700	2000	5.35			
	<b>PM</b> lbs/ton metal charged	<b>PM10</b> lbs/ton metal charged	<b>SOx *</b> lbs/ton metal charged	<b>NOx *</b> lbs/ton metal charged	<b>VOC *</b> lbs/ton metal charged	<b>CO</b> lbs/tons metal charged
	-	-	0.02	0.01	0.14	-
Potential Emissions lbs/hr	0	0	0.11	0.05	0.75	-
Potential Emissions lbs/day	0	0	2.57	1.28	17.98	-
Potential Emissions tons/year	0	0	0.47	0.23	3.28	-
SCC# 3-04-001-02 Smelting Furnace, Crucible Sixteen (16) Crucible Furnaces						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	6200	2000	3.1			
	<b>PM *</b> lbs/ton metal produced	<b>PM10 *</b> lbs/ton metal produced	<b>SOx</b> lbs/ton metal produced	<b>NOx</b> lbs/ton metal produced	<b>VOC</b> lbs/ton metal produced	<b>CO</b> lbs/tons metal produced
	1.9	1.7	0.00	0.00	0.00	-
Potential Emissions lbs/hr	5.89	5.27	0	0.000	0.000	-
Potential Emissions lbs/day	141.36	126.48	0	0.000	0.000	-
Potential Emissions tons/year	25.80	23.08	0	0.000	0.000	-

\* Note: Emission factor is from FIRE version 6.01.

\*\*Note: PM and PM-10 emission factors for reverberatory and melt furnaces were based on approved stack test results from a stack test performed January 18, 2000 on furnace #14. PM-10 includes filterable and condensable particulate matter.

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

**Company Name:** KUS Zollner Division  
**Address City IN Zip:** 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
**Significant Permit Revision:** 003-11697  
**Plt ID:** 003-00064  
**Reviewer:** Trish Earls/EVP  
**Date:** December 21, 1999

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

24.6

215.5

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.20	0.82	0.06	10.77	0.59	9.05

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

**Methodology**

All emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu  
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.3E-04	1.3E-04	8.1E-03	1.9E-01	3.7E-04

Emission Factor in lb/MMcf	HAPs - Metals					Total
	Lead	Cadmium	Chromium	Manganese	Nickel	
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	5.4E-05	1.2E-04	1.5E-04	4.1E-05	2.3E-04	<b>0.20</b>

Methodology is the same as listed above.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Secondary Metal Production**  
**Aluminum**  
**Source Emissions From Existing Equipment**

**Company Name:** KUS Zollner Division  
**Address City IN Zip:** 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
**Significant Permit Revision:** 003-11697  
**Pit ID:** 003-00064  
**Reviewer:** Trish Earls/EVP  
**Date:** December 21, 1999

SCC# 3-04-001-03 Smelting Furnace/Reverberatory						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	Maximum: 11200	2000	5.6			
	<b>PM **</b> lbs/ton Produced 0.019	<b>PM10 **</b> lbs/ton Produced 0.13	<b>SOx</b> lbs/ton Produced 0	<b>NOx</b> lbs/ton Produced 0	<b>VOC *</b> lbs/ton Produced 0	<b>CO</b> lbs/tons Produced -
Potential Emissions lbs/hr	0.11	0.73	0.0	0.0	0.0	-
Potential Emissions lbs/day	2.55	17.47	0.0	0.0	0.0	-
Potential Emissions tons/year	0.47	3.19	0.0	0.0	0.0	-
SCC# 3-04-001-14 Pouring/Casting						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	Maximum: 20200	2000	10.1			
	<b>PM</b> lbs/ton metal charged -	<b>PM10</b> lbs/ton metal charged -	<b>SOx *</b> lbs/ton metal charged 0.02	<b>NOx *</b> lbs/ton metal charged 0.01	<b>VOC *</b> lbs/ton metal charged 0.14	<b>CO</b> lbs/tons metal charged -
Potential Emissions lbs/hr	0	0	0.20	0.10	1.41	-
Potential Emissions lbs/day	0	0	4.85	2.42	33.94	-
Potential Emissions tons/year	0	0	0.88	0.44	6.19	-
SCC# 3-04-001-02 Smelting Furnace, Crucible						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	Maximum: 9000	2000	4.5			
	<b>PM *</b> lbs/ton metal produced 1.9	<b>PM10 *</b> lbs/ton metal produced 1.7	<b>SOx</b> lbs/ton metal produced 0.00	<b>NOx</b> lbs/ton metal produced 0.00	<b>VOC</b> lbs/ton metal produced 0.00	<b>CO</b> lbs/tons metal produced -
Potential Emissions lbs/hr	8.55	7.65	0	0.000	0.000	-
Potential Emissions lbs/day	205.2	183.6	0	0.000	0.000	-
Potential Emissions tons/year	37.45	33.51	0	0.000	0.000	-

