

CERTIFIED MAIL 7000 0600 0023 5188 1539

October 8, 2004

Mr. Ed Reelfs
International Truck and Engine Corporation
Indianapolis Casting Corporation
5565 Brookville Road
Indianapolis, IN 46219

Re: Significant Source Modification 097-18271-00039
(superceding Minor Source Modification 097-12752-00039)

Dear Mr. Reelfs:

International Truck and Engine Corporation (ITEC) applied for a Part 70 operating permit on October 24, 1996 for the operation of a gray iron foundry and an engine testing and assembly line. A Minor Source Modification to add a new pouring and cooling line (EU-F18) and a new engine test cell (NGDI) was approved on April 26, 2001. On October 23, 2003, an application was received to modify this source modification.

Pursuant to 326 IAC 2-7-10.5 the approval conditions for the construction and operation of EU-F18 are revised as described in the revised Part 70 Source Modification enclosed. This Significant Source Modification 097-18271-00039 revises and supercedes the Minor Source Modification 097-12752-00039 issued on April 26, 2001.

The Significant Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). If there are no changes to the proposed construction of the emission units, the source may begin operating on the date that IDEM and OES receive an affidavit of construction pursuant to 326 IAC 2-7-10.5(h). If there are any changes to the proposed construction the source can not operate until an Operation Permit Validation Letter is issued.

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 call Amanda Hennessy at (317)327-2510.

Sincerely,

Original Signed by John B. Chavez

John B. Chavez
Administrator

Enclosure: Technical Support Document
Significant Source Modification
Affidavit of Construction

ajh

cc: File
U.S. EPA, Region V
Mindy Hahn - IDEM, OAQ
Matt Mosier - Compliance
Amanda Hennessy - Permits
Marion County Health Department

PART 70 SIGNIFICANT SOURCE MODIFICATION

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY AND CITY OF INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES

**International Truck & Engine Corporation
5565 Brookville Road
Indianapolis, Indiana 46219**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval 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 2-7 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.

Significant Source Modification No.: 097-18271-00039	
Issued by: Original Signed by John B. Chavez John B. Chavez Administrator Office of Environmental Services	Issuance Date: 10-8-04

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SECTION A

SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and City of Indianapolis Office of Environmental Services (OES). The information describing the emission units contained in conditions A.1 through A.2 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 approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates stationary source which includes a gray iron foundry operation and engine testing and assembly operations

Responsible Official: Plant Manager, Engine Plant and
Plant Manager, Foundry Plant

Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219

Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219

SIC Code: 3714, 3321

County Location: Marion

County Status: Nonattainment for Ozone under the 8 hour standard
Attainment for all other criteria pollutants

Source Status: Part 70 Permit Program
Major Source, under PSD and non-attainment new source review;
Major Source, Section 112 of the Clean Air Act
1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

- (a) One (1) Casting Line, identified as EU-F18, with a nominal operating capacity of 9 tons of iron poured per hour and 10.75 tons of sand per hour, with pouring emissions controlled by the Phase 5 baghouse, exhausting to stacks SV-23 a, b and c, cooling, rollout room and waste mold storage emissions controlled by fabric filter F-1 and a regenerative thermal oxidizer, exhausting to stack SV-26, and constructed in 2001.
- (b) one (1) Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, combusting diesel fuel oil, and constructed in 2001.

Existing equipment to be phased out as EU-F18 is phased into operation:

- (c) One (1) M1 mold pouring operation, identified as emission unit EU-F08, constructed in 1957, with a maximum capacity of thirty (30) tons of metal poured per hour, with emissions uncontrolled, and exhausting through stacks SV-18A through SV-18C.
- (d) One (1) M1 mold cooling (Fume Tunnel M1) operation, identified as emission unit EU-F09, constructed in 1957, with a maximum capacity of thirty (30) tons of metal poured per hour, with emissions uncontrolled, and exhausting through stacks SV-19A through SV-19F.

- (e) One (1) molding operation, identified as emission unit EU-F10, constructed in 1976, consisting of sand coolers (M1 and M3), casting pre-cooling, a storage hopper, and a sand muller (M1), with a maximum capacity of ninety (90) tons of castings per hour and a maximum sand throughput of one hundred fifty (150) tons per hour, with emissions controlled by the Phase III South baghouse, and exhausting through stacks SV-20A through SV-20C.

Note: Only the portions of EU-F10 that are related to the M-1 line are affected by this Significant Source Modification. Those portions are: the M-1 sand cooler, M-1 casting pre-cooling, and the M-1 sand muller.

- (f) One (1) shakeout operation, identified as emission unit EU-F11, constructed in 1977, consisting of casting punchout, shakers, casting shakeout, and a cooling room, with a maximum capacity of thirty (30) tons of metal poured per hour with emissions controlled by the Phase IV baghouse, and exhausting through stacks SV-21A through SV021D.

Note: M-1 casting cooling and M-3 casting cooling take place on emission unit EU-11 (in the cooling room, also referred to as Casa Diablo), therefore, this equipment will remain on site to be used by the M-3 line after the phase out of the M-1 line. In addition, the shakers are used for both the M-1 line and the M-3 line, therefore, this equipment will also remain on site to be used by the M-3 line after the phase out of the M-1 line.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

A.4 Significant Source Modification [326 IAC 2-7-10.5] [326 IAC 2-7-12]

This Significant Source Modification supercedes the Minor Source Modification 097-12752-00039 issued on April 26, 2001.

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Permit No Defense [IC 13]

This approval 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.

B.2 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval 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.

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) 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 Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.
- (c) 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.
- (d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, on the attached Certification Form, with each submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)]
[326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this approval, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

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

and

Office of Environmental Services
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

- (c) PMP's shall be submitted to IDEM, OAQ and OES upon request and shall be subject to review and approval by IDEM, OAQ and OES. IDEM, OAQ and OES may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval.

- (b) Any application requesting an amendment or modification of this approval shall be submitted to:

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

and

Office of Environmental Services
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

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 approval:

- (a) Opacity shall not exceed an average of thirty percent (30%) 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.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission unit(s) vented to the control equipment are in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.6 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

- (a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

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

and

Office of Environmental Services
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ, and OES of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, and OES not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, and OES if the Permittee submits to IDEM, OAQ, and OES a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.7 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented upon initial startup of EU-F18. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated upon startup of EU-F18, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management

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

and

Office of Environmental Services
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance monitoring and record keeping for the fabric filter F-1 and the Regenerative Thermal Oxidizer shall be implemented when operation begins.

C.8 Pressure Gauge Specifications

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) Whenever a condition in this permit requires the measurement of a temperature, duct pressure, fan amperage or flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (c) The Permittee may request the IDEM, OAQ, and OES to approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.9 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. If a Permittee is required to have an Operation, Maintenance and Monitoring (OMM) Plan under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions. A CRP shall be submitted to IDEM, OAQ and OES upon request. The CRP for compliance monitoring conditions for the M-1 line, Phase 5 baghouse and Phase 3 South baghouse shall be prepared by the Permittee within ninety (90) days after issuance of significant source modification 097-18271-00039. The CRP for the compliance monitoring conditions for the fabric filter F-1 and the Regenerative Thermal Oxidizer shall be prepared before initial operation of those control units begins by the

Permittee. All CRPs shall be supplemented from time to time by the Permittee, maintained on site, and comprised of:

- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
- (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan to include such response steps taken.

The OMM Plan (or Parametric Monitoring and SSM Plan) shall be submitted within the time frames specified by the applicable 40 CFR 60/63 requirement.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be 10 days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered a deviation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.

- (4) The process has already returned or is returning to operating within “normal” parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when, in accordance with Section D, response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

**C.10 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]**

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, and OES within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ, and OES that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ, and OES may extend the retesting deadline.
- (c) IDEM, OAQ, and OES reserve the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.11 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or Administrator of OES makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or OES within a reasonable time.
- (b) All record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance.

C.12 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The reports required by conditions in Section D of this approval shall be submitted to:

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

and

Office of Environmental Services
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

- (b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ and OES on or before the date it is due.
- (c) Unless otherwise specified in this approval, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
- (d) The first report shall cover the period commencing on the date of issuance of this approval and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) One (1) Casting Line, identified as EU-F18, with a nominal operating capacity of 9 tons of iron poured per hour and 10.75 tons of sand per hour, with pouring emissions controlled by the Phase 5 baghouse, exhausting to stacks SV-23 a, b and c, cooling, rollout room and waste mold storage emissions controlled by fabric filter F-1 and a regenerative thermal oxidizer, exhausting to stack SV-26, and constructed in 2001.

Existing equipment to be phased out as EU-F18 is phased into operation:

- (c) One (1) M1 mold pouring operation, identified as emission unit EU-F08, constructed in 1957, with a maximum capacity of thirty (30) tons of metal poured per hour, with emissions uncontrolled, and exhausting through stacks SV-18A through SV-18C.
- (d) One (1) M1 casting cooling (Fume Tunnel M1) operation, identified as emission unit EU-F09, constructed in 1957, with a maximum capacity of thirty (30) tons of metal poured per hour, with emissions uncontrolled, and exhausting through stacks SV-19A through SV-19F.
- (e) One (1) molding operation, identified as emission unit EU-F10, constructed in 1976, consisting of sand coolers (M1 and M3), casting pre-cooling, a storage hopper, and a sand muller (M1), with a maximum capacity of ninety (90) tons of castings per hour and a maximum sand throughput of one hundred fifty (150) tons per hour, with emissions controlled by the Phase III baghouse, and exhausting through stacks SV-20A through SV-20C.

Note: Only the portions of EU-F10 that are related to the M-1 line are affected by this Significant Source Modification. Those portions are: the M-1 sand cooler, M-1 casting pre-cooling, and the M-1 sand muller.

- (f) One (1) shakeout operation, identified as emission unit EU-F11, constructed in 1977, consisting of casting punchout, shakers, casting shakeout, and a cooling room, with a maximum capacity of thirty (30) tons of metal poured per hour with emissions controlled by the Phase IV baghouse, and exhausting through stacks SV-21A through SV021D.

Note: M-1 casting cooling and M-3 casting cooling take place on emission unit EU-11 (in the cooling room, also referred to as Casa Diablo), therefore, this equipment will remain on site to be used by the M-3 line after the phase out of the M-1 line. In addition, the shakers are used for both the M-1 line and the M-3 line, therefore, this equipment will also remain on site to be used by the M-3 line after the phase out of the M-1 line.

(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 2-7-5(1)]

D.1.1 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR Part 63, Subpart A]

- (a) The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to EU-F18 except when otherwise specified in 40 CFR 63 Subpart EEEEE. The Permittee must comply with these requirements on and after April 22, 2004.
- (b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition, except as otherwise provided in this condition. The permit shield applies to Condition D.1.18, National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Notification Requirements.

D.1.2 National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries [40 CFR Part 63, Subpart EEEEE] [326 IAC 20]

- (a) The affected source, the iron foundry, is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries, (40 CFR 63, Subpart EEEEE, and 326 IAC 20-1-1), effective April 22, 2004. Pursuant to this rule, the Permittee must comply with 40 CFR 63, Subpart EEEEE on and after April 23, 2007, except as provided in paragraph (c), or accept and meet an enforceable HAP emissions limit below the major source threshold prior to April 23, 2007.
- (b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition, except as otherwise provided in this condition. The permit shield applies to Condition D.1.18, National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Notification Requirements.
- (c) The following emission units identified in this D section comprise the affected source that is subject to 40 CFR 63, Subpart EEEEE: M-1 mold pouring operation (EU-F08) and casting line EU-F18.
- (d) The definitions of 40 CFR 63, Subpart EEEEE at 40 CFR 63.7765 are applicable to the affected source.
- (e) Pursuant to 40 CFR 63.7700(a) and 40 CFR 63.7683(b), the Permittee shall comply with the certification requirements in 40 CFR 63.7700(b) or prepare and implement a plan for the selection and inspection of scrap according to the requirements in 40 CFR 63.7700(c) no later than April 22, 2005.

D.1.3 Particulate Matter (PM) [326 IAC 6-1-2(a)] [326 IAC 2-2]

- (a) Pursuant to 326 IAC 6-1-2(a)(Area Particulate Limitations), particulate matter (PM) emissions from EU-F18 shall be limited to 0.03 grain per dry standard cubic foot.
- (b) After the phase out of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:
 - (1) PM stack emissions from all EU-F18 processes (Phase 5 Baghouse and fabric filter F-1) combined shall not exceed 4.6 pounds per ton of metal poured on EU-F18.

- (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.
 - (3) At least 90% of the PM emissions generated during pouring shall be captured by the Phase 5 Baghouse and controlled such that visible emissions from the pouring operation shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).
- (c) During the phase out period of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:
- (1) PM stack emissions from all EU-F18 processes (Phase 5 Baghouse and fabric filter F-1) shall not exceed 4.6 pounds per ton of metal poured on EU-F18.
 - (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.
 - (3) At least 90% of the PM emissions generated during pouring on EU-F18 shall be captured by the Phase 5 Baghouse such that visible emissions from the pouring process shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).
 - (4) PM emissions from the M-1 line and EU-F18 combined shall not exceed one hundred fifty two (152) tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with D.1.3(b) and (c), D.1.6, and D.2.2 shall limit the net increase of PM emissions from this modification to less than twenty five (25) tons per twelve (12) consecutive month period. This will make 326 IAC 2-2 (PSD) not applicable.

D.1.4 PSD Minor PM-10 Limitations [326 IAC 2-2]

- (a) After the phase out of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:
- (1) PM10 stack emissions from all EU-F18 baghouses (Phase 5 and fabric filter F-1) combined shall not exceed 2.6 pounds per ton of metal poured on EU-F18.
 - (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.
 - (3) At least 90% of the PM10 emissions generated during pouring shall be captured by the Phase 5 Baghouse and controlled such that visible emissions from the pouring process shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).
- (b) During the phase out period of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:
- (1) PM10 stack emissions from EU-F18 shall not exceed 2.6 pounds per ton of metal poured on EU-F18.
 - (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.

- (3) At least 90% of the PM10 emissions generated during pouring on EU-F18 shall be captured by the Phase 5 Baghouse such that visible emissions from the pouring process shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).
- (4) PM10 emissions from the M-1 line and EU-F18 combined shall not exceed eighty five (85) tons per twelve month period with compliance determined at the end of each month.

Compliance with D.1.4(a) and (b), D.2.2(a) & (b) and D.1.6 shall limit the net increase of PM-10 emissions from this modification to less than fifteen (15) tons per twelve (12) consecutive month period. This will make 326 IAC 2-2 (PSD) not applicable.

D.1.5 VOC (Volatile Organic Compounds) [326 IAC 2-1.1-5] [326 IAC 2-5.1-3] [326 IAC 8-1-6]

- (a) During the phase out period of the M-1 line, in order to render the requirements of 326 IAC 2-2 and Nonattainment NSR not applicable, the Permittee shall comply with the following requirements:
 - (1) VOC emissions from the EU-F18 rollout process and stack emissions from EU-F18 pouring and cooling shall not exceed 0.98 pounds per ton of metal poured on EU-F18.
 - (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (3) VOC emissions from the M-1 line and EU-F18 shall not exceed 32.09 tons per twelve month consecutive month period with compliance determined at the end of each month.

Compliance with D.1.5(a) and D.1.6 shall limit the net increase of VOC emissions from this modification to less than 40 tons per twelve consecutive month period. This will make the PSD Regulation 326 IAC 2-2 and nonattainment NSR not applicable.

- (b) Pursuant to 326 IAC 8-1-6, the Permittee shall employ Best Available Control Technology (BACT). BACT for EU-F18 has been determined to be:
 - (1) Installation and operation of a regenerative thermal oxidizer (RTO) attaining at least 95% control efficiency to control the rollout and cooling portions of the process. Rollout consists of casting removal, mold conveyor and waste mold storage. The Permittee must maintain total enclosure, as defined in EPA Method 204, for the rollout process;
 - (2) VOC emissions from cooling and rollout shall not exceed 0.221 pounds per ton of metal poured;
 - (3) Total VOC emissions from pouring shall not exceed 0.84 pounds per ton of metal poured; and
 - (4) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with D.1.5(b) and D.1.6 shall also render the PSD Regulation 326 IAC 2-2 and nonattainment NSR not applicable after the phase out of the M-1 line.

