

**CONSTRUCTION PERMIT and ENHANCED NEW SOURCE REVIEW  
OFFICE OF AIR MANAGEMENT**

**General Motors Corp. - GMPTG - Bedford  
105 GM Drive  
Bedford, Indiana 47421**

is hereby authorized to construct

One (1) reveratory furnace complex, known as complex #6, consisting of two (2) natural gas-fired reveratory furnaces exhausted to Stacks 6-1 through 6-6 (natural gas burner flue Stacks 6-1, 6-3 and 6-5 and charge well Stacks 6-2, 6-4 and 6-6) each rated at 18.0 million British thermal units per hour, capacity: 6.0 tons of aluminum per hour, total.

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

Construction Permit No.: CP 093-8868-00007	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

### **Construction Conditions**

#### General Construction Conditions

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

#### Effective Date of the Permit

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

#### First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
  - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
  - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
  - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
  - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees)
  - (e) The Permittee has submitted their Part 70 (T-093-5652-00007) application on April 1, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.
7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

## Operation Conditions

### General Operation Conditions

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

### Preventive Maintenance Plan

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

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

### Transfer of Permit

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

### Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
  - (a) Violation of any conditions of this permit.
  - (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

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

Malfunction Condition

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

Opacity Limitations

8. Pursuant to 326 IAC 5-1-2 ( Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:
- (a) Opacity shall not exceed an average of forty percent (40%), any one (1) six (6) minute averaging period as in determined 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.

9. Particulate Matter (PM) Limitation

That pursuant to 326 IAC 6-3-2(c) (Process Operations), the particulate matter emissions from the aluminum melting operations shall not exceed 13.6 pounds per hour.

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:

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

or

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

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

Fugitive Dust Emissions

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

Open Burning

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

Emergency Reduction Plans

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

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

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

within 180 calendar days from the issuance date of this permit.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

Annual Emission Reporting

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

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

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

Materials Melted

14. That the permittee shall not melt any post consumer materials at this source. Only in-house returns from this source and/or in-house returns from other sources where the composition of the purchased returns have at least the same quality of the source's own in-house returns shall be melted in the two (2) natural gas-fired reverberatory furnaces. The other sources' returns shall be specified and controlled contractually.

**MALFUNCTION REPORT**

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

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

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

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

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ?    Y        N

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

COMPANY: \_\_\_\_\_ General Motors Corp. - GMPTG - Bedford \_\_\_\_\_ PHONE NO. \_\_\_\_\_ 812 - 279 - 7308 \_\_\_\_\_

LOCATION: (CITY AND COUNTY) \_\_\_\_\_ Bedford / Lawrence \_\_\_\_\_

PERMIT NO. \_\_\_\_\_ 093-8868 \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ 093-00007 \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/ 19\_\_\_\_ \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

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

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

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

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

**326 IAC 1-6-1 Applicability of rule**

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

**326 IAC 1-2-39 "Malfunction" definition**

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

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

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

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## Indiana Department of Environmental Management Office of Air Management

### Technical Support Document (TSD) for New Construction and Operation and Enhanced New Source Review

#### Source Background and Description

**Source Name:** General Motors Corp. - GMPTG - Bedford  
**Source Location:** 105 GM Drive, Bedford, Indiana 47421  
**County:** Lawrence  
**Construction Permit No.:** CP 093-8868-00007  
**SIC Code:** 3363, 3365  
**Permit Reviewer:** Frank P. Castelli

The Office of Air Management (OAM) has reviewed an application from General Motors Corp. - GMPTG - Bedford relating to the construction and operation of a reverberatory furnace complex consisting of the following equipment:

One (1) reverberatory furnace complex, known as complex #6, consisting of two (2) natural gas-fired reverberatory furnaces exhausted to Stacks 6-1 through 6-6 each rated at 18.0 million British thermal units per hour, capacity: 3 tons of aluminum per hour, each.

The proposed construction represents a modification to an existing permitted source. The applicant has submitted a Part 70 Operating Permit application for this source and has requested that the proposed modification be processed as a New Source Review outside of the Part 70 permit. The new proposed equipment will be incorporated in the Part 70 permit application. The applicant also stated that the existing source is minor pursuant to 326 IAC 2-2 (PSD rules). Appendix C of the Part 70 operating permit application contains the "Negative Declaration of Existing Permits" which states that many of the existing construction and operating permits are for facilities that were either never constructed or have been permanently taken out of service. The PSD status of the existing source will be verified during the Part 70 operating permit review process.