\* Note: Emission factor is from FIRE version 6.01.

\*\*Note: PM and PM-10 emission factors for reverberatory and melt furnaces were based on approved stack test results from a stack test performed January 18, 2000 on furnace #14. PM-10 includes filterable and condensable particulate matter.

Appendix A: Secondary Metal Production

Aluminum  
Source Emissions After Modification

Company Name: KUS Zollner Division  
 Address City IN Zip: 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
 Significant Permit Revision: 003-11697  
 PIT ID: 003-00064  
 Reviewer: Trish Earls/EVP  
 Date: December 21, 1999

SCC# 3-04-001-03 Smelting Furnace/Reverberatory						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	Maximum: 15700	2000	7.85			
	PM ** lbs/ton Produced 0.019	PM10 ** lbs/ton Produced 0.13	SOx lbs/ton Produced 0	NOx lbs/ton Produced 0	VOC * lbs/ton Produced 0	CO lbs/tons Produced -
Potential Emissions lbs/hr	0.15	1.02	0.0	0.0	0.0	-
Potential Emissions lbs/day	3.58	24.49	0.0	0.0	0.0	-
Potential Emissions tons/year	0.65	4.47	0.0	0.0	0.0	-
SCC# 3-04-001-14 Pouring/Casting						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	Maximum: 30900	2000	15.45			
	PM lbs/ton metal charged -	PM10 lbs/ton metal charged -	SOx * lbs/ton metal charged 0.02	NOx * lbs/ton metal charged 0.01	VOC * lbs/ton metal charged 0.14	CO lbs/tons metal charged -
Potential Emissions lbs/hr	0	0	0.31	0.15	2.16	-
Potential Emissions lbs/day	0	0	7.42	3.71	51.91	-
Potential Emissions tons/year	0	0	1.35	0.68	9.47	-
SCC# 3-04-001-02 Smelting Furnace, Crucible						
TYPE OF MATERIAL	Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum	Maximum: 15200	2000	7.6			
	PM * lbs/ton metal produced 1.9	PM10 * lbs/ton metal produced 1.7	SOx lbs/ton metal produced 0.00	NOx lbs/ton metal produced 0.00	VOC lbs/ton metal produced 0.00	CO lbs/tons metal produced -
Potential Emissions lbs/hr	14.44	12.92	0	0.000	0.000	-
Potential Emissions lbs/day	346.56	310.08	0	0.000	0.000	-
Potential Emissions tons/year	63.25	56.59	0	0.000	0.000	-

\* Note: Emission factor is from FIRE version 6.01.

\*\*Note: PM and PM-10 emission factors for reverberatory and melt furnaces were based on approved stack test results from a stack test performed January 18, 2000 on furnace #14. PM-10 includes filterable and condensable particulate matter.