D.1.6 PM10, PM and VOC (Volatile Organic Compounds) Emission Credits [326 IAC 2-1.1-5] [326 IAC

2-5.1-3]

In order to make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Rules) and Nonattainment NSR not applicable for EU-F18 and NGDI for PM10 and VOC, the emission credits must be made federally enforceable. Therefore, in order to render 326 IAC 2-2 and Nonattainment NSR not applicable, the Permittee shall comply with the following requirements on and after the initial startup date of EU-F18:

- (a) PM10 emissions from the M-1 line pouring, cooling, and the Phase 4 Baghouse controlling shakeout (EU-F08, EU-F09 and EU-F11) combined shall not exceed 3.572 pounds per ton of metal poured.
- (b) PM10 emissions from the Phase 3 South Baghouse controlling the M-1 line sand system (EU-F10) shall not exceed 0.027 pounds per ton of sand throughput.
- (c) PM emissions from the M-1 line pouring, cooling, and Phase 4 Baghouse controlling shakeout (EU-F08, EU-F09 and EU-F11) combined shall not exceed 5.76 pounds per ton of metal poured.
- (d) PM emissions from the Phase 3 South Baghouse controlling the M-1 line sand system (EU-F10) shall not exceed 0.027 pounds per ton of sand throughput.
- (e) VOC emissions from M-1 line pouring, cooling and shakeout combined shall not exceed 1.34 pounds per ton of metal poured.

D.1.7 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for EU-F18, the M-1 line, and any control devices.

Compliance Determination Requirements

D.1.8 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

- (a) During the period within 180 days after startup of EU-F18, a performance test shall be conducted in order to demonstrate compliance with Condition D.1.4(a)(1) or D.1.4(b)(1). The Permittee shall perform PM-10 testing on stack emissions from EU-F18 utilizing methods as approved by the Commissioner. All stacks from EU-F18 shall be tested simultaneously. Testing shall be repeated every five (5) years. PM-10 includes filterable and condensable PM-10. Testing shall be conducted in accordance with Section C- Performance Testing.
- (b) During the period within 180 days after startup of EU-F18, a performance test shall be conducted on stack emissions from the pouring, cooling, and rollout processes in order to demonstrate compliance with the VOC limits in Condition D.1.5(b)(1), (2), and (3) (if phase out of the M-1 line is complete) and D.1.5(a)(1) (if phase out of the M-1 is not yet complete). The Permittee shall perform VOC testing utilizing methods as approved by the Commissioner. During the stack test, the Permittee shall monitor and record those parameters required to be measured by Conditions D.1.11 (temperature) and D.1.12 (duct pressure or fan amperage). Cooling and rollout shall be tested simultaneously. Testing shall be repeated every two and a half (2.5) years. Testing shall be conducted in accordance with Section C- Performance Testing.
- (c) During the period within 180 days after startup of EU-F18, a performance test shall be conducted in order to demonstrate compliance with Condition D.1.3(b)(1) or D.1.3(c)(1). The Permittee shall perform PM testing on stack emissions from EU-F18 utilizing methods as approved by the Commissioner. All stacks from EU-F18 shall be tested

simultaneously. Testing shall be repeated every five (5) years. Testing shall be conducted in accordance with Section C- Performance Testing.

- (d) During the period within 180 days after the initial startup date of EU-F18, a performance test shall be conducted on emission points from the M-1 line in order to demonstrate compliance with Condition D.1.6. The Permittee shall perform VOC and PM10 testing utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. All emission units venting to the control devices and stacks of the M-1 line shall be in operation during the stack test. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.9 VOC (Volatile Organic Compounds) [326 IAC 8-1-6] [326 IAC 2-1.1-5] [326 IAC 2-5.1-3]

In order to comply with D.1.5, the RTO for VOC control shall be in operation and controlling emissions from the cooling and rollout process at all times that any portion of the cooling or rollout process is in operation.

D.1.10 Particulate Matter ten (10) microns in aerodynamic diameter (PM-10)

In order to comply with D.1.4:

- (a) Phase 5 Baghouse shall be in operation and controlling emissions from the pouring process at all times when the pouring is taking place.
- (b) The fabric filter F-1 shall be in operation and controlling emissions from the cooling process and the rollout room which consists of: casting removal, the mold conveyor, and the waste mold storage area at all times when cooling and/or rollout from EU-F18 is taking place.
- (c) On and after the initial startup date of EU-F18, Phase 3 South Baghouse shall be in operation and controlling emissions from the M-1 line (part of EU-F10) sand handling process at all times when sand handling is taking place on the M-1 line.
- (d) On and after the initial startup date of EU-F18, Phase 4 Baghouse shall be in operation and controlling emissions from shakeout when shakeout on the M-1 line is taking place.

D.1.11 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature. For the purpose of this condition, continuous means at least once per minute. The output of this system shall be recorded as a three hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the three hour average temperature of 1400°F.
- (b) The Permittee shall determine the three hour average temperature from the most recent valid stack test that demonstrates compliance with limits in condition D.1.5, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the three hour average temperature as observed during the compliant stack test.

D.1.12 Parametric Monitoring

- (a) The Permittee shall determine the appropriate duct pressure or fan amperage from the

most recent valid stack test that demonstrates compliance with limits in condition D.1.5, as approved by IDEM, OAQ, and OES.

- (b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in the most recent compliant stack test.

D.1.13 VOC (Volatile Organic Compounds), PM and Particulate Matter less than ten (10) microns in aerodynamic diameter (PM-10) [326 IAC 8-1-6] [326 IAC 2-1.1-5] [326 IAC 2-5.1-3] [326 IAC 2-2]

- (a) During the phase out of the M-1 line, the Permittee shall use the following equation to demonstrate compliance with the tons per year VOC limit in Condition D.1.5(b)(4):

$$V = [M18 * (A + C)] + [MM * D]$$

- (b) During the phase out of the M-1 line, the Permittee shall use the following equation to demonstrate compliance with the tons per year PM10 limit in Condition D.1.4(a)(3):

$$P = [M18 * (E + F)] + [(MM * G) + (SM * H)]$$

- (c) During the phase out of the M-1 line, the Permittee shall use the following equation to demonstrate compliance with the tons per year particulate matter limit in Condition D.1.3(c):

$$PM = [M18 * (I + J)] + [(MM * K) + (SM * L)]$$

Where:

- V = annual VOC emissions (tons per year)
P = annual PM10 emissions (tons per year)
PM = annual PM emissions (tons per year)
M18 = tons of metal poured on EU-18
MM = tons of metal poured on M-1 line
SM = tons of sand through the M-1 line
A = maximum emission factor for stack emissions (pounds of VOC/ton of metal poured) emitted from EU-F18 rollout process and EU-F18 pouring and cooling: 0.98 or an emission factor determined in the most recent stack tests required by Condition D.1.8
C = maximum emission factor for fugitive emissions (pounds of VOC / ton of metal poured) emitted from EU-F18 pouring and cooling: 0.08
D = maximum emission factor for (pounds of VOC / ton of metal poured) emitted from the M-1 line: 1.34 or an emission factor determined in the most recent stack test required by Condition D.1.8
E = maximum emission factor for stack emissions (pounds of PM10/ton of metal poured) emitted from EU-F18: 2.6 or an emission factor determined in the most recent stack test required by Condition D.1.8
F = emission factor for fugitive emissions (pounds of PM10 / ton of metal poured) emitted from EU-F18 (Permittee is required to

- G= attain 90% capture from pouring): (0.206)
maximum emission factor for emissions (pounds of PM10 / ton of metal poured) emitted from pouring, cooling and shakeout from the M-1 line: 3.572 or an emission factor determined in the most recent stack test required by Condition D.1.8
- H= maximum emission factor for emissions (pounds of PM10 / ton of sand) emitted from sand handling from the M-1 line: 0.027 or an emission factor determined in the most recent stack test required by Condition D.1.8
- I= maximum emission factor for emissions (pounds of PM/ ton of metal poured) emitted from EU-F18 pouring, cooling, and rollout: 4.6 or an emission factor determined in the most recent stack tests required by Condition D.1.8
- J= emission factor for fugitive emissions (pounds of PM / ton of metal poured) emitted from EU-F18 (Permittee is required to attain 90% capture from pouring): 0.42
- K= maximum emission factor for emissions (pounds of PM / ton of metal poured) emitted from pouring, cooling, and shakeout from the M-1 line: 5.76 or an emission factor determined in the most recent stack test required by Condition D.1.8
- L= maximum emission factor for emissions (pounds of PM / ton of sand) emitted from sand handling from the M-1 line: 0.027 or an emission factor determined in the most recent stack test required by Condition D.1.8

- (d) At any time that pouring from EU-F18 is venting to the Phase 5 Baghouse, the M-1 tower and bucket elevators shall not be in operation and venting to the Phase 5 Baghouse.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.14 Visible Emissions Notations

- (a) Visible emission notations of each of the EU-F18 stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. On and after the initial startup date of EU-F18, visible emission notations of each of the M-1 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 for each stack.
- (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 these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -

Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

D.1.15 Parametric Monitoring

On and after the initial startup date of EU-F18, the Permittee shall record the total static pressure drop across each of the baghouses used in conjunction with the pouring, cooling and rollout processes of EU-F18 (Phase 5 Baghouse and Fabric Filter F-1), with the sand handling processes of the M-1 line (Phase 3 South Baghouse) and with the M-1 line shakeout process (Phase 4 Baghouse), at least once per shift when the processes are in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 2.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

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

D.1.16 Baghouse Inspections

On and after the initial startup date of EU-F18, an inspection shall be performed each calendar quarter of all bags controlling the processes of EU-F18 and M-1 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 to the indoors. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.17 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business 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) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
- (b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then 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 2-7-5(3)] [326 IAC 2-7-19]

D.1.18 National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Notification Requirements [40 CFR 63, Subpart EEEEE]

- (a) Pursuant to 40 CFR 63.7750, the Permittee shall submit all of the notifications required by 40 CFR 63.6(h)(4) and (5), 63.7(b) and (c); 63.8(e); 63.8(f)(4) and (6); 63.9(b) through (h) that apply to the affected source and chosen compliance method by the specified dates. These notifications include, but are not limited to, the following:
- (1) An Initial Notification containing the information specified in 40 CFR 63.9(b)(2) no later than August 20, 2004.
 - (2) A Notification of Compliance Status containing the information required by 40 CFR 63.9(h) in accordance with 40 CFR 63.7750(e). The Notification of Compliance Status must be submitted:
 - (A) Before the close of business on the 30th calendar day following completion of the initial compliance demonstration for each initial compliance demonstration that does not include a performance test; and
 - (B) Before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in 40 CFR 63.10(d)(2) for each initial compliance demonstration that does include a performance test.
 - (3) If required to conduct a performance test, a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by 40 CFR 63.7(b)(1) and 40 CFR 63.7750(d).
 - (4) If required to use a continuous monitoring system (CMS), notifications, if required, as specified in 40 CFR 63.9(g), by the date of submission of the notification of intent to conduct a performance test.
 - (5) If required to conduct opacity or visible emissions observations, the anticipated date for conducting the opacity or visible emission observations specified in 40 CFR 63.6(h)(5) in accordance with the appropriate schedule specified in 40 CFR 63.9(f) as required by 40 CFR 63.7750(a).

- (b) The notifications required by paragraph (a) shall be submitted to:

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

and

Office of Environmental Services

Air Quality Management Section
2700 South Belmont Avenue
Indianapolis, IN 46221

The notifications require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

D.1.19 Requirement to Submit a Significant Permit Modification Application or to Update Permit Application [326 IAC 2-7-12][326 IAC 2-7-5] [326 IAC 2-7-4(b)]

- (a) If the Permittee's Part 70 permit is issued prior to January 23, 2005, the Permittee shall submit an application for a significant permit modification to IDEM, OAQ and OES to include information regarding which compliance option or options will be chosen in the Part 70 permit.
- (1) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Part 70 permit the applicable requirements of 40 CFR 63, Subpart EEEEE, a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.
 - (2) The significant permit modification application shall be submitted no later than nine months prior to April 23, 2007.
 - (3) The significant permit modification application shall be submitted to:

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

and

Office of Environmental Services
Air Quality Management Section
2700 South Belmont Avenue
Indianapolis, IN 46221
- (b) If the Permittee's Part 70 permit is not issued prior to twenty seven months prior to April 23, 2007, pursuant to 326 IAC 2-7-4(b) the Permittee shall submit an update to the Part 70 permit application.

D.1.20 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.4 and D.1.5 the Permittee shall maintain monthly records complete and sufficient to establish compliance with the PM-10 limits established in Condition D.1.4 and the VOC limits in D.1.5. These records shall include the amount of metal poured each month on EU-F18 and on M-1 and the amount of sand throughput on the M-1 line.

Implementation of this recordkeeping requirement shall begin upon initial operation of EU-F18.

- (b) To document compliance with Condition D.1.14, the Permittee shall maintain records of visible emission notations of EU-F18 and M-1 line stack exhaust once per shift.
- (c) To document compliance with Condition D.1.15, the Permittee shall maintain records of the differential static pressure once per shift.
- (d) To document compliance with Condition D.1.16, the Permittee shall maintain records of the results of the inspections required under Condition D.1.16.
- (e) To document compliance with Condition D.1.11, the Permittee shall maintain continuous temperature records (reduced to a three hour average basis) for the thermal oxidizer and the three hour average temperature used to demonstrate compliance during the most recent compliant stack test.
- (f) To document compliance with Condition D.1.12, the Permittee shall maintain daily records of the duct pressure or fan amperage and the duct pressure or fan amperage recorded during the most recent stack test.
- (g) The Permittee shall maintain a permanent record of the date of final shutdown of the M-1 line.
- (h) To document compliance with D.1.13(c), if a damper system, preventing the M-1 tower and bucket elevators and EU-F18 pouring from venting to the Phase 5 baghouse at the same time, is not in place, the Permittee shall keep a log of dates and hours of operation for each of the following emission units: EU-F18 pouring and M-1 tower and bucket elevators. Hours of operation for the purpose of this condition means time of day (for example: EU-F18 pouring operated from 8 am until 8 pm).
- (i) To document compliance with Condition D.1.7 the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (j) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.21 Reporting Requirements

- (a) A quarterly summary of the information to document compliance with Conditions D.1.3(b) and (c), D.1.4 and D.1.5 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The reports submitted by the Permittee do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The permittee shall submit to IDEM, OAQ and OES notification that M-1 phase out is complete within thirty (30) days after the phase out is complete.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (b) One (1) Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, combusting diesel fuel oil, and constructed in 2001.

(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 2-7-5(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a)(Area Particulate Limitations), particulate matter (PM) emissions from NGDI shall be limited to 0.03 grain per dry standard cubic foot.

D.2.2 PSD Minor PM-10 and PM Limitations [326 IAC 2-2]

Such that 326 IAC 2-2 is not applicable,

- (a) PM-10 and PM shall be limited to less than 0.0476 pounds per gallon of diesel fuel used and
- (b) 210,000 gallons of diesel fuel input per twelve (12) consecutive month period.

Compliance with D.1.4 and D.2.2(a) & (b) shall limit PM-10 emissions to less than fifteen (15) tons of PM-10 emissions per 12 consecutive month period. Compliance with D.1.3(b) or (c), D.2.2(a) and (b) and D.1.6 shall limit PM emissions to less than twenty five (25) tons per twelve (12) consecutive month period. This will make the PSD Regulation 326 IAC 2-2 not applicable.

D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this emission unit.