The source has indicated in correspondence received October 19, 1998 and December 14, 1998 that if necessary it will not melt any post consumer materials in order to not be considered a secondary metal production plant and one of the twenty eight (28) major PSD source groups. The proposed permit is being written with a condition that the entire source will only melt internal returns from this source and internal returns from other sources. If final U.S. EPA guidance indicates that a percentage of the total materials melted can be post consumer materials, and still not be considered a secondary metal production plant, the applicant can apply for an amendment.

There are no other processes beyond the two (2) reverberatory furnaces affected by this modification.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
6-1	Furnace Flue	40.0	3.33	8,799	807
6-2	Charge Well	39.0	3.50	42,955	170
6-3	Furnace Flue	40.0	3.33	8,799	807
6-4	Charge Well	39.0	3.50	42,955	170
6-5	Furnace Flue	45.0	2.17	3,120	807
6-6	Charge Well	39.0	3.50	42,955	170

### Recommendation

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

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

An application for the purposes of this review was received on August 14, 1997, with additional information received on October 3, 1997, October 19, 1998 and December 14, 1998.

### Emissions Calculations

See page 1 of 1 of Appendix A (Emissions Calculation Spreadsheet) for detailed calculations of the emissions from the aluminum melting operations and the natural gas combustion.

The HAPs emissions are calculated as follows:

The maximum amount of flux added to the furnaces is 150 pounds per day. The applicant has estimated that a maximum of one (1) percent of the flux is not bound to the aluminum and will be emitted to the atmosphere. The flux will be powdered hexachloroethane. Therefore, the potential powdered hexachloroethane emissions are 547.5 pounds per year equivalent to 0.274 tons per year.

### Total Potential and Allowable Emissions

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

Pollutant	Allowable Emissions (tons/yr)	Potential Emissions (tons/yr)
Particulate Matter (PM)	59.7	57.3
Particulate Matter (PM <sub>10</sub> )	45.1	45.1
Sulfur Dioxide (SO <sub>2</sub> )	0.095	0.095
Volatile Organic Compounds (VOC)	0.442	0.442
Carbon Monoxide (CO)	5.52	5.52
Nitrogen Oxides (NO <sub>x</sub> )	22.1	22.1
Single Hazardous Air Pollutant (HAP)	0.274	0.274
Combination of HAPs	0.274	0.274

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

**County Attainment Status**

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<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. Lawrence County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Lawrence County has been classified as attainment or unclassifiable for the rest of the criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

**Source Status**

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

<b>Pollutant</b>	<b>Emissions (tons/yr)</b>
PM	237
PM <sub>10</sub>	226
SO <sub>2</sub>	0.700
VOC	3.00
CO	37.9
NO <sub>x</sub>	152

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories. This source was never permitted as a secondary metal production plant or any other of the 28 listed major PSD source categories.
- (b) These emissions were based on a letter dated October 2, 1997, which responded to the Notice of Deficiency #1 and Appendix C of the Part 70 permit application submitted by the applicant.

**Proposed Modification**

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

<b>Pollutant</b>	<b>PM (tons/yr)</b>	<b>PM<sub>10</sub> (tons/yr)</b>	<b>SO<sub>2</sub> (tons/yr)</b>	<b>VOC (tons/yr)</b>	<b>CO (tons/yr)</b>	<b>NO<sub>x</sub> (tons/yr)</b>
Proposed Modification	57.3	45.1	0.095	0.442	5.52	22.1
PSD Threshold Level	250	250	250	250	250	250

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

**Part 70 Permit Determination**

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-093-5652-00007) application on April 1, 1996. The equipment being reviewed under this permit shall be incorporated into the submitted Part 70 application.

### **Federal Rule Applicability**

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) 40 CFR Part 63 applicable to this facility.

### **State Rule Applicability**

#### 326 IAC 2-1-3.4 (New Source Toxic Control)

The potential HAPs emissions from this modification are less than major source levels of ten (10) tons per year for individual HAPs and twenty-five (25) tons per year for the combination of HAPs and therefore this rule does not apply.

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

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than one hundred (100) tons per year of PM<sub>10</sub> in Lawrence County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by July 1 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8) (Emission Statement Operating Year).