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

**Company Name:** KUS Zollner Division  
**Address City IN Zip:** 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
**Significant Permit Revision:** 003-11697  
**Pit ID:** 003-00064  
**Reviewer:** Trish Earls/EVP  
**Date:** December 21, 1999

Emission Unit ID	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Emission Unit ID	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
F4	2.40	21.0	M1	4.00	35.0
F5	2.40	21.0	M4	5.50	48.2
F11	3.10	27.2	C1a-C48a*	24.00	210.2
F12	3.10	27.2	C1b-C11b*	11.00	96.4
F17	2.40	21.0	C1c-C2c*	2.00	17.5
F18	2.40	21.0	B1	8.40	73.6
F20	3.10	27.2	B2	5.60	49.1
F21	3.10	27.2	B3	3.35	29.3
F22	2.40	21.0	B4	2.50	21.9
F23	3.00	26.3	B5	6.70	58.7
F13	5.10	44.7	B6	1.25	11.0
F14	4.60	40.3	TOTAL	111.40	975.9

\* Heat input capacities for C1a-C48a are 0.5 MMBtu/hr each, heat input capacities for C1b-C11b and C1c-C2c are 1.0 MMBtu/hr each.

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
F4 Potential Emissions in tons/yr	0.02	0.08	0.01	1.05	0.06	0.88
F5 Potential Emissions in tons/yr	0.02	0.08	0.01	1.05	0.06	0.88
F11 Potential Emissions in tons/yr	0.03	0.10	0.01	1.36	0.07	1.14
F12 Potential Emissions in tons/yr	0.03	0.10	0.01	1.36	0.07	1.14
F17 Potential Emissions in tons/yr	0.02	0.08	0.01	1.05	0.06	0.88
F18 Potential Emissions in tons/yr	0.02	0.08	0.01	1.05	0.06	0.88
F20 Potential Emissions in tons/yr	0.03	0.10	0.01	1.36	0.07	1.14
F21 Potential Emissions in tons/yr	0.03	0.10	0.01	1.36	0.07	1.14
F22 Potential Emissions in tons/yr	0.02	0.08	0.01	1.05	0.06	0.88
F23 Potential Emissions in tons/yr	0.02	0.10	0.01	1.31	0.07	1.10
F13 Potential Emissions in tons/yr	0.04	0.17	0.01	2.23	0.12	1.88
F14 Potential Emissions in tons/yr	0.04	0.15	0.01	2.01	0.11	1.69
M1 Potential Emissions in tons/yr	0.03	0.13	0.01	1.75	0.10	1.47
M4 Potential Emissions in tons/yr	0.05	0.18	0.01	2.41	0.13	2.02
C1a-C48a Potential Emissions in tons/yr	0.20	0.80	0.06	10.51	0.58	8.83
C1b-C11b Potential Emissions in tons/yr	0.09	0.37	0.03	4.82	0.26	4.05
C1c-C2c Potential Emissions in tons/yr	0.02	0.07	0.01	0.88	0.05	0.74
B1 Potential Emissions in tons/yr	0.07	0.28	0.02	3.68	0.20	3.09
B2 Potential Emissions in tons/yr	0.05	0.19	0.01	2.45	0.13	2.06
B3 Potential Emissions in tons/yr	0.03	0.11	0.01	1.47	0.08	1.23
B4 Potential Emissions in tons/yr	0.02	0.08	0.01	1.10	0.06	0.92
B5 Potential Emissions in tons/yr	0.06	0.22	0.02	2.93	0.16	2.47
B6 Potential Emissions in tons/yr	0.01	0.04	0.00	0.55	0.03	0.46
<b>TOTAL</b>	<b>0.93</b>	<b>3.71</b>	<b>0.29</b>	<b>48.79</b>	<b>2.68</b>	<b>40.99</b>

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

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

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

**Appendix A: Emission Calculations  
Source Emissions Summary After Modification**

**Company Name:** KUS Zollner Division  
**Address City IN Zip:** 2425 South Coliseum Blvd., Fort Wayne, Indiana 46803  
**Significant Permit Revision:** 003-11697  
**Pit ID:** 003-00064  
**Reviewer:** Trish Earls/EVP  
**Date:** December 21, 1999

**Total Potential To Emit (tons/year)**

**Emissions Generating Activity**

Pollutant	Existing Furnace Emissions	Existing Pouring/Casting Emissions	New Furnace Emissions	New Pouring/Casting Emissions	Natural Gas Combustion*	Evaporator and Surface Coating**	Shotblasting & Welding**	TOTAL
PM	37.92	0.00	25.99	0.00	0.93	0.00	9.12	73.96
PM10	36.70	0.00	24.36	0.00	3.71	0.00	9.12	73.89
SO2	0.00	0.88	0.00	0.47	0.29	0.00	0.00	1.64
NOx	0.00	0.44	0.00	0.23	48.79	0.00	0.00	49.46
VOC	0.00	6.19	0.00	3.28	2.68	90.62	0.00	102.77
CO	0.00	0.00	0.00	0.00	40.99	0.00	0.00	40.99
total HAPs***	7.90	0.00	0.00	0.00	0.00	0.07	0.00	7.97
worst case single HAP***	6.77	0.00	0.00	0.00	0.00	0.07	0.00	6.77

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

For the purposes of determining Title V applicability, PM10 (not PM) is the regulated pollutant in consideration.

\* Natural Gas Combustion emissions are based on the most recent AP-42 emission factors dated March, 1998. These emissions include combustion emissions from existing and new furnaces.

\*\* Emissions from evaporator, surface coating, shotblasting and welding are from FESOP No. F003-5869-00064, issued to the source on December 9, 1996.

\*\*\* HAP emissions from furnaces are from FESOP No. F003-5869-00064, issued to the source on December 9, 1996.

**Limited Potential To Emit (tons/year)**

**Emissions Generating Activity**

Pollutant	Existing Furnace Emissions	Existing Pouring/Casting Emissions	New Furnace Emissions	New Pouring/Casting Emissions	Natural Gas Combustion*	Evaporator and Surface Coating**	Shotblasting & Welding**	TOTAL
PM	37.92	0.00	25.99	0.00	0.93	0.00	6.97	71.81
PM10	36.70	0.00	24.36	0.00	3.71	0.00	6.97	71.74
SO2	0.00	0.88	0.00	0.47	0.29	0.00	0.00	1.64
NOx	0.00	0.44	0.00	0.23	48.79	0.00	0.00	49.46
VOC	0.00	6.19	0.00	3.28	2.68	24.62	0.00	36.77
CO	0.00	0.00	0.00	0.00	40.99	0.00	0.00	40.99
total HAPs***	7.90	0.00	0.00	0.00	0.00	0.07	0.00	7.97
worst case single HAP***	6.77	0.00	0.00	0.00	0.00	0.07	0.00	6.77

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

For the purposes of determining Title V applicability, PM10 (not PM) is the regulated pollutant in consideration.

\* Natural Gas Combustion emissions are based on the most recent AP-42 emission factors dated March, 1998. These emissions include combustion emissions from existing and new furnaces.

\*\* Emissions from evaporator, surface coating, shotblasting and welding are from FESOP No. F003-5869-00064, issued to the source on December 9, 1996.

\*\*\* HAP emissions from furnaces are from FESOP No. F003-5869-00064, issued to the source on December 9, 1996.

**Emissions from a single Reverberatory furnace and a single crucible furnace to show emissions are at insignificant levels**

Pollutant	Reverberatory Furnace M#	Crucible Furnace C1c	Insignificant Activity Threshold
PM (lb/hr)	0.03	0.57	5 lb/hr
PM10 (lb/hr)	0.20	0.52	5 lb/hr
SO2 (lb/hr)	0.03	0.01	5 lb/hr
NOx (lb/hr)	0.56	0.10	5 lb/hr
VOC (lb/hr)	0.21	0.05	3 lb/hr
CO (lb/day)	11.07	2.03	25 lb/day
total HAPs (tons/yr)	0.05	0.01	2.5 tons/yr
worst case single HAP (ton/yr)	0.04	0.01	1 ton/yr

These emissions represent emissions from the worst case reverberatory furnace and the worst case crucible furnace.

Furnace emissions include emissions from natural gas combustion, smelting, and pouring/casting.