Compliance Determination Requirements

D.2.4 Particulate Matter ten (10) microns in aerodynamic diameter (PM-10)

Compliance with Condition D.2.2 shall be demonstrated within 30 days of the end of each month based on pounds of PM-10 per gallon of diesel fuel used and the total gallons of fuel used per twelve (12) consecutive month period.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.5 Record Keeping Requirements

- (a) To document compliance with Conditions D.2.2 and D.2.4 the Permittee shall maintain monthly records complete and sufficient to establish compliance with the PM-10 limits established in Condition D.2.2.
- (b) To document compliance with Condition D.2.3 the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.6 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
CITY OF INDIANAPOLIS
OFFICE OF ENVIRONMENTAL SERVICES**

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: International Truck & Engine Corporation
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Source Modification No.: 097-18271-00039

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- Test Result (specify) _____
- Report (specify) _____
- Notification (specify) _____
- Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 CITY OF INDIANAPOLIS
 OFFICE OF ENVIRONMENTAL SERVICES**

**Part 70 Source Modification Quarterly Report
 After M-1 phase out period**

Source Name: International Truck & Engine Corporation
 Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Source Modification No.: 097-18271-00039
 Facility: Casting Line EU-F18
 Parameter: Tons of Metal Poured on EU-F18 per twelve (12) consecutive month period with compliance determined at the end of each month.
 Limit: 60,500 tons of metal poured

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- ☉ No deviation occurred in this quarter.
- ☉ Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

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

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 CITY OF INDIANAPOLIS
 OFFICE OF ENVIRONMENTAL SERVICES**

**Part 70 Source Modification Quarterly Report
 During M-1 phase out period**

Source Name: International Truck & Engine Corporation
 Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Source Modification No.: 097-18271-00039
 Facility: Casting Line EU-F18, EU-F08, EU-F10 and EU-F09
 Parameter: Tons of PM10 per twelve (12) consecutive month period with compliance determined at the end of each month.
 Limit: 85 tons of PM10

Month	Emission Unit	Control ID	metal poured (ton)	Sand Through put (tons)	multiply by (lb/ton)	This month	Column 1	Column 2	Column 1 + 2
							Total This Month	Previous 11 Months	12 Month Total
	EU-F08, F09 and F11 (m-1 pouring, cooling, shakeout and Casa Diablo)	no control			3.572				
	EU-F10 (M-1 sand handling)	Phase 3 Baghouse			0.027				
	EU-F18 (Toaster line: pouring, pouring fugitives, cooling, and shakeout)	Phase 5 baghouse (pouring) and fabric filter (cooling, rollout, and mold storage)			(2.77 + 0.2)				

Month	Emission Unit	Control ID	metal poured (ton)	Sand Through put (tons)	multiply by (lb/ton)	This month	Column 1	Column 2	Column 1 + 2
							Total This Month	Previous 11 Months	12 Month Total
	EU-F08, F09, and F11 (m-1 pouring, cooling, shakeout and Casa Diablo)	no control			3.572				
	EU-F10 (M-1 sand handling)	Phase 3 Baghouse			0.027				
	EU-F18 (Toaster line: pouring, puring fugitives, cooling, and shakeout)	Phase 5 baghouse (pouring) and fabric filter (cooling, rollout and mold storage)			(2.77 + 0.2)				
	EU-F08, F09, and F11 (M-1 pouring, cooling, shakeout and Casa Diablo)	no control			3.572				
	EU-F10 (M-1 sand handling)	Phase 3 Baghouse			0.027				
	EU-F18 (Toaster line: pouring, pouring fugitives, cooling, and shakeout)	Phase 5 baghouse (pouring), fabric filter (cooling, rollout and mold storage)			(2.77 + 0.2)				

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

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

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 CITY OF INDIANAPOLIS
 OFFICE OF ENVIRONMENTAL SERVICES**

**Part 70 Source Modification Quarterly Report
 During M-1 phase out period**

Source Name: International Truck & Engine Corporation
 Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Source Modification No.: 097-18271-00039
 Facility: Casting Line EU-F18, EU-F08, EU-F10 and EU-F09
 Parameter: Tons of PM per twelve (12) consecutive month period with compliance determined at the end of each month.
 Limit: 152 tons of PM

Month	Emission Unit	Control ID	metal poured (ton)	Sand Through put (tons)	multiply by (lb/ton)	This Month	Column 1	Column 2	Column 1 + 2
							This Month	Previous 11 Months	12 Month Total
	EU-F08, F09, and F11 (m-1 pouring, cooling, shakeout and Casa Diablo)	no control			5.76				
	EU-F10 (M-1 sand handling)	Phase 3 Baghouse			0.027				
	EU-F18 (Toaster line: pouring, puring fugitives, cooling, and shakeout)	Phase 5 baghouse (pouring) and fabric filter F-1 (cooling, rollout and mold storage)			(4.6 + 0.46)				
	EU-F08, F09, and F11 (m-1 pouring, cooling, shakeout and Casa Diablo)	no control			5.76				

Month	Emission Unit	Control ID	metal poured (ton)	Sand Through put (tons)	multiply by (lb/ton)	This Month	Column 1	Column 2	Column 1 + 2
							This Month	Previous 11 Months	12 Month Total
	EU-F10 (M-1 sand handling)	Phase 3 Baghouse			0.027				
	EU-F18 (Toaster line: pouring, pouring fugitives, cooling, and shakeout)	Phase 5 baghouse (pouring) and fabric filter F-1 (cooling, rollout and mold storage)			(4.6 + 0.46)				
	EU-F08, F09, and F11 (M-1 pouring, cooling, shakeout, and Casa Diablo)	no control			5.76				
	EU-F10 (M-1 sand handling)	Phase 3 Baghouse			0.027				
	EU-F18 (Toaster line: pouring, pouring fugitives, cooling, and shakeout)	Phase 5 baghouse (pouring) and fabric filter F-1 (cooling, rollout and mold storage)			(4.6 + 0.46)				

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

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

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION
 and
 CITY OF INDIANAPOLIS
 OFFICE OF ENVIRONMENTAL SERVICES**

**Part 70 Source Modification Quarterly Report
 During M-1 phase out period**

Source Name: International Truck & Engine Corporation
 Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Source Modification No.: 097-18271-00039
 Facility: Casting Line EU-F18, EU-F08, and EU-F09
 Parameter: Tons of VOC per twelve (12) consecutive month period with compliance determined at the end of each month.
 Limit: 32.09 tons of VOC

Month	Emission Unit	Control Device	metal poured (ton)	multiply by (lb/ton)	This Month	Column 1	Column 2	Column 1 + 2
						This Month	Previous 11 Months	12 Month Total
	EU-F08 and F09 (M-1 pouring, cooling and Casa Diablo)	no control		1.34				
	EU-F18 (Toaster Line: fugitive pouring and cooling, stack pouring and cooling, and rollout)	RTO on cooling and rollout		1.06				
	EU-F08 and F09 (M-1 pouring, cooling and Casa Diablo)	no control		1.34				
	EU-F18 (Toaster Line: fugitive pouring and cooling, stack pouring and cooling, and rollout)	RTO on cooling and rollout		1.06				

Month	Emission Unit	Control Device	metal poured (ton)	multiply by (lb/ton)	This Month	Column 1	Column 2	Column 1 + 2
						This Month	Previous 11 Months	12 Month Total
	EU-F08 and F09 (M-1 pouring, cooling, and Casa Diablo)	no control		1.34				
	EU-F18 (Toater Line: fugitive pouring and cooling, stack pouring and cooling, and rollout)	RTO on cooling and rollout		1.06				

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

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

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 CITY OF INDIANAPOLIS
 OFFICE OF ENVIRONMENTAL SERVICES**

Part 70 Source Modification Quarterly Report

Source Name: International Truck & Engine Corporation
 Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
 Source Modification No.: 097-18271-00039
 Facility: Engine Test Cell NGDI
 Parameter: PM-10
 Limit: 210,000 gallons of diesel fuel per twelve (12) consecutive month period with compliance determined at the end of each month

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
CITY OF INDIANAPOLIS
OFFICE OF ENVIRONMENTAL SERVICES**

**PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: International Truck and Engine Corporation
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Source Modification No.: 097-12752-00039

Months: _____ to _____ Year: _____ Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<p><input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.</p>	
<p><input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD</p>	
<p>Permit Requirement (specify permit condition #)</p>	
<p>Date of Deviation:</p>	<p>Duration of Deviation:</p>
<p>Number of Deviations:</p>	
<p>Probable Cause of Deviation:</p>	
<p>Response Steps Taken:</p>	
<p>Permit Requirement (specify permit condition #)</p>	
<p>Date of Deviation:</p>	<p>Duration of Deviation:</p>
<p>Number of Deviations:</p>	
<p>Probable Cause of Deviation:</p>	
<p>Response Steps Taken:</p>	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

City of Indianapolis
Office of Environmental Services, Air Permits
2700 South Belmont Avenue
Indianapolis, IN 46221

International Truck & Engine Corporation
5565 Brookville Road
Indianapolis, Indiana 46219

Affidavit of Construction

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

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)

4. I hereby certify that International Truck & Engine Corporation, 5565 Brookville Road, Indianapolis, 46219, has constructed the emission units in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality and Office of Environmental Services and as permitted pursuant to **Significant Source Modification No. 097-18271-00039** issued on _____.

Further Affiant said not.

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

Signature

Date

STATE OF INDIANA

COUNTY OF _____

Subscribed and sworn to me, a notary public in and for _____ County and State
of Indiana on this _____ day of _____, 20 _____.

My Commission expires: _____

Signature

Name (typed or printed)

Attachment A

The following state rules have been adopted by reference by the Indianapolis Air Pollution Control Board and are enforceable by Indianapolis Office of Environmental Services (OES) using local enforcement procedures.

- (1) 326 IAC 1
- (2) 326 IAC 2-3-1 through 2-3-5;
- (3) 326 IAC 2-4-1 through 2-4-6;
- (4) 326 IAC 2-6-1 through 2-6-4;
- (5) 326 IAC 2-7-1 through 2-7-18, 2-7-20 through 2-7-25;
- (6) 326 IAC 2-8-1 through 2-8-15, 2-8-17 through 2-8-10;
- (7) 326 IAC 2-9-1 through 2-9-14;
- (8) 326 IAC 2-10-1 through 2-10-5 (The IAPCB adoption adds the language "state or local" immediately after the word "federal" in 326 IAC 2-10-1);
- (9) 326 IAC 2-11-1, 2-11-3 and 2-11-4 (The IAPCB adoption adds the language "federal, state or local" immediately after the word "by" in 326 IAC 2-11-1);
- (10) 326 IAC 3-1.1-1 through 3-1.1-5;
- (11) 326 IAC 3-2.1-1 through 3-2.1-5;
- (12) 326 IAC 3-3-1 through 3-3-5;
- (13) 326 IAC 4-2-1 through 4-2-2;
- (14) 326 IAC 5-1-1 (a), (b) and c) (5), 5-1-2 (1), (2)(A), (2)c) (4), 5-1-3 through 5-1-5, 5-1-7;
- (15) 326 IAC 6;
- (16) 326 IAC 7-1.1-1 and 7-1.1-2;
- (17) 326 IAC 7-2-1;
- (18) 326 IAC 7-3-1 and 7-3-2;
- (19) 326 IAC 7-4-2(28) through (31) (Instead of adopting by reference 7-4-2(1) through (27), the IAPCB regulation substitutes the same requirements listed in a format in which the companies are alphabetized and emission points known to no longer exist have been deleted);
- (20) 326 IAC 8-1-0.5 except (b), 8-1-1 through 8-1-2, 8-1-3 except c), (g) and (i), 8-1-5 through 8-1-12;
- (21) 326 IAC 8-2-1 through 8-2-12 (The IAPCB adoption by reference of 8-2- 5 adds additional language specific to Zimmer Paper Products, Incorporated as subpart c);
- (22) 326 IAC 8-3-1 through 8-3-7;
- (23) 326 IAC 8-4-1 through 8-4-5, 8-4-6 (a)(6), (a)(8) and (a)(14) and 8-4-6(b)(1), (b)(3) and 8-4-6c) (In place of 8-4-6(b)(2), which was not adopted, the IAPCB adopted language requiring a pressure relief valve set to release at no less than four and eight-tenths (4.8) Kilo Pascals (seven-tenths (0.7) pounds per square inch)), 8-4-7 except (e), 8-4-8 and 8-4-9;
- (24) 326 IAC 8-5-1 through 8-5-4, 8-5-5 except (a)(3) and (d)(3);
- (25) 326 IAC 8-6-1 and 8-6-2;
- (26) 326 IAC 9-1-1 and 9-1-2;
- (27) 326 IAC 10; (adopted January 8, 2004)
- (28) 326 IAC 11-1-1 through 11-1-2;
- (29) 326 IAC 11-2-1 through 11-2-3;
- (30) 326 IAC 11-3-1 through 11-3-6;
- (31) 326 IAC 14-1-1 through 14-1-4;
- (32) 326 IAC 14-2-1 except 40 CFR 61.145;
- (33) 326 IAC 14-3-1;
- (34) 326 IAC 14-4-1;
- (35) 326 IAC 14-5-1;
- (36) 326 IAC 14-6-1;
- (37) 326 IAC 14-7-1;
- (38) 326 IAC 14-8-1 through 14-8-5;
- (39) 326 IAC 15-1-1, 15-1-2(a)(1), (a)(2) and (a)(8), 15-1-3 and 15-1-4;
- (40) 326 IAC 20;
- (41) 326 IAC 21;
- (42) 326 IAC 21-1-1 (The adoption states that "or the administrator of OES" is added in (b));
- (43) 326 IAC 22-1-1 (The adoption states that "or the administrator of OES" is added in (b)).

**Indiana Department of Environmental Management
Office of Air Quality
and
City of Indianapolis
Office of Environmental Services**

Technical Support Document (TSD) for a Significant Source Modification to a
Part 70 Source

Source Background and Description

Source Name:	International Truck and Engine Corporation
Source Location:	5565 Brookville Road, Indianapolis, IN 46219
County:	Marion
SIC Code:	3714, 3321
Operation Permit No.:	T097-6993-00039
Operation Permit Issuance Date:	Part 70 permit issuance pending
Minor Source Modification No.:	MSM097-12752-00039
Minor Source Mod. Issuance Date:	April 26, 2001
Significant Source Modification No.:	097-18271-00039
Permit Reviewer:	Amanda Hennessy

The Office of Air Quality (OAQ) and Office of Environmental Services (OES) have reviewed a modification application from International Truck and Engine Corporation to reevaluate PM10 and VOC emissions from the following emission units:

- (a) One (1) Casting Line, identified as EU-F18, with a maximum operating capacity of 9 tons of iron poured per hour and 10.75 tons of sand per hour, with pouring emissions controlled by Phase 5 baghouse, exhausting to stacks SV-23 a, b and c, cooling emissions controlled by Phase 3 south baghouse, exhausting to stack SV-20b, and rollout emissions controlled by three (3) baghouses (Phase 8, Phase 10 and Phase 9) and regenerative thermal oxidizer, exhausting through stack SV-26. [from Minor Source Modification MSM097-12752-00039, issued on April 26, 2001];
- (b) One Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, and combusting diesel fuel oil; [from Minor Source Modification MSM097-12752-00039, issued on April 26, 2001];

Existing equipment to be phased out as EU-F18 is phased into operation:

- (c) One (1) M1 mold pouring operation, identified as emission unit EU-F08, constructed in 1957, with a maximum capacity of thirty (30) tons of metal poured per hour, with emissions uncontrolled, and exhausting through stacks SV-18A through SV-18C.
- (d) One (1) M1 casting cooling (Fume Tunnel M1) operation, identified as emission unit EU-F09, constructed in 1957, with a maximum capacity of thirty (30) tons of metal poured per hour, with emissions uncontrolled, and exhausting through stacks SV-19A through SV-19F.
- (e) One (1) molding operation, identified as emission unit EU-F10, constructed in 1976,

consisting of sand coolers (M1 and M3), casting pre-cooling, a storage hopper, and a sand muller (M1), with a maximum capacity of ninety (90) tons of castings per hour and a maximum sand throughput of one hundred fifty (150) tons per hour, with emissions controlled by the Phase III baghouse, and exhausting through stacks SV-20A through SV-20C.