#### 326 IAC 5-1 (Visible Emissions Limitations)

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

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

#### 326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), visible emissions shall not cross the property line of the source at or near ground level.

### 326 IAC 6-3-2 (Particulate Emission Limitations)

The aluminum melting operations are subject to 326 IAC 6-3-2(c). The 326 IAC 6-3-2 equation is as follows:  $E = 4.10 P^{0.67}$ , where P equals process weight in tons per hour for process weights up to and including sixty thousand (60,000) pounds per hour and E equals the allowable emission rate in pounds per hour. Therefore, the aluminum melting operations with a process weight rate of 6.0 tons per hour has an allowable particulate emission rate of 13.6 pounds per hour (59.7 tons per year). This allowable emission rate is greater than the aforementioned potential particulate emission rate of 57.3 tons per year for the aluminum melting operations. Therefore these operations comply with this rule.

### Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

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

(b) The HAPs emissions are calculated as follows:

Maximum amount of flux added to the furnaces is 150 pounds per day. The applicant has estimated that a maximum of one (1) percent of the flux is not bound to the aluminum and will be emitted to the atmosphere. The flux will be powdered hexachloroethane. Therefore, the potential powdered hexachloroethane emissions are 547.5 pounds per year equivalent to 0.274 tons per year.

### Conclusion

The construction of this reveratory furnace complex #6 will be subject to the conditions of the attached proposed Construction Permit No. CP 093-8868-00007.

## Indiana Department of Environmental Management Office of Air Management

### Addendum to the Technical Support Document for New Construction and Operation and Enhanced New Source Review

**Source Name:** General Motors Corp. - GMPTG - Bedford  
**Source Location:** 105 GM Drive, Bedford, Indiana 47421  
**County:** Lawrence  
**Construction Permit No.:** CP 093-8868-00007  
**SIC Code:** 3363, 3365  
**Permit Reviewer:** Frank P. Castelli

On December 24, 1998, the Office of Air Management (OAM) had a notice published in the Times-Mail, Bedford, Indiana, stating that General Motors Corp. - GMPTG - Bedford, had applied for a construction permit to construct and operate a reverberatory furnace complex. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit 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.

On January 6, 1999, Kushal Som of US EPA Region V commented via telephone. A summary of the comments follows. Any changes in the permit language are indicated in **bold** and any deleted language appears as ~~strikeouts~~.

#### Comment 1:

- (a) As per the US EPA Guidance on aluminum die casting sources, issued on December 4, 1998, a source can melt in-house returns from other sources and not be considered a secondary metal production plant (one of the 28 major PSD source groups) if "the composition of the returns can be specified contractually." Therefore, please add the following wording to Operation Condition 15.

"The composition of any purchased returns should have at least the same quality of the source's own in-house returns. These returns must be specified and controlled contractually."

- (b) Also specify that this source is indeed an aluminum die casting source and as such the US EPA guidance is pertinent to this source.

#### Response 1:

This source is an aluminum die casting source. The US EPA Guidance issued on December 4, 1998 states that aluminum die casting sources should not normally be considered secondary metal production plants as long as only in-house returns and purchased returns from other sources are melted. The guidance goes on to state that the returns from other sources can be melted in a die casting source as long as the contents of the returns can be specified and controlled contractually.

Therefore, Operation Condition 15 (now Condition 14) has been revised as follows to require a contractual specification of the composition of the in-house returns from outside sources as follows:

Materials Melted

14. That the permittee shall not melt any post consumer materials at this source. Only in-house returns from this source and/or in-house returns from other sources **where the composition of the purchased returns have at least the same quality of the source's own in-house returns** shall be melted in the two (2) natural gas-fired reverberatory furnaces. **The other sources' returns shall be specified and controlled contractually.**

On January 14, 1999, William S. Schoonmaker, PE, of General Motors, commented on the proposed construction permit. The comments are as follows:

**Comment 1:**

Regarding the equipment description on the cover page of the permit and on page 1 of the TSD, we request that "3 tons of aluminum per hour, each" be replaced with "6 tons of aluminum per hour, combined.

**Response 1:**

The equipment list has been revised as follows to cite the total melt capacity of the reverberatory furnace complex and to clarify the purpose of each of the six (6) stacks:

One (1) reverberatory furnace complex, known as complex #6, consisting of two (2) natural gas-fired reverberatory furnaces exhausted to Stacks 6-1 through 6-6 (**natural gas burner flue Stacks 6-1, 6-3 and 6-5 and charge well Stacks 6-2, 6-4 and 6-6**) each rated at 18.0 million British thermal units per hour, capacity: ~~3~~ **6.0** tons of aluminum per hour, ~~each~~ **total**.