Note: Only the portions of EU-F10 that are related to the M-1 line are affected by this Significant Source Modification. Those portions are: sand coolers and the sand muller.

- (f) One (1) molding operation, identified as emission unit EU-F11, constructed in 1977, consisting of casting punchout, shakers, casting shakeout, vibrating feeders, lump breaker, and a cooling room, with a maximum capacity of thirty (30) tons of metal poured per hour with emissions controlled by the Phase IV baghouse, and exhausting through stacks SV-21A through SV021D.

Note: M-1 Shakeout and M-3 Shakeout take place on emission unit EU-11, therefore, this equipment will remain on site to be used by the M-3 line after the phase out of the M-1 line.

This Significant Source Modification will supersede the previously issued Minor Source Modification 097-12752-00039.

History and Justification for Modification

On September 13, 2000, International Truck and Engine Corporation (ITEC) submitted an application for the construction of a new casting line. On September 25, 2000, ITEC submitted an application for the construction of a new engine test cell. On April 26, 2001, a Minor Source Modification approval was issued for the construction of the new casting line and the new engine test cell. In order to render 326 IAC 2-2 not applicable to this construction, PM-10 emissions from the engine test cell were limited to less than five (5) tons per year and PM-10 emissions from the new casting line were limited to ten (10) tons per year. This modification was to be incorporated into the pending Part 70 Operating Permit. The modification gave the source approval to both construct and operate the new equipment since the Part 70 Operating Permit had not yet been issued. Construction commenced within eighteen (18) months of approval of the minor source modification and has not been suspended for a continuous period of one (1) year or more. Operation of this equipment has not yet begun.

On October 23, 2003, ITEC submitted a letter to the OES requesting to revise the source modification. On April 27, 2004, May 3, 2004 and May 5, 2004, ITEC submitted additional information to modify the application received on October 23, 2003.

The new casting line permitted in MSM 097-12752-00039 is a chemically bonded mold line using a new and advanced technology. At the time of the issuance of MSM 097-12752-00039, emission estimates from casting lines were based on green sand systems. There is limited information on estimating emissions from chemically bonded mold lines. However, information obtained in recent years would indicate that VOC emissions from this chemically bonded mold line would be higher than VOC emissions from a green sand system. Therefore, this permit action, 097-18271-00039 is also updating VOC emission estimates. By updating VOC potential to emit estimates, certain rule applicability also needs to be corrected.

This action will replace the source modification that was issued on April 26, 2001 and will be incorporated into the pending Part 70 Operating Permit. This Significant Source Modification will supersede the previously issued Minor Source Modification 097-12752-00039.

Minor Source Modification 097-12752-00039 also approved construction for one Engine Test Cell (NGDI). This modification does not change any conditions relating to NGDI, except for one typographical error.

Enforcement Issue

The source has the following enforcement actions pending:

- (a) IDEM, OAQ, and OES are aware that the Permittee failed to perform the required quarterly maintenance inspection schedule on Phase I, Phase III, M-3, Phase IV, Phase V, VI, and VII, No. 1 Electric Melt and No.2 Electric Melt baghouses as required by condition 6 of the operating permit issued on March 13, 1995 (950039-01). A total of 55 quarterly baghouse records were not available for review at the time of the inspections. Subsequently, ITEC provided copies of the baghouse records for twenty-nine of the records observed missing during the inspections on June 13, 2002 and June 17, 2002.
- (b) IDEM, OAQ, and OES are also aware that the Permittee failed to record the pressure drop across Phase I Baghouse, as required by Condition 14 of CP 098-0039-01, for 68 days.
- (c) IDEM, OAQ and OES are also aware that the performance test which was to have occurred no later than October 11, 2002 for a new core line (permit number 097-11392-00039) did not occur until June 5, 2003.
- (d) IDEM, OAQ and OES are also aware that the head grinding operation, EU-F06N, was constructed prior to receiving a permit. The head grinding operation began in March 2002. A permit was issued for the head grinding operation (permit number 097-16709-00039) was issued on February 18, 2003.

IDEM, OAQ, and OES are reviewing these matters and will take appropriate action.

Recommendation

The staff recommends to the Administrator that this Significant Source Modification 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 as indicated in the History and Justification for Modification Section of this Technical Support Document.

An application for the purposes of this review was received on October 23, 2003. Additional information was received on January 8, 2004 and April 27, 2004.

Emission Calculations

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

County Attainment Status

The source is located in Marion County.

Pollutant	Status
PM-10	Attainment
SO ₂	Maintenance Attainment
NO ₂	Attainment
1- hour Ozone	Maintenance Attainment
8 - hour Ozone	Basic Nonattainment
CO	Maintenance Attainment
Lead	Maintenance Attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air

Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for nonattainment new source review.

- (b) Marion County has been classified as attainment or unclassifiable for PM-10, SO₂, NOx and CO. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	greater than 100
PM-10	greater than 100
SO ₂	greater than 100
VOC	greater than 100
CO	greater than 100
NOx	greater than 100

- (a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or more and it is one of the 28 listed source categories (secondary metal production plants).
- (b) These emissions are based upon calculations generated for the Part 70 Operating Permit.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Process/facility	VOC Emissions (tons per year)	PM-10 Emissions (tons per year)
-------------------------	--------------------------------------	--

Casting Line (Toaster Line - EU-F18) and M-1 Line (EU-F08 and EU-F09) Limit	56.23	85
Engine Test Cell	5.33	< 5
Contemporaneous net decrease*	(33.48)	(75.18)
(Net) Emissions Increase	28.08	< 14.82
Significant Net Increase Level pursuant to 326 IAC 2-2	40	15
Significant	No	No

* See calculations in Appendix A for more detailed netting analysis.

Potential emissions of SO₂, NO_x, and CO remain below net significant increase levels as demonstrated in Minor Source Modification 097-12752-00039.

PM₁₀ emissions from the new Casting Line (also referred to as the Toaster Line), EU-F18, and from the existing M-1 line, EU-F08, EU-F09 and part of EU-F10, are limited to 85 tons per year, PM₁₀ emissions from Engine Test Cell NGDI are limited to less than five (5) tons per year, and VOC emissions from the Casting Line and the M-1 line are limited to 56.23 tons per year, therefore, the requirements of 326 IAC 2-2 and nonattainment new source review do not apply. This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, PSD requirements and nonattainment new source review do not apply.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.
- (b) On August 29, 2003, the Iron and Steel Foundries National Emission Standard for Hazardous Air Pollutants (NESHAP) final rule was signed. The rule was published on April 22, 2004. EU-F18 is subject to the National Emission Standards for Hazardous Air Pollutants, 326 IAC 14 (40 CFR 63, Subpart EEEEE). Since this emission unit is not the only emission unit located at this source that will be subject to this standard, this source is considered to have already commenced initial startup. A summary of initial requirements of this rule include:
 - (1) Pursuant to 40 CFR 63.7700(a) and 40 CFR 63.7683(b), the Permittee shall comply with the certification requirements in 40 CFR 63.7700(b) or prepare and implement a plan for the selection and inspection of scrap according to the requirements in 40 CFR 63.7700(c) no later than April 22, 2005.
 - (2) Submit an Initial Notification containing the information specified in 40 CFR 63.9(b)(2) no later than August 20, 2004.
 - (3) Submit a Notification of Compliance Status containing the information required by 40 CFR 63.9(h) in accordance with 40 CFR 63.7750(e). The Notification of Compliance Status must be submitted:
 - (A) Before the close of business on the 30th calendar day following completion of the initial compliance demonstration for each initial compliance demonstration that does not include a performance test; and

- (B) Before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in 40 CFR 63.10(d)(2) for each initial compliance demonstration that does include a performance test.
- (4) If required to conduct a performance test, the Permittee shall submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by 40 CFR 63.7(b)(1) and 40 CFR 63.7750(d).
- (5) If required to use a continuous monitoring system (CMS), the Permittee shall submit notifications, if required, as specified in 40 CFR 63.9(g), by the date of submission of the notification of intent to conduct a performance test.
- (6) If required to conduct opacity or visible emissions observations, the Permittee shall submit the anticipated date for conducting the opacity or visible emission observations specified in 40 CFR 63.6(h)(5) in accordance with the appropriate schedule specified in 40 CFR 63.9(f) as required by 40 CFR 63.7750(a).

The Part 70 permit, when issued, will contain a requirement to submit an application for a significant permit modification to IDEM, OAQ and OES to include information from the notification of compliance status in the Title V permit no later than twenty-seven (27) months prior to April 23, 2007. This source modification will include a requirement to submit an application for a significant permit modification if the Part 70 permit is issued before twenty seven (27) months prior to April 23, 2007 or to update their Part 70 permit application according to 326 IAC 2-7-4(b) if the Part 70 permit is not issued prior to twenty seven (27) months prior to April 23, 2007.

- (c) The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the iron and steel foundry except when otherwise specified in 40 CFR 63 Subpart EEEEE. The Permittee must comply with these requirements on and after April 22, 2004.

State Rule Applicability - Individual Facilities

326 IAC 2-2 (Prevention of Significant Deterioration)

In April of 2001, OES issued a Minor Source Modification to ITEC for a new casting Line (EU-F18) and a new Engine Test Cell (NGDI). The new casting Line was to consist of pouring and cooling operations controlled by a newly installed baghouse, casting removal, a mold conveyor and a waste mold storage area. The Minor Source Modification 097-12752-00039 limited PM10 emissions from the new Engine Test Cell to less than five (5) tons per year and limited PM10 emissions from the new casting Line to ten (10) tons per year such that 326 IAC 2-2 was not applicable. (This source is an existing PSD major source, therefore, a net emission increase of fifteen (15) tons per year is considered significant.)

This action intends to replace that Minor Source Modification. As indicated in the History and Justification for Modification section of this technical support document, emission estimates in the April, 2001 modification were made for PM10 from the rollout process and for VOC from the entire process using the best available information at that time. Due to the unique rollout process associated with EU-F18, calculations in MSM 097-12752-00039 did not use the shakeout emission factors for PM10. In addition, the MSM 097-12752-00039 calculations used VOC emission factors from green sand mold lines. With time, understanding of emissions from chemically bonded mold lines has improved, however, emission factors have still not been developed. This increased understanding of emissions indicate that PM10 and VOC emissions from the new casting line, EU-F18, are likely to be higher than was estimated in the April, 2001 permit. Therefore, it appears that

EU-F18 may not be able to meet the limits in MSM 097-12752-00039. Since EU-F18 has not commenced normal production yet and, therefore, has not had actual emissions in excess of any prevention of significant deterioration threshold, ITEC can be issued a revised source modification. As part of this revision, ITEC proposed to phase out an existing line and perform netting of creditable increases and decreases. Under 326 IAC 2-2 and nonattainment new source review, emissions are only creditable if they are enforceable at the time construction of the new units began. However, since EU-F18 has not commenced normal production, the source has not had actual emissions greater than the PSD threshold, and due to the lack of knowledge on emissions at the time of the initial source modification, the US EPA, IDEM, OAQ, and OES are using our discretion for determining injunctive relief and are revising the original source modification. In this revision, ITEC shall use the credits from the phase out of the M-1 line to develop a limit making 326 IAC 2-2 and nonattainment new source review (for VOC) not applicable.

This action revises the Minor Source Modification such that the source shall consider other contemporaneous increases and decreases in a netting process and comply with a lower production limit.

Other increases in PM10 emissions in the creditable time period are: 14 tons per year (CP-098-00039-01), 13.38 tpy (097-11392-00039), and 7.88 tpy (097-16709-00039). The two year average (1999-2000) PM10 emission decreases from the removal of the M-1 line are 110.44 tons per year. A two year period other than the most recent two year period was chosen due to the economic decline of 2001-2002. ITEC believes that 1999-2000 production numbers more accurately reflect baseline production for this source. Therefore, a limit of 85 tons per year combined with these contemporaneous increases and decreases that have taken place at the source makes the net emission increase less than 10 tons per year from the casting Line and the M-1 line (during phase out). The net emission increase of 10 tons per year combined with the less than 5 ton per year limit on the new Engine Test Cell makes the total net emission increase less than 15 tons per year. Other changes in VOC emissions in the creditable time period are: 0.37 tpy (CP 098-0039-01) and 7.04 tpy (097-11392-00039). Emission decreases from the removal of the M-1 line are 40.89 tpy. Therefore, a limit of 56.23 tons per year combined with these contemporaneous increases and decreases makes the net emission increase 22.75 tons per year from the Casting Line and phase out of the M-1 line. The net emission increase of 22.75 tons per year combined with the potential to emit VOC from the new Engine Test Cell (5.33 tpy) makes the total net emission increase less than 40 tons per year.

Potential emissions of all other PSD regulated pollutants are below significant increase levels (see MSM 097-12752-00039). Therefore, 326 IAC 2-2 is not applicable to this modification and nonattainment new source review for VOC is not applicable to this modification.

Since Indiana is now a SIP approved state for PSD this significant source modification is being issued solely under 326 IAC 2-2 and not under both 40 CFR 52.21 and 326 IAC 2-2. Therefore, all references to 40 CFR 52.21 are being removed from this modification.

Since the source will be phasing out the existing M-1 line, the permit will contain two PM10 and two VOC conditions to render 326 IAC 2-2 and nonattainment new source review (for VOC) not applicable. One condition will be applicable during the phase out period and the second condition will be applicable after the M-1 line has been removed. During the phase out period, total emissions from the M-1 line combined with emissions from the new casting line shall not exceed 85 tons per year of PM10 and 56.23 tons of VOC per year. These limits render 326 IAC 2-2 and nonattainment new source review not applicable during the phase out. To make these limits enforceable, a spreadsheet approach for determining compliance will be followed. The Permittee shall keep records of metal poured on each line and sand throughput to the M-1 line. The M-1 metal throughput shall then be multiplied by the emission factor as identified in the permit (until stack testing can be performed - once stack testing has been performed, the throughput shall be multiplied by the emission factor as determined by stack test results) and the M-1 sand throughput

shall be multiplied by the emission factor as identified in the permit. Throughput on EU-F18 shall be multiplied by 2.6 pounds of PM10 per ton and by 1.86 pounds of VOC per ton. M-1 and EU-F18 emissions shall then be added and compliance with the above ton per year limits determined. In addition, VOC emissions from rollout shall not exceed 0.179 pounds per ton and VOC stack emissions from pouring and cooling shall not exceed 1.6 pounds per ton. This condition will be applicable until a complete twelve month period after the shut down of the M-1 line.

After the phase out of the M-1 line, PM10 emissions from the new casting line (EU-F18) shall not exceed 85 tons per year of PM10 and 56.23 tons per year of VOC. After consideration of fugitive emissions from the pouring process, PM10 stack emissions from EU-F18 shall not exceed 83.67 tons per year and VOC stack emissions from EU-F18 shall not exceed 53.81 tons per year.

Cooling and Rollout take place in enclosed areas where capture is expected to be approximately 100%. However, emissions from pouring are drafted into the baghouses via hoods. Fugitive emissions from pouring were determined using 90% capture for PM10. To demonstrate this capture level and to ensure compliance with the limits such that PSD is not applicable, opacity from the pouring process shall be less than 10% opacity. This opacity level shall be demonstrated based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9). Since there are no emission factors or available stack test results for PM10 from a chemically bonded mold line, the emission factor for pouring for green sand operations was utilized as a best estimate. Therefore, $2.04 \text{ lb/ton} \times 60,500 \text{ tons per year} \times (1-.9)/2000$ yields annual fugitive emissions of 6.23 tons per year. VOC is expected to have a higher capture efficiency at 95% for pouring. Using the Harrison Steel stack test results of 1.68 lb/ton, VOC fugitive emissions from pouring are expected to be 2.42 tons per year.

326 IAC 8-1-6 (New Facilities: general reduction requirements)

The potential to emit from the Engine Test Cell (NGDI) is less than 25 tons per year. Therefore, 326 IAC 8-1-6 does not apply to NGDI.

The potential to emit from the casting line, as calculated using the stack test results from Harrison Steel (another chemically bonded mold line located in Indiana), is expected to exceed twenty five (25) tons per year. Therefore, VOC emissions shall be reduced using best available control technology (BACT). BACT for the new casting line (EU-F18) has been determined to be 95% control of rollout VOC emissions by use of an RTO and a production limit of 60,500 tons of metal poured per year. This is equivalent to a limit of 0.179 pounds of VOC from the rollout process per ton of metal poured. See Appendix B of this TSD for a summary of the BACT analysis.

All other State Applicability remains the same as outlined in the Minor Source Modification 097-12752-00039.

Compliance Requirements

Permits issued under 326 IAC 2-7 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 2-7-5. 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.

In Minor Source Modification 097-12752-00039 a number of compliance monitoring conditions applied to the new casting Line. The new line, EU-F18, still has a PM limit of 0.03 grains per dry standard cubic foot and a PM10 limit, such that 326 IAC 2-2 is not applicable. Therefore, none of the compliance monitoring conditions identified in MSM 097-12752-00039 as applicable to EU-F18 will change. The new engine test cell (NGDI) did not have any compliance monitoring conditions.

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached revised Part 70 Significant Source Modification No. 097-18271-00039.

**Indiana Department of Environmental Management
Office of Air Quality
and
City of Indianapolis
Office of Environmental Services**

Addendum to the Technical Support Document
for a Significant Source Modification to a Part 70 Source

Source Name:	International Truck and Engine Corporation
Source Location:	5565 Brookville Road, Indianapolis, IN 46219
County:	Marion
SIC Code:	3714, 3321
Source Modification No.:	097-18271-00039
Permit Reviewer:	Amanda Hennessy

On June 30, 2004, the Office of Air Quality (OAQ) and the Office of Environmental Services (OES) had a notice published in the Indianapolis Star, Indianapolis, Indiana, stating that International Truck and Engine Corporation had applied to modify minor source modification 097-12752-00039 for the construction and operation of a new Casting line (EU-F18). The notice also stated that OAQ and OES proposed to issue a new significant source modification for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On July 27, 2004, International Truck and Engine Corporation submitted comments on the draft significant source modification. Upon further review, the OAQ and OES have decided to make the following revisions to the significant source modification. The TSD will remain as it originally appeared when published. Changes to the permit or technical support material that occur after the permit has published for 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. Bolded language has been added and the language with strikeout has been deleted.

The comments and responses, including changes to the permit, are as follows:

Comment 1:

Section A.2(a) and D.1(a), Emission Unit Summary. In order to address issues related to the stack testing and operation of the toaster line (EU-F18) when other processes are operational we intend to make some modifications to the controls anticipated for the "Toaster Line". These changes include the separation of certain processes, and modifying the collection systems associated with the rollout room, conveyor and waste mold storage room. Specifically, the rollout room processes will now be controlled solely by the Phase 8 baghouse, and the existing Fugitive Dust System will be controlled by a separate collector. Also, the cooling emissions will be controlled by a system separate from the M-1 processes and the "Casa Diablo" system. As such we would request that the process description in Section A.2(a) of the permit be amended to read as follows:

"One Casting Line, identified as EU-F18, with a nominal maximum operating capacity of 9 tons of iron poured per hour and 10.75 tons of sand per hour, with the pouring emissions controlled by the Phase 5 baghouse, exhausting to stacks SV-23a, b and c, cooling emissions controlled by a fabric filter collector, exhausting to stack SV-26, and rollout room, and waste mold storage emissions controlled by the Phase 8 baghouse and regenerative thermal oxidizer, exhausting through stack SV-26."

This change will also require that condition D.1.4(a)(1) be amended to reflect this change in the controls used for the EU-F18 processes. In addition, condition D.1.10 will need to be amended by removing paragraphs (d) and (e) and by modifying paragraph (b) consistent with the above description.

Response to Comment 1:

A.2(a) and D.1 Facility Description have been changed as follows:

One (1) Casting Line, identified as EU-F18, with a ~~maximum~~ **nominal** operating capacity of 9 tons of iron poured per hour and 10.75 tons of sand per hour, with pouring emissions controlled by ~~the~~ **Phase 5** baghouse, exhausting to stacks SV-23 a, b and c, cooling, **rollout room and waste mold storage** emissions controlled by **fabric filter F-1** ~~Phase 3 south baghouse and a regenerative thermal oxidizer~~, exhausting to stack SV-~~2620b~~, and rollout room emissions controlled by ~~three (3) baghouses (Phase 8, Phase 10 and Phase 9) and regenerative thermal oxidizer, exhausting through stack SV-26, constructed in 2001.~~; and

D.1.4 PSD Minor PM-10 Limitations [326 IAC 2-2]

- (a) After the phase out of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:
- (1) PM10 stack emissions from all EU-F18 baghouses (~~Phase 3, Phase 5, Phase 8, fabric filter F-1 Phase 9, and Phase 10~~) combined shall not exceed 2.6 pounds per ton of metal poured on EU-F18.
 - (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.
 - (3) At least 90% of the PM10 emissions generated during pouring shall be captured by ~~a~~ **the Phase 5** Baghouse and controlled such that visible emissions from ~~Stacks SV-23a, b and c~~ **the pouring process** shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).
- (b) During the phase out period of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:
- (1) PM10 stack emissions from EU-F18 shall not exceed 2.6 pounds per ton of metal poured on EU-F18.
 - (2) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.
 - (3) At least 90% of the PM10 emissions generated during pouring on EU-F18 shall be captured **by the Phase 5 Baghouse** such that visible emissions from the pouring process shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).
 - (4) PM10 emissions from the M-1 line and EU-F18 **combined** shall not exceed eighty five (85) tons per twelve month period with compliance determined at the end of each month

D.1.10 Particulate Matter ten (10) microns in aerodynamic diameter (PM-10)

In order to comply with D.1.4:

- (a) Phase 5 Baghouse shall be in operation and controlling emissions from the pouring process at all times when the pouring is taking place.

- (b) ~~Phase 3 South Baghouse~~ **The fabric filter F-1** shall be in operation and controlling emissions from the cooling process **and the rollout room which consists of: casting removal, the mold conveyor, and the waste mold storage area** at all times when cooling **and/or rollout** from EU-F18 is taking place.
- (c) **On and after the initial startup date of EU-F18**, Phase 3 South Baghouse shall be in operation and controlling emissions from ~~the sand muller~~ for the M-1 line (part of EU-F10) **sand handling process** at all times when sand handling is taking place on the M-1 line.
- (d) **On and after the initial startup date of EU-F18**, Phase ~~IV~~ **4** Baghouse shall be in operation and controlling emissions from shakeout when shakeout on the M-1 line is taking place.
- (e) ~~Phase 8 Baghouse shall be in operation and controlling emissions from the casting removal at all times when casting removal is taking place.~~
- (d) ~~Phase 10 Baghouse shall be in operation and controlling emissions from the mold conveyor at all times when the mold conveyor is in operation.~~
- (e) ~~Phase 9 Baghouse shall be in operation and controlling emissions from the waste mold storage area at all times when waste molds are in the storage area.~~

Comment 2:

Section A.2(e) and D.1(e), Emission Unit Summary. We request that the last sentence of note following the description be modified to read: *“Those portions are: the M-1 sand cooler and the M-1 sand muller.”*

Response to Comment 2:

The following change has been made:

One (1) molding operation, identified as emission unit EU-F10, constructed in 1976, consisting of sand coolers (M1 and M3), casting pre-cooling, a storage hopper, and a sand muller (M1), with a maximum capacity of ninety (90) tons of castings per hour and a maximum sand throughput of one hundred fifty (150) tons per hour, with emissions controlled by the Phase III baghouse, and exhausting through stacks SV-20A through SV-20C.

Note: Only the portions of EU-F10 that are related to the M-1 line are affected by this Significant Source Modification. Those portions are: **the M-1 sand coolers, M-1 casting pre-cooling**, and the **M-1 sand muller**.

Comment 3:

Condition C.2, Preventive Maintenance Plan, C.7, Compliance Monitoring, and C.9, Compliance Monitoring Plan. We request that the first sentence of these three conditions be modified to require that the PMP, compliance monitoring requirements and Compliance Monitoring Plan be implemented *“...within 90 days after the issuance of the Operation Permit Validation Letter”*, rather than within 90 days of the issuance of the permit. This will allow us sufficient time to ensure that appropriate maintenance measures are included in the PMP for the new RTO unit after its installation and shakedown period, and to provide a suitable shakedown period for the compliance monitoring requirements.

Response to Comment 3:

Since the limits in this permit are not enforceable until the start up of the new line (EU-F18), the source should have 90 days after startup of EU-F18 to prepare a Preventive Maintenance Plan.

Compliance monitoring and recordkeeping requirements for new units shall be implemented when operation of the equipment begins. Compliance monitoring and recordkeeping requirements for existing emission units shall also be implemented upon startup of the new equipment. Recordkeeping to document compliance with limits that make 326 IAC 2-2 not applicable shall begin upon initial operation of EU-F18.

In addition, particulate matter limitations have been generated (see IDEM and OES Changes) such that 326 IAC 2-2 is not applicable. D.1.20(a) must be updated to require recordkeeping to show compliance with those limitations.

To further clarify, Condition C.7 and D.1.20 have been changed as follows:

C.7 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented **upon initial startup of EU-F18** ~~within ninety (90) days of approval issuance~~. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated **upon initial startup of EU-F18** ~~within ninety (90) days~~, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

and

Office of Environmental Services
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

~~Unless otherwise specified in the approval for the new emission unit(s), c~~Compliance monitoring **and recordkeeping** ~~for new emission units or emission units added through a source modification~~ **the fabric filter F-1 and the Regenerative Thermal Oxidizer** shall be implemented when operation begins.

D.1.20 Record Keeping Requirements

- (a) To document compliance with Conditions **D.1.3(b) and (c)**, D.1.4 and D.1.5 the Permittee shall maintain monthly records complete and sufficient to establish compliance with **the PM limits established in Condition D.1.3(b) and (c)**, the PM-10 limits established in Condition D.1.4, and the VOC limits in D.1.5. These records shall include the amount of metal poured each month on EU-F18 and on M-1 and the amount of sand throughput on the M-1 line.

Implementation of this recordkeeping requirement shall begin upon initial operation of EU-F18.

Compliance Response Plans should be in place at the time compliance monitoring begins, therefore, Condition C.9 has been changed as follows:

C.9 Compliance Response Plan - Preparation, Implementation, Records, and Reports
[326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. If a Permittee is required to have an Operation, Maintenance and Monitoring (OMM) Plan under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions. A CRP shall be submitted to IDEM, OAQ and OES upon request. The CRP for compliance monitoring conditions for the M-1 line, the Phase 5 baghouse and the Phase 3 South Baghouse shall be prepared by the Permittee within ninety (90) days after issuance of significant source modification 097-18271-00039 this permit by the Permittee. The CRP for compliance monitoring conditions for the the fabric filter F-1 and the Regenerative Thermal Oxidizer shall be prepared before initial operation of those control units begins by the Permittee. All CRPs shall be supplemented from time to time by the Permittee, maintained on site, and comprised of:

Comment 4:

Condition C.8, Pressure Gauge Specifications. We request that the “?” in the last sentence of paragraph (b) be replaced by a “±” symbol.

Response to Comment 4:

IDEM and OES agree with the comment that the “?” should be replaced by a “±”. The following change has been made:

C.8 Pressure Gauge Specifications

- (b) Whenever a condition in this permit requires the measurement of a temperature or flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.

Comment 5 and Comment 6:

Condition D.1.5 VOC Emission Limits We request that the VOC emission limit for the rollout and waste mold storage area controlled by the RTO unit and the uncontrolled emissions from the pouring and cooling process be combined as a single limit of 1.779 pounds per ton of metal, rather than separate limits for these processes. This would require combining the limits found in conditions D.1.5(a)(1) and (2); D.1.5(b)(1) and (2); and D.1.5(c)(2) and (3). The combined limits adequately ensure that the permit contains sufficient limits to ensure that the PSD and/or emission offset rules do not apply. In addition, the requirement to meet a 95% control efficiency from the RTO unit ensures that BACT is met. This request is based on the continued uncertainty as to the level of emissions that may be present from the different phases of the production process.

Condition D.1.6(a), (b), and (c) PM10 Emission Limits for M-1 We request that the limits for PM10 for EU-F08, EU-F09 and EU-F11 be expressed as a combined limit of 3.57 pounds per ton of metal, rather than as separate limits. We believe that a combined limit will serve the same purpose as separate limits, and provides flexibility to account for variations in the process. As a result of this change, the equation found in condition D.1.13(b) will also need to be modified to be based on metal throughput only and to reflect a combined limitation on these processes. In addition, the reporting form attached to the permit for reporting the monthly and 12-month rolling total PM10 emissions will need to be modified accordingly.

Response to Comment 5 and 6:

Under the 326 IAC BACT analysis, BACT was determined to be no control for pouring and an RTO for cooling and the rollout area. Therefore, separate limits for these groups of processes must be outlined in the permit. The Permittee has chosen to enclose the cooling portion of the EU-F18 process and route emissions to the regenerative thermal oxidizer originally planned for EU-F18

rollout. This decision makes 326 IAC 8-1-6 BACT for cooling equivalent to 95% control via the regenerative thermal oxidizer. Venting emissions from cooling and rollout to the RTO for 95% control yields a stack BACT limit of 0.98 pounds of VOC per ton of metal. Therefore, Condition D.1.5 must be changed to include a 95% control for emissions from EU-F18 cooling and the new 0.98 pound per ton (excluding fugitive emissions) limit.

Combining the limits in D.1.6(a), (b), and (c) still maintains a federally enforceable limit and, therefore, will still make 326 IAC 2-2 not applicable. Different head types are produced on the M-1 line. Sand throughput will vary based on the type of head being produced. Any ratio generated for sand to metal throughput would vary based on the type of head being produced. Therefore, the limit on sand handling (which is based on sand throughput) cannot be combined with the limit on pouring, cooling, and shakeout (which is based on metal throughput).

In addition, credits generated for particulate matter must also be made enforceable in Condition D.1.6. Therefore, particulate matter limits for the M-1 line have been added. An equation to demonstrate compliance with the particulate matter limits has also been added to Condition D.1.13.

Therefore, the following changes have been made to Condition D.1.5, Condition D.1.6 and Condition D.1.13:

D.1.5 VOC (Volatile Organic Compounds) [326 IAC 2-1.1-5] [326 IAC 2-5.1-3] [326 IAC 8-1-6]

~~(a) After the phase out of the M-1 line, in order to render the requirements of 326 IAC 2-2 and Nonattainment NSR not applicable, the Permittee shall comply with the following requirements:~~

- ~~(1) VOC emissions from the EU-F18 rollout process and stack emissions from EU-F18 pouring and cooling shall not exceed 0.179 pounds per ton of metal poured on EU-F18 from the rollout process.~~
- ~~(2) VOC stack emissions shall not exceed 1.6 pounds per ton of metal poured on EU-F18 from pouring and cooling.~~
- ~~(3) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period with compliance determined at the end of each month.~~

(ba) During the phase out period of the M-1 line, in order to render the requirements of 326 IAC 2-2 and Nonattainment NSR not applicable, the Permittee shall comply with the following requirements:

- (1)** VOC emissions **from the EU-F18 rollout process and stack emissions from EU-F18 pouring and cooling** shall not exceed **0.179 0.98** pounds per ton of metal poured on EU-F18 ~~from the rollout process.~~
- ~~(2) VOC stack emissions shall not exceed 1.6 pounds per ton of metal poured on EU-F18 from pouring and cooling.~~
- (32)** Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period with compliance determined at the end of each month.
- (43)** VOC emissions from the M-1 line and EU-F18 shall not exceed ~~56.23~~ **32.09** tons per twelve month consecutive month period with compliance determined at the end of each month.

During the phase out of the M-1 line, ~~C~~ compliance with D.1.5(a) ~~or (b)~~ and D.1.6 shall limit the net increase of VOC emissions from this modification to less than 40 tons per twelve consecutive month period. This will make the PSD Regulation 326 IAC 2-2 and nonattainment NSR not applicable.

(eb) Pursuant to 326 IAC 8-1-6, the Permittee shall employ Best Available Control Technology (BACT). BACT for EU-F18 has been determined to be:

- (1) Installation and operation of a regenerative thermal oxidizer (RTO) attaining at least 95% control efficiency to control the rollout **and cooling** portions of the process. Rollout consists of casting removal, mold conveyor and waste mold storage. The Permittee must maintain total enclosure, as defined in EPA Method 204, for the rollout process;
- (2) VOC emissions from **cooling and** rollout shall not exceed ~~0.179~~ **0.221** pounds per ton of metal poured;
- (3) **Total VOC stack** emissions from pouring ~~and cooling~~ shall not exceed ~~4.6~~ **0.84** pounds per ton of metal poured; and
- (4) Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with D.1.5(b) and D.1.6 shall also render the PSD Regulation 326 IAC 2-2 and nonattainment NSR not applicable after the phase out of the M-1 line.

D.1.6 PM₁₀, **PM** and VOC (Volatile Organic Compounds) Emission Credits [326 IAC 2-1.1-5] [326 IAC 2-5.1-3]

In order to make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Rules) and Nonattainment NSR not applicable for EU-F18 and NGDI for PM₁₀ and VOC, the emission credits must be made federally enforceable. Therefore, in order to render 326 IAC 2-2 and Nonattainment NSR not applicable, the Permittee shall comply with the following requirements **on and after the initial startup date of EU-F18**:

- (a) PM₁₀ emissions from the M-1 line pouring, **cooling, and the Phase 4 Baghouse controlling shakeout (EU-F08, EU-F09 and EU-F11) combined** shall not exceed ~~2.06~~ **3.572** pounds per ton of metal poured.
- ~~(b) PM₁₀ emissions from M-1 line cooling (EU-F09) shall not exceed 1.4 pounds per ton of metal poured.~~
- ~~(c) PM₁₀ emissions from M-1 line shakeout (EU-F011) shall not exceed 0.112 pounds per ton of metal poured.~~
- (db) PM₁₀ emissions from **the Phase 3 South Baghouse controlling the M-1 line sand system (EU-F10)** shall not exceed 0.027 pounds per ton of sand throughput.
- (c) **PM emissions from the M-1 line pouring, cooling, and the Phase 4 Baghouse controlling shakeout (EU-F08, EU-F09 and EU-F11) combined shall not exceed 5.76 pounds per ton of metal poured.**
- (d) **PM emissions from the Phase 3 South Baghouse controlling the M-1 line sand system (EU-F10) shall not exceed 0.027 pounds per ton of sand throughput.**
- (e) VOC emissions from M-1 line **pouring, cooling and shakeout combined** shall not exceed 1.34 pounds per ton of metal poured ~~from pouring, cooling and shakeout.~~

D.1.13 VOC (Volatile Organic Compounds), PM and Particulate Matter **less than** ten (10) microns in aerodynamic diameter (PM-10) [326 IAC 8-1-6] [326 IAC 2-1.1-5] [326 IAC 2-5.1-3] [326 IAC 2-2]

- (a) During the phase out of the M-1 line, the Permittee shall use the following equation to demonstrate compliance with the tons per year VOC limit in Condition D.1.5(ba)(43):

$$V = [M18 * (A + \del{B} + C)] + [MM * D]$$

- (b) During the phase out of the M-1 line, the Permittee shall use the following equation to demonstrate compliance with the tons per year PM₁₀ limit in Condition D.1.4(b)(4):

$$P = [M18 * (E + F)] + [(MM * G) + (SM * H)]$$

- (c) **During the phase out of the M-1 line, the Permittee shall use the following equation to demonstrate compliance with the tons per year particulate matter limit in Condition D.1.3(c):**

$$PM = [M18 * (I + J)] + [(MM * K) + (SM * L)]$$

Where:

- V = annual VOC emissions (tons per year)
P = annual PM10 emissions (tons per year)
PM= annual PM emissions (tons per year)
M18 = tons of metal poured on EU-18
MM = tons of metal poured on M-1 line
SM= tons of sand through the M-1 line
A = maximum **emission factor for stack** emissions (pounds of VOC/ton of metal poured) emitted from EU-F18 rollout process **and EU-F18 pouring and cooling**: ~~0.479~~ **0.98** or an emission factor determined in the most recent stack tests required by Condition D.1.8
~~B = maximum stack emissions (pounds of VOC/ton of metal poured) emitted from EU-F18 pouring and cooling: 1.6 or an emission factor determined in the most recent stack test required by Condition D.1.8~~
C= maximum **emission factor for** fugitive emissions (pounds of VOC / ton of metal poured) emitted from EU-F18 pouring and cooling: 0.08
D= maximum **emissions factor for** (pounds of VOC / ton of metal poured) emitted from the M-1 line: 1.34 or an emission factor determined in the most recent stack test required by Condition D.1.8
E= maximum **emission factor for** stack emissions (pounds of PM10/ton of metal poured) emitted from EU-F18: 2.6 or an emission factor determined in the most recent stack test required by Condition D.1.8
F= **emission factor for** fugitive emissions (pounds of PM10 / ton of metal poured) emitted from EU-F18 (Permittee is required to attain 90% capture from pouring): ~~(0.4*2.06)~~ **0.206**
G= maximum **emission factor for** emissions (pounds of PM10 / ton of metal poured) emitted from pouring, cooling and shakeout from the M-1 line: 3.572 or an emission factor determined in the most recent stack test required by Condition D.1.8
H= maximum **emission factor for** emissions (pounds of PM10 / ton of ~~metal~~ **sand poured**) emitted from sand handling from the M-1 line: 0.027 or an emission factor determined in the most recent stack test required by Condition D.1.8
I= **maximum emission factor for emissions (pounds of PM/ ton of metal poured) emitted from EU-F18 pouring, cooling, and rollout: 4.6 or an emission factor determined in the most recent stack tests required by Condition D.1.8**
J= **emission factor for fugitive emissions (pounds of PM / ton of metal poured) emitted from EU-F18 (Permittee is required to attain 90% capture from pouring): 0.42**
K= **maximum emission factor for emissions (pounds of PM / ton of metal poured) emitted from pouring, cooling, and shakeout from the M-1 line: 5.76 or an emission factor determined in the most recent stack test required by Condition D.1.8**
L= **maximum emission factor for emissions (pounds of PM / ton of sand) emitted from sand handling from the M-1 line: 0.027 or an emission factor determined in the most recent stack test required by Condition D.1.8**

Comment 7:

Condition D.1.7 Preventive Maintenance Plan, Condition D.1.14, Visible Emission Notations, D.1.15 Parametric Monitoring, and D.1.16 Baghouse Inspections We request that these conditions only refer to EU-F18 and not to the M-1 line. The M-1 line will be regulated separately as part of the Title V permit and having a separate requirement here will likely lead to confusion in implementing the Title V permit.

Response to Comment 7:

International Truck and Engine must be in continuous compliance with the limits outlined in this permit in order to ensure that the requirements of 326 IAC 2-2 and non-attainment new source review do not apply. Emission limits that apply to the M-1 line have been included in this permit in order to create emission credits that allow the new casting line to net out of 326 IAC 2-2 and non-attainment new source review. Therefore, a preventive maintenance plan, visible emission notations, parametric monitoring and baghouse inspections are required for the emission units that comprise the M-1 line. The Title V permit for this source has not yet been issued. Therefore, the requirements will remain in this source modification approval. No change has been made as a result of this comment.

Comment 8:

Condition D.1.8(b), (c), and (d) Testing Requirements Paragraph (b) and (c) of this condition requires that we perform VOC testing on the pouring, cooling, and rollout processes once every 2 ½ years. We request that this condition be modified to require VOC testing on the pouring and cooling process only once to verify the emission levels for this portion of the process. We also request that the testing on the RTO unit be performed once every 5 years rather than once every 2.5 years. We do not believe that testing every 2.5 years is warranted based on the level of emissions expected from this unit and the inclusion of the parametric monitoring to ensure continued effective operation of the unit. Paragraph (d) of this condition requires that we perform VOC testing for the M-1 processes to demonstrate compliance with the VOC limit of 1.34 pounds per ton of metal. This limit is based on the AP-42 factor for these processes and we believe this is a conservative factor based on review of other test results for similar processes. The pouring and cooling emissions from the M-1 line are not controlled and we believe that the testing would be difficult to perform. As such, we request that condition D.1.8(d) be removed from the permit.

Response to Comment 8:

The limits for which the Permittee must perform stack tests are limits such that 326 IAC 2-2 and non-attainment new source review are not applicable and limits determined by 326 IAC 8-1-6 BACT. IDEM and OES do not consider testing once every five years adequate for this source to demonstrate compliance with 326 IAC 8-1-6 BACT and limits such that VOC non-attainment new source review does not apply. IDEM and OES understand that the M-1 limit is based on AP-42 emission factors. However, since this limit must be enforceable, stack testing will be required to demonstrate compliance.

Due to the changes made in Response to Comment 6, D.1.8(b) and (c) should be combined.

Testing under D.1.8(d) must be done for VOC, PM and PM10. Upon further review, this may not be clear as the condition is currently worded. It also may not be clear that all emission units venting to the control devices must be in operation at the time of the stack test. The Permittee must also perform stack tests to demonstrate compliance with the particulate matter limits such that 326 IAC 2-2 does not apply. Condition D.1.8 has been changed as follows:

D.1.8 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

- (b) During the period within 180 days after startup of EU-F18, a performance test shall be conducted on stack emissions from the **pouring, cooling and** rollout processes in order to demonstrate compliance with **the VOC limits in** Condition D.1.5(ab)(1),

- (2), and (3)** (if phase out of the M-1 line is complete); **and D.1.5(b)(1)** (if phase out of the M-1 is not yet complete) ~~and D.1.5(c)(1) and (2)~~. The Permittee shall perform VOC testing utilizing methods as approved by the Commissioner. During the stack test, the Permittee shall monitor and record those parameters required to be measured by Conditions D.1.11 (temperature) and D.1.12 (duct pressure or fan amperage). **Cooling and rollout shall be tested simultaneously**. Testing shall be repeated every two and a half (2.5) years. Testing shall be conducted in accordance with Section C- Performance Testing.
- ~~(c) — During the period within 180 days after startup of EU-F18, a performance test shall be conducted on stack emissions from the pouring and cooling process in order to demonstrate compliance with Condition D.1.5(a)(2) (if phase out of the M-1 line is complete), D.1.5(b)(2) (if phase out of the M-1 line is not yet completed) and D.1.5(c)(3). The Permittee shall perform VOC testing utilizing methods as approved by the Commissioner. Testing shall be repeated every two and a half (2.5) years. Testing shall be conducted in accordance with Section C- Performance Testing.~~
- (c) During the period within 180 days after startup of EU-F18, a performance test shall be conducted in order to demonstrate compliance with Condition D.1.3(b)(1) or D.1.3(c)(1). The Permittee shall perform PM testing on stack emissions from EU-F18 utilizing methods as approved by the Commissioner. All stacks from EU-F18 shall be tested simultaneously. Testing shall be repeated every five (5) years. Testing shall be conducted in accordance with Section C- Performance Testing.**
- ~~(d) During the period within 180 days after issuance of this permit~~ **the initial startup date of EU-F18**, a performance test shall be conducted on emission points from the M-1 line in order to demonstrate compliance with Condition D.1.6. The Permittee shall perform VOC, **PM and PM10** testing utilizing methods as approved by the Commissioner. **PM-10 includes filterable and condensable PM-10. All emission units venting to the control devices and stacks of the M-1 line shall be in operation during the stack test.** Testing shall be conducted in accordance with Section C- Performance Testing.

Comment 9:

Condition D.1.13(c) This condition indicates that we cannot operate either the M-1 Tower and Bucket elevators nor the Block Line Grinders when the EU-F18 pouring process is venting to the Phase 5 baghouse. We do not intend to operate the M-1 tower and bucket elevators when EU-F18 is operating, but we do intend to vent the Block Line Grinders to the baghouse when EU-F18 is operational. We would request that the reference to the block grinders be eliminated from this condition. We believe that we can meet the PM10 emission limitations contained in D.1.4(a)(1) and D.1.4(b)(1) with the block grinders in operation, and would intend to have them operational during the source test for these units. Since the grinding process does not emit VOCs we do not believe that their operation is relevant to the limitations found in Condition D.1.5.

Response to Comment 9:

If the Permittee can demonstrate compliance with all applicable limits for both the M-1 line and EU-F18 pouring while the Block Line Grinders are in operation, there is no need to require that the Block Line Grinders not operate while either M-1 or EU-F18 are in operation. The casting cooling (also referred to as "Casa Diablo") for the M-1 line is intrinsically linked with casting cooling from the M-3 line. The Permittee has indicated that they intend to demonstrate compliance with all applicable limits for the M-1 line while the M-3 line is in operation. This does not require any changes in the permit, but does require the M-3 line to be operating while testing on the M-1 line is taking place. In addition, the Permittee has indicated that there is a damper on the ventilation system going to the Phase 5 Baghouse. Condition D.1.13(c) has been changed as follows:

D.1.13 VOC (Volatile Organic Compounds) and Particulate Matter ten (10) microns in aerodynamic diameter (PM-10) [326 IAC 8-1-6] [326 IAC 2-1.1-5] [326 IAC 2-5.1-3] [326 IAC 2-2]

- ...
- (c) At any time that pouring from EU-F18 is venting to the Phase 5 Baghouse, ~~neither the M-1 tower and bucket elevators nor the Block-Line Grinders shall not be in operation and venting to the Phase 5 Baghouse. At any time that the M-1 tower and bucket elevators are in operation and venting to the Phase 5 Baghouse, neither pouring from EU-F18 nor the Block-Line Grinders shall be in operation and venting to the Phase 5 Baghouse.~~

Comment 10:

Condition D.1.13(d) and (e) Paragraph (d) prohibits the use of the Phase 3 South baghouse to control the Casa Diablo shakers or the M-1 fluid cooler when it is controlling the toaster cooling process. Paragraph (e) prohibits the use of the Phase 8 baghouse to control the Fugitive Dust System whenever it is being used to control the rollout process. As noted in our first comment the Fugitive Dust System, the M-1 processes and the Casa Diablo Shakers will not be controlled by the same systems as the EU-F18 cooling and rollout processes. Therefore, we request that paragraphs (d) and (e) be eliminated from the permit.

Response to Comment 10:

The changes to the collection systems as outlined in comment 1 make Condition D.1.13(d) and Condition D.1.13(e) unnecessary. Condition D.1.13 has been changed as follows:

D.1.13 VOC (Volatile Organic Compounds) and Particulate Matter ten (10) microns in aerodynamic diameter (PM-10) [326 IAC 8-1-6] [326 IAC 2-1.1-5] [326 IAC 2-5.1-3] [326 IAC 2-2]

- ...
- (d) ~~At any time that cooling from EU-F18 is venting to the Phase 3 South Baghouse, neither the Casa Diablo Shakers nor the M-1 fluid cooler shall be in operation and venting to the Phase 3 South Baghouse. At any time that the M-1 fluid cooler is in operation and venting to the Phase 3 South Baghouse, cooling from EU-F18 shall not be in operation and venting to the Phase 3 South Baghouse nor should the Casa Diablo Shakers be operating in conjunction with the M-3 line.~~
- (e) ~~At any time that casting removal (rollover) on EU-F18 is taking place and venting to Phase 8 Baghouse, the Fugitive Dust System shall not be venting to the Phase 8 Baghouse.~~

Comment 11:

Condition D.1.15 Parametric Monitoring We request that the pressure drop range in this paragraph be changed to 2.0 to 10.0 inches of water, consistent with our proposed Title V permit.

Response to Comment 11:

IDEM and OES do not intend to require a pressure drop range different than what is in the proposed Title V permit. Therefore, Condition D.1.15 has been changed as follows:

D.1.15 Parametric Monitoring

On and after the initial startup date of EU-F18, the Permittee shall record the total static pressure drop across each of the baghouses used in conjunction with the pouring, and cooling and rollout processes of EU-F18 (Phase 5 Baghouse and Fabric Filter F-1), and with the sand handling processes of the M-1 line (Phase 3 South Baghouse) and with the M-1 shakeout process (Phase 4 Baghouse), at least once per shift when the processes are in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 2.0 and 7.0 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable

response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

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

Comment 12:

Condition D.1.20 Record Keeping Requirements We request that paragraph (h) be deleted based on our specific comments related to conditions D.1.13(c), (d), and (e). We would also request that the phrase “during normal daylight hours” be added to the end of paragraph (b), consistent with the language in condition D.1.14.

Response to Comment 12:

Due to the changes made in response to comments 9 and 10, Condition D.1.20(h) has been revised to only require recordkeeping of hours of operation for units emitting to the Phase 5 baghouse if the damper on the ventilation system is not in place.

IDEM and OES do not agree with the comment that the phrase “during normal daylight operations when exhausting to the atmosphere” should be added to condition D.1.20(b) to be consistent with Condition D.1.14. Records shall be kept for each shift indicating either the results of the visible emission notation or why the notations were not taken. In addition, visible emission notations are required for stack exhausts from the M-1 line. Therefore, D.1.20(b) should include that records be kept of visible emission notations for stack exhausts from the M-1 line.

Condition D.1.20 has been changed as follows:

D.1.20 Record Keeping Requirements

...
(c) To document compliance with Condition D.1.14, the Permittee shall maintain records of visible emission notations of EU-F18 **and M-1 line** stack exhaust once per shift.

...
(h) To document compliance with D.1.13(c), ~~(d) and (e)~~, **if a damper system, preventing the M-1 tower and bucket elevators and EU-F18 pouring from venting to the Phase 5 baghouse at the same time, is not in place**, the Permittee shall keep a log of dates and hours of operation for each of the following emission units: EU-F18 pouring, ~~EU-F18 cooling, EU-F18 casting removal,~~ **and M-1 tower and bucket elevators, Block Line Grinders, M-1 fluid cooler, Casa Diablo Shakers when operating in conjunction with the M-3 line, and the fugitive dust system**. Hours of operation for the purpose of this condition means time of day (for example: EU-F18 pouring operated from 8 am until 8 pm).

...

Comment 13:

Condition D.2.2 PSD Minor Source Limits We request that the reference to D.1.4(a), (b), and (c) in the last paragraph of this condition be modified to remove the reference to paragraph (c), since there is no paragraph D.1.4(c).

To incorporate limits such that 326 IAC 2-2 does not apply for PM, a PM limit has been added to Condition D.2.2.

Response to Comment 13:

To correct and simplify the reference, the following change has been made:

D.2.2 PSD Minor PM-10 and PM Limitations [326 IAC 2-2]

~~Pursuant to~~ **Such that the requirements of 326 IAC 2-2 are not applicable**, particulate matter emissions less than ten (10) microns in aerodynamic diameter (PM-10),

- (a) PM-10 **and PM** shall be limited to less than 0.0476 pounds per gallon of diesel fuel used and
- (b) 210,000 gallons of diesel fuel input per twelve (12) consecutive month period.

Compliance with D.1.4(a), (b) and (c) and D.2.2(a) & (b) shall limit PM-10 emissions to less than fifteen (15) tons of PM-10 emissions per 12 consecutive month period. **Compliance with D.1.3(b) or (c), D.2.2(a) and (b) and D.1.6 shall limit PM emissions to less than twenty five (25) tons per twelve (12) consecutive month period.** This will make the PSD Regulation 326 IAC 2-2 not applicable.

Upon further review, IDEM and OES have also made the following changes:

IDEM and OES change 1:

The County status line in Condition A.1 has been deleted since it is repetitive and incorrect.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates stationary source which includes a gray iron foundry operation and engine testing and assembly operations

Responsible Official: Plant Manager, Engine Plant and
Plant Manager, Foundry Plant

Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219

Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219

SIC Code: 3714, 3321

County Location: Marion

County Status: ~~Attainment for all criteria pollutants~~ **Nonattainment for Ozone under the 8 hour standard**
Attainment for all other criteria pollutants

Source Status: Part 70 Permit Program
Major Source, under PSD **and nonattainment new source review**;
Major Source, Section 112 of the Clean Air Act
1 of 28 Source Categories
~~Nonattainment for Ozone under the 8 hour standard~~
~~Attainment for all other criteria pollutants~~

IDEM and OES Change 2:

The permit requires the Permittee to measure and keep records daily of duct pressure and fan amperage. IDEM and OES expect the equipment measuring this parameter to be accurate and appropriate. Therefore, Condition C.8 has been changed as follows:

C.8 Pressure Gauge Specifications

- (b) Whenever a condition in this permit requires the measurement of a temperature, **duct pressure, fan amperage** or flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent

(20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading.

IDEM and OES Change 3:

In order to clarify when the permit shield applies for 40 CFR 63, Subparts A and EEEEE the following changes have been made to Conditions D.1.1 and D.1.2:

D.1.1 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR Part 63, Subpart A]

- (b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition-, **except as otherwise provided in this condition. The permit shield applies to Condition D.1.18, National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Notification Requirements.**

D.1.2 National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries [40 CFR Part 63, Subpart EEEEE] [326 IAC 20]

- (a) The affected source, the iron ~~and steel~~ foundry, is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries, (40 CFR 63, Subpart EEEEE, and 326 IAC 20-1-1), effective April 22, 2004. Pursuant to this rule, the Permittee must comply with 40 CFR 63, Subpart EEEEE on and after April 23, 2007, except as provided in paragraph (c), or accept and meet an enforceable HAP emissions limit below the major source threshold prior to April 23, 2007.
- (b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition-, **except as otherwise provided in this condition. The permit shield applies to Condition D.1.18, National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Notification Requirements.**
- (bc) The following emission units identified in this D section comprise the affected source that is subject to 40 CFR 63, Subpart EEEEE: M-1 mold pouring operation (EU-F08) and casting line EU-F18.
- (ed) The definitions of 40 CFR 63, Subpart EEEEE at 40 CFR 63.7765 are applicable to the affected source.
- (de) Pursuant to 40 CFR 63.7700(a) and 40 CFR 63.7683(b), the Permittee shall comply with the certification requirements in 40 CFR 63.7700(b) or prepare and implement a plan for the selection and inspection of scrap according to the requirements in 40 CFR 63.7700(c) no later than April 22, 2005.

IDEM and OES Change 4:

Limits must be established for particulate matter such that 326 IAC 2-2 does not apply. Changes to Conditions D.1.6, D.1.8, D.1.13, D.1.20, and D.2.2 have been made earlier in this document. Changes to Condition D.1.21 are shown in IDEM and OES Change 9. The following changes have been made to Condition D.1.3:

D.1.3 Particulate Matter (PM) [326 IAC 6-1-2(a)] [326 IAC 2-2]

- (a) Pursuant to 326 IAC 6-1-2(a)(Area Particulate Limitations), particulate matter (PM) emissions from EU-F18 shall be limited to 0.03 grain per dry standard cubic foot.

- (b) **After the phase out of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:**
- (1) **PM stack emissions from all EU-F18 processes (Phase 5 Baghouse, and fabric filter F-1) combined shall not exceed 4.6 pounds per ton of metal poured on EU-F18.**
 - (2) **Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.**
 - (3) **At least 90% of the PM emissions generated during pouring shall be captured by the Phase 5 Baghouse and controlled such that visible emissions from the pouring operation shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).**
- (c) **During the phase out period of the M-1 line, in order to render the requirements of 326 IAC 2-2 not applicable, the Permittee shall comply with the following requirements:**
- (1) **PM stack emissions from all EU-F18 processes (Phase 5 Baghouse and fabric filter F-1) shall not exceed 4.6 pounds per ton of metal poured on EU-F18.**
 - (2) **Throughput shall not exceed 60,500 tons of metal poured on EU-F18 per twelve (12) consecutive month period.**
 - (3) **At least 90% of the PM emissions generated during pouring on EU-F18 shall be captured by the Phase 5 Baghouse such that visible emissions from the pouring process shall not exceed 10% opacity based on a six minute average (24 readings taken in accordance with 40 CFR 60, Appendix A, Method 9).**
 - (4) **PM emissions from the M-1 line and EU-F18 combined shall not exceed one hundred fifty two (152) tons per twelve consecutive month period with compliance determined at the end of each month.**

Compliance with D.1.3(b) and (c), D.1.6, and D.2.2 shall limit the net increase of PM emissions from this modification to less than twenty five (25) tons per twelve (12) consecutive month period. This will make 326 IAC 2-2 (PSD) not applicable.

IDEM and OES Change 5:

The requirements outlined in this source modification for the M-1 line are not applicable until the startup of EU-F18. Therefore, the phrase "on and after the initial startup date of EU-F18" has been inserted for each M-1 limit and requirement. This change has been made earlier in this addendum for Conditions D.1.6, D.1.10, D.1.15. In addition, the following changes have been made:

D.1.16 Baghouse Inspections

On and after the initial startup date of EU-F18, An inspection shall be performed each calendar quarter of all bags controlling the processes of EU-F18 and M-1 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 to the indoors. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.14 Visible Emissions Notations

- (a) Visible emission notations of each of the EU-F18 stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. **On and after the initial startup date of EU-F18,** ~~visible~~ emission notations of each of the M-1 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 for each stack.

IDEM and OES Change 6:

The US EPA does not need to receive copies of the initial notifications required under 40 CFR 63, Subpart EEEEE since Indiana has delegation authority for reviewing the notifications. Therefore, Condition D.1.18 has been changed as follows:

D.1.18 National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Notification Requirements [40 CFR 63, Subpart EEEEE]

- (b) The notifications required by paragraph (a) shall be submitted to:

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

and

~~United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604-3590~~

and

Office of Environmental Services
Air Quality Management Section
2700 South Belmont Avenue
Indianapolis, IN 46221

The notifications require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

IDEM and OES Change 7:

To clarify that the Permittee must maintain records of the duct pressure or fan amperage recorded during the most recent stack test, the following change has been made to Condition D.1.20:

D.1.20 Record Keeping Requirements

- (f) To document compliance with Condition D.1.12, the Permittee shall maintain daily records of the duct pressure or fan amperage **and the duct pressure or fan amperage recorded during the most recent stack test.**

IDEM and OES Change 8:

The Permittee must keep records of all inspections prescribed by the Preventive Maintenance Plan. Conditions D.1.20 and D.2.5 have been changed as follows:

D.1.20 Record Keeping Requirements

- (i) **To document compliance with Condition D.1.7 the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.**
- (ij) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.5 Record Keeping Requirements

- (b) **To document compliance with Condition D.2.3, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.**
- (bc) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

IDEM and OES Change 9:

To clarify that there are multiple reporting forms that the Permittee should use to document compliance with D.1.4 and D.1.5, the last sentence in Condition D.1.21(a) has been made plural. The Permittee must also submit information to document compliance with Condition D.1.3(b) and (c), therefore, D.1.3(b) and (c) have been added to the first sentence. In addition for clarity, D.1.21(b) has been changed to state that the notification should be submitted within thirty (30) days after the phase out of the M-1 line is complete. The following changes have been made to Condition D.1.21:

D.1.21 Reporting Requirements

- (a) A quarterly summary of the information to document compliance with Conditions **D.1.3(b) and (c)**, D.1.4 and D.1.5 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The reports submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The permittee shall submit to IDEM, OAQ and OES notification that M-1 phase out is complete within thirty (30) days **after the phase out is complete.**

IDEM and OES Change 10:

To provide additional clarity, emission unit names and control devices have been added to the reporting forms. In addition, a reporting form to demonstrate compliance with the tons per year particulate matter limit during the phase out of the M-1 line has been added. The Table of Contents has been updated to reflect this change.

IDEM and OES Change 11:

The Indianapolis Air Pollution Control Board (IAPCB) has adopted by reference state rules listed in Appendix A of this permit. The version adopted by reference includes all amendments, additions and repeals filed with the Secretary of State through May 10, 2003 and published in the Indiana Register June 1, 2003. Appendix A has been updated to reflect the current adoption by the IAPCB of state rules.

IDEM and OES Change 12:

Condition C.11 Monitoring Data Availability is no longer used in IDEM, OAQ and OES issued permits, therefore it is being removed. Condition C.11 has been removed as follows and all subsequential C conditions have been renumbered. The Table of Contents has been updated to reflect this change.

~~C.11 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]~~

- ~~(a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this approval shall be performed at all times the equipment is operating at normal representative conditions.~~
- ~~(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this approval is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this approval.~~
- ~~(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.~~
- ~~(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.~~
- ~~(e) At its discretion, IDEM and OES may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.~~
- ~~(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.~~

IDEM and OES Change 13:

The Deviation and Compliance Monitoring Report must be submitted quarterly and not semi-annually. The following changes have been made to the Deviation and Compliance Monitoring Report:

SEMI-ANNUAL QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

This report shall be submitted ~~semi-annual~~ **quarterly** based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. ~~Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report.~~ **A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.** Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

IDEM and OES Change 14:

In order to support particulate matter limits such that 326 IAC 2-2 is not applicable, an additional page of calculations (Page 6 of 6) was generated and added to Appendix A of the Technical Support Document.

IDEM and OES Change 15:

Since the VOC emissions from cooling will be routed to the RTO (and this is now BACT), Condition D.1.9 needs to be updated. Condition D.1.9 has been changed as follows:

D.1.9 VOC (Volatile Organic Compounds) [326 IAC 8-1-6] [326 IAC 2-1.1-5] [326 IAC 2-5.1-3]

In order to comply with D.1.5, the RTO for VOC control shall be in operation and controlling emissions from the **cooling and** rollout process at all times that any portion of the **cooling or** rollout process is in operation.

IDEM and OES Change 16:

The following correction has been made in Condition D.1.17:

D.1.17 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business 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) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance ~~Monitoring~~ **Response Plan - Failure to Take Response Steps Preparation, Implementation, Records, and Reports**, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

IDEM and OES Change 17:

The following change has been made to D.1.19 for clarity:

D.1.19 Requirement to Submit a Significant Permit Modification Application or to Update Permit Application [326 IAC 2-7-12][326 IAC 2-7-5] [326 IAC 2-7-4(b)]

- (a) If the Permittee's Part 70 permit is issued prior to **January 23, 2005** ~~twenty seven months prior to April 23, 2007~~, the Permittee shall submit an application for a significant permit modification to IDEM, OAQ and OES to include information regarding which compliance option or options will be chosen in the Part 70 permit.

IDEM and OES Change 18:

The following change has been made to Condition A.4:

A.4 Significant Source Modification [326 IAC 2-7-10.5] [326 IAC 2-7-12]

This Significant Source Modification ~~revises and~~ supercedes the Minor Source Modification 097-12752-00039 issued on April 26, 2001.

IDEM and OES Change 19:

The description of the Engine Test Cell has been updated to show the date of initial construction. A.2(b) and D.2 Facility Description have been changed as follows:

One (1) Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, combusting diesel fuel oil, **and constructed in 2001**.

IDEM and OES Change 19:

The Permittee has informed IDEM and OES that the vibrating feeders and the lump breaker listed as part of EU-F11 are no longer at the source. For clarify, the description of EU-F11 is being modified from a molding operation to a shakeout operation. Section A.2(f) and D.1 Facility Description are being modified as follows:

- (f) One (1) ~~molding~~ **shakeout** operation, identified as emission unit EU-F11, constructed in 1977, consisting of casting punchout, shakers, casting shakeout, ~~vibrating feeders, lump breaker,~~ and a cooling room, with a maximum capacity of thirty (30) tons of metal poured per hour with emissions controlled by the Phase IV baghouse, and exhausting through stacks SV-21A through SV021D.

Note: M-1 ~~Shakeout~~ **casting cooling** and M-3 ~~Shakeout~~ **casting cooling** take place on emission unit EU-11 (**in the cooling room, also referred to as Casa Diablo**), therefore, this equipment will remain on site to be used by the M-3 line after the phase out of the M-1 line. **In addition, the shakers are used for both the M-1 line and the M-3 line, therefore, this equipment will also remain on site to be used by the M-3 line after the phase out of the M-1 line.**

Appendix A: Emission Calculations
Modification Emission Summary

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 097-12752-00039
Revision to Source Mod.: 097-18271-00039
Reviewer: Amanda Hennessy
Date: April-04

	VOC ton/year	PM10 ton/year	PM ton/year
Limited Potential To Emit			
Engine Test Cell	5.33	5	5
EU-F18 Toaster Line Fugitives	2.54	6.23	12.71
EU-F18 Toaster Line	29.55	78.77	139.29
TOTAL for Project	37.42	90	157
Contemporaneous Increases and Decreases	-33.48	-75.18	-132.15
Net Emissions Increase	3.94	14.82	24.85
PSD Significance Level	40	15	25

Appendix A: Emission Calculations
EU-F18

Company Name: International Truck and Engine Corporation
 Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
 Part 70: 097-6993-00039
 Source Mod.: 097-12752-00039
 Revision to Source Mod.: 097-18271-00039
 Reviewer: Amanda Hennessy
 Date: April-04

Compliance Determination for EU-F18

VOC

	Emission Factor* (lb/ton)	Tons of Metal Poured (ton/yr)	% capture***	Fugitive Emissions (tpy)	% Control	Uncontrolled Point** Emissions (tpy)	Controlled Point Emissions (lb/ton)	Controlled Point Emissions (tpy)	Total Emissions (tpy)
Pouring	0.84	60500	90	2.541	0	22.87	0.756	22.87	25.41
Cooling	0.84	60500	100	0	95	25.41	0.042	1.27	
Rollout	3.58	60500	100	0	95	108.30	0.179	5.41	5.41

PM10

	Emission Factor* (lb/ton)	Tons of Metal Poured (ton/yr)	% capture	Fugitive Emissions (tpy)	Total Emissions (tpy)
Pouring Fugitive Emissions	2.06	60500	90	6.2315	6.23

PM

	Emission Factor* (lb/ton)	Tons of Metal Poured (ton/yr)	% capture	Fugitive Emissions (tpy)
Pouring Fugitive Emissions	4.2	60500	90	12.705

* VOC emission factors based on stack test results from another chemically bonded mold line (Harrison Steel located in Attica, Indiana. PM10 and PM emission factors used to determine fugitive emissions is from SCC 304 003-20 for pouring.
 Pouring and cooling were tested combined - for purposes of this permit, it is assumed that 50% of pouring and cooling emissions are generated in each of the steps.

** Uncontrolled Point emissions are determined using the 60,500 ton per year metal poured limit.

*** Cooling is enclosed in a tunnel so capture would be 100%. Pouring is hooded, so capture is expected to be around 90%.

Appendix A: Emission Calculations
 Limited PTE of NGDI

Company Name: International Truck and Engine Corporation
 Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
 Part 70: 097-6993-00039
 Source Mod.: 097-12752-00039
 Revision to Source Mod.: 097-18271-00039
 Reviewer: Amanda Hennessy
 Date: April-04

Heat Input Capacity Gallon equivalent
 MM Btu/yr Gallon/yr

29610.0 210000.0

Emission Factor in lb/MMBtu	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
0.31	0.31	0.29	0.18	0.36	0.08	
Potential Emission in tons/yr	4.59	4.59	4.29	2.66	5.33	1.18

Emission Factor in lb/hp-hr	Pollutant						
	Acetaldehyde	Benzene	Formaldehyde	Napthalene	Toluene	Xylene	Propylene
7.67E-04	9.33E-04	1.18E-03	8.48E-05	4.09E-04	2.85E-04	2.58E-03	
Potential Emission in tons/yr	0.01	0.01	0.02	0.00	0.01	0.00	0.04

Methodology

Maximum capacity = 42322.6 MMBtu per year = 300,000 gallons of diesel fuel at 141,000 BTU/gal heat content = 250,000 engines tested per year

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2 and from Navistar Engine Test Cell stack tests

Emission (tons/yr) = [Heat input rate (MMBtu/yr) x Emission Factor (lb/MMBtu)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Appendix A: Emission Calculations
VOC Emissions

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 097-12752-00039
Revision to Source Mod.: 097-18271-00039
Reviewer: Amanda Hennessy
Date: April-04

Baseline VOC Emissions from M-1 line****			
Year	Tons Produced	2 yr. Avg. tons/yr	VOC Emissions tons VOC/yr
1998	48279		
1999	61212	54745.5	36.68
2000	60849	61030.5	40.89
2001	47616	54232.5	36.34
2002	45372	46494	31.15

Contemporaneous Decreases and Increases			
Permit #	Date	VOC Emissions tons VOC / year	Details
CP-098-0039-01	1998	0.37	new furnace and pre-heater
11392	12/16/1999	7.04	one new core line
15003	11/8/2002	0	two new boilers*****
16709	2/18/2003	negligible	one head grinding / block broaching
18271	pending*	<u>-40.89</u>	removal of M1 line (EU-F08 / EU-F09)
Total Contemporaneous Changes:		-33.48	

VOC Emissions from Toaster Line*****					
Metal Throughput:	60,500	tons per year			
Emission Factor	lb/ton	Pouring	Cooling	Rollout	Total
		0.84	0.84	3.58	5.26
Potential Emissions	tpy	25.41	25.41	108.30	159.12
Limited point emissions	lb/ton	0.756	0.042	0.179	0.98
Limited point emissions	tpy	22.869	1.2705	5.41	29.55
Limited fugitive emissions	lb/ton	0.084	0	0	0.084
Limited fugitive emissions	tpy	2.54	0.00	0	2.54
Total Limited Emissions	lb/ton	0.84	0.042	0.179	1.06
Total Limited Emissions	tpy	25.41	1.2705	5.41	32.10

Compliance Demonstration

This project plus all creditable increases minus creditable decreases must not have a significant emissions increase over previous actuals.

$$32.10 - 33.48 = -1.38$$

40 tons per year is a significant increase*** pursuant to nonattainment new source review. Another emission unit in Source Mod 097-12752-00039 has a potential to emit VOCs of 5.33. 40 minus 5.33 is 34.67. Therefore, an increase in emissions of equal to or greater than 34.67 tpy would be significant. Since -1.38 is less than 34.67, this change is not significant pursuant to 326 IAC 2-2.

** Net Emissions Increase = Previous Actual Emissions plus any other increases and minus any other decreases that are contemporaneous with the change.

*** ITEC is a major source pursuant to 326 IAC 2-2. Therefore, an increase of 40 tons per year is considered significant.

**** Emission Factors used for Netting Analysis: Pouring and Cooling: VOC = 0.14, Shakeout: VOC = 1.2.

Emission Factors are all in pounds of VOC emitted per ton of metal and are from AP-42.

***** the Minor Source Modification for the two boilers permitted in 2002 was revoked via Revocation 097-18919-00039, therefore, potential emissions equal 0.

***** Emission Factors for potential to emit from new Toaster Line are based on stack test results from a chemically bonded mold line in Indiana (Harrison Steel Castings). Potential and limited annual emissions are based on the production limit of 60,500 tons of metal poured per year. The emission factor for pouring and cooling for the new line is 1.68 pounds of VOC per ton of metal. Since cooling on the new line is relatively short, it is assumed that emissions from pouring and cooling are evenly divided between the pouring and cooling processes.

Appendix A: Emission Calculations
PM-10 Emissions

Company Name: International Truck and Engine Corporation
 Address City IN Zip: 5665 Brookville Road, Indianapolis, Indiana 46219
 Part 70: 097-6993-00039
 Source Mod.: 097-12752-00039
 Revision to Source Mod.: 097-18271-00039
 Reviewer: Amanda Hennessy
 Date: April-04

PM-10 Emissions
Netting Analysis****

Year	Tons Produced	2 yr. Avg.	PM10 Emissions
	tons/yr	tons/yr	tons PM10/yr
Metal	1999 61212		
	2000 60849	61030.5	109.00
Sand	1999 106653		
	2000 106387	106520	1.44
Total			110.44

Contemporaneous Decreases and Increases			
Permit #	Date	PM10 Emissions	Details
		tons PM10 / year	
CP-098-0039-01	1998	14	new furnace and pre-heater
11392	12/16/1999	13.38	one new core line
15003	11/8/2002	0	two new boilers*****
16709	2/18/2003	7.88	one head grinding / block broaching
18271	pending*	<u>-110.44</u>	removal of M1 line (EU-F08 / EU-F09)
Total Contemporaneous Changes:		-75.18	

* Removal of EU-F08 and EU-F09 will occur simultaneously with the phase in of the Toaster Line upon approval of this permit.

Limit =	85.0
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Compliance Demonstration

This project plus all creditable increases minus creditable decreases must not have a significant emissions increase over previous actuals.

85 - 75.18 = 9.82**

15 tons per year is a significant increase*** pursuant to 326 IAC 2-2. Another emission unit in Source Mod 097-12752-00039 has a limit on potential PM10 emissions of less than 5. 15-5 is 10. Therefore, an increase in emissions of greater than 10 tpy would be significant. Since 9.98 is less than 10, the limit of 89.9 tons per year makes this change not significant pursuant to 326 IAC 2-2.

** Net Emissions Increase = Previous Actual Emissions plus any other increases and minus any other decreases that are contemporaneous with the change.

*** ITEC is a major source pursuant to 326 IAC 2-2. Therefore, an increase of 15 tons per year is considered significant.

**** Emission Factors used for Netting Analysis: Pouring: PM10 = 2.06, Cooling: PM10=1.4, Shakeout: PM10 = 0.112, Sand System: PM10 = 0.027.

Emission Factors are all in pounds of PM10 emitted per ton of metal (except for sand system emission factor which is in pounds of PM10 emitted per ton of sand) and all are from AP-42.

Pouring SCC: 3 04 003-20. Cooling SCC: 3 04 003-25. Shakeout SCC: 3 04 003-31. Sand System SCC: 3 04 003-50.

Shakeout and Sand System emission factors reflect controls since we are calculating actual emissions.

1999-2000 was chosen as the baseline average since ITEC feels this two year period more accurately reflects baseline levels due to the economic downturn in 2001.

***** the Minor Source Modification for the two boilers permitted in 2002 was revoked via Revocation 097-18919-00039, therefore, potential emissions equal 0.

Appendix A: Emission Calculations
PM Emissions

Company Name: International Truck and Engine Corporation
 Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
 Part 70: 097-6993-00039
 Source Mod.: 097-12752-00039
 Revision to Source Mod.: 097-18271-00039
 Reviewer: Amanda Hennessy
 Date: April-04

PM-10 Emissions
Netting Analysis****

Year	Tons Produced	2 yr. Avg. tons/yr	PM Emissions tons PM/yr
Metal	1999	61212	175.77
	2000	60849	
Sand	1999	106653	1.44
	2000	106387	
Total			177.21

Contemporaneous Decreases and Increases			
Permit #	Date	PM Emissions tons PM / year	Details
CP-098-0039-01	1998	24	new furnace and pre-heater
11392	12/16/1999	13.18	one new core line
15003	11/8/2002	0	two new boilers*****
16709	2/18/2003	7.88	one head grinding / block broaching
18271	pending*	<u>-177.21</u>	removal of M1 line (EU-F08 / EU-F09)
Total Contemporaneous Changes		-132.15	

* Removal of EU-F08 and EU-F09 will occur simultaneously with the phase in of the Toaster Line upon approval of this permit.

Limit =	152.0
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Compliance Demonstration

This project plus all creditable increases minus creditable decreases must not have a significant emissions increase over previous actuals.

152-132.15 19.85**

25 tons per year is a significant increase*** pursuant to 326 IAC 2-2. Another emission unit in Source Mod 097-12752-00039 has a limit on potential PM emissions of less than 5. 25-5 is 20. Therefore, an increase in emissions of greater than 20 tpy would be significant. Since 19.85 is less than 20, the limit of 152 tons per year makes this change not significant pursuant to 326 IAC 2-2.

** Net Emissions Increase = Previous Actual Emissions plus any other increases and minus any other decreases that are contemporaneous with the change.

*** ITEC is a major source pursuant to 326 IAC 2-2. Therefore, an increase of 25 tons per year is considered significant.

**** Emission Factors used for Netting Analysis: Pouring: PM = 4.2, Cooling: PM=1.4, Shakeout: PM = 0.16, Sand System: PM = 0.027.

Emission Factors are all in pounds of PM10 emitted per ton of metal (except for sand system emission factor which is in pounds of PM10 emitted per ton of sand) and all are from AP-42.

Pouring SCC: 3 04 003-20. Cooling SCC: 3 04 003-25. Shakeout SCC: 3 04 003-31. Sand System SCC: 3 04 003-50.

Shakeout and Sand System emission factors reflect controls since we are calculating actual emissions.

1999-2000 was chosen as the baseline average since ITEC feels this two year period more accurately reflects baseline levels due to the economic downturn in 2001.

***** the Minor Source Modification for the two boilers permitted in 2002 was revoked via Revocation 097-18919-00039, therefore, potential emissions equal 0.

Appendix B

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION

Source Background and Description

Source Name:	International Truck and Engine Corporation
Source Location:	5565 Brookville Road, Indianapolis, IN 46219
County:	Marion
SIC Code:	3714, 3321
Significant Source Modification No.:	097-18271-00039
Permit Reviewer:	Amanda Hennessy

Emission Unit EU-F18, the toaster line, has potential VOC emissions greater than 25 tons per year. Therefore, EU-F18 is subject to BACT under 326 IAC 8-1-6.

The Indiana Department of Environmental Management, Office of Air Quality (IDEM, OAQ) and the City of Indianapolis, Office of Environmental Services (OES) conduct the BACT analysis in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

- (a) Identify all potentially available control options;
- (b) Eliminate technically infeasible control options;
- (c) Rank remaining control technologies by control effectiveness;
- (d) Evaluate the most effective controls and document the results; and
- (e) Select BACT.

Also, in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts on the source. Emission reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution thereby protecting public health and the environment.

The City of Indianapolis and the Indiana Department of Environmental Management agreed with ITEC's BACT determination for pouring and cooling and for rollout. This appendix summarizes the BACT analysis.

Pouring

Step 1 – Identify Control Options

The following technologies were evaluated to control VOC emissions:

Regenerative Thermal Oxidizer
Catalytic Incinerator
Flare
Carbon Adsorption, adsorption and condensation

Step 2 – Eliminate technically infeasible control options

Regenerative Thermal Oxidizer (RTO) – An RTO would be considered feasible when the inlet VOC concentration is greater than 20 ppm and when the recommended maximum exhaust flow rate (per the OAQPS Cost Manual) is around 50,000 – 60,000 scfm. The expected VOC concentration (based on another source with a somewhat comparable line's stack test results) will likely be in the 20-100 ppm (as propane) range for pouring and cooling. The pouring process requires an open area and a sufficient air flow rate to achieve adequate capture velocities to control PM emissions. The exhaust from pouring will be directed to the Phase 5 Baghouse and will have a minimum flow rate of 41,485.

Since RTO's are feasible for maximum flow rates around 50,000 – 60,000 scfm, to combine all three portions of the process would result in an exhaust flow rate just over 100,000 scfm. Therefore, it is not feasible to install an RTO to control all three portions of the process.

Since RTO's are feasible for maximum flow rates around 50,000 – 60,000 scfm, to combine emissions from the pouring and cooling portions of the process would result in an exhaust flow rate just over 70,000 scfm. Therefore, due to the locations of the exhaust flow and the exhaust flow rate, it is not feasible