This change in wording does not affect any applicable rules or the PSD status of this modification. All emission calculations assumed the maximum six (6) ton per hour melt rate and therefore no additional changes are required.

**Comment 2:**

Regarding general operation condition number 7, we do not believe that performance testing is necessary to verify that particulate emissions from the furnace complex do not exceed the potential to emit specified in the TSD on page 4 of 6. The emissions calculated for this proposed modification, 59.7 tons/yr PM and 57.3 tons/yr PM<sub>10</sub>, were completed using grey iron emission factors for reverberatory furnaces, SCC 3-04-003-02. These factors are very conservative considering the purity of the feedstock used by GM compared to the dirty scrap iron feedstock commonly used by grey iron foundries. We therefore request that the performance testing requirement at condition 7 be deleted.

However, if performance testing cannot be waived, performance tests would concern metal melting emissions and would be performed only for emissions from charge well stacks. As shown in the TSD at page 2 of 6, the charge well stacks are numbered 6-2, 6-4, and 6-6. Stacks 6-1, 6-3, and 6-5 are furnace flue stacks for natural gas combustion byproducts and are not associated with emissions from metal melting. We therefore request that any reference to stacks 6-1, 6-3, and 6-5 be removed from condition 7 if the performance testing is required.

**Response 2:**

Proposed Operation Condition 7 that required particulate matter emission stack testing has been deleted as shown below for the following three (3) reasons:

- (a) An approved emission factor was used in the permit calculations,
- (b) The potential emissions before control for each emission unit is less than 40 tons per year, and
- (c) Particulate matter emissions are limited by 326 IAC 6-3.

All remaining conditions have been re-numbered due to this deletion.

~~Performance Testing~~

~~7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests for Stacks C-1 through C-6 shall be performed for particulate matter emissions from the reverberatory furnace complex #6 exhausts within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.~~

- ~~(a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.~~
- ~~(b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.~~
- ~~(c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.~~
- ~~(d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.~~
- ~~(e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.~~

**Comment 3:**

We agree with the conclusion in the TSD at "Source Status," page 3 of 6, stating that:

"This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories. This source was never permitted as a secondary metal production plant or any other of the 28 listed major PSD source categories."

Specifically, we agree that this source is not a secondary metal production plant. We wish to reaffirm our position that our source should not be classified as a secondary metal production plant, and therefore should not be treated as one of the 28 listed source categories in our Title V permit. The use of the term "secondary metal production" has been based on three elements: (1) use of scrap metal from outside sources as the primary feedstock component; (2) smelting, refining, reduction, or alloying; (3) production and sale of the metal as a primary product, as opposed to castings or formed products with an intended function (i.e., sand or die-cast engine parts or extruded cable and pipe). Our operations do not meet any of these three specifications, and as such we do not believe that operation condition 15, prohibiting our source from melting any post consumer materials, is necessary and request that it be removed.

**Response 3:**

Condition 15 (now 14) has been revised as stated in Response 1 to the US EPA comment.

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

**Company Name: General Motors Corp. - GMPTG - Bedford**  
**Address City IN Zip: 105 GM Drive, Bedford, IN 47421**  
**CP: 093-8868**  
**Plt ID: 093-00007**  
**Reviewer: Frank P. Castelli**  
**Date: August 14, 1997**

**Complex #6: Two (2) 18 MMBtu/hr Reveratory Furnaces**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
36.0	315.4

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lbs/MMCF	13.7	3.0	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	2.16	0.473	0.095	22.1	0.442	5.52

**Aluminum Melting**

Input Capacity Tons/hr	Potential Throughput tons/yr
6.0	52560.0

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lbs/ton	2.1	1.7	0.0	0.0	0.0	0.0
Potential Emission in tons/yr	55.2	44.7	0.000	0.0	0.000	0.00

Total Potential in tons/yr	57.3	45.1	0.095	22.1	0.442	5.52
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Allowable PM Emissions Pursuant to 326 IAC 6-3-2 =  $4.10P^{0.67}$  in pounds per hour

Allowable PM            13.6 pounds per hour            59.7 tons per year

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, FIRES 5.0

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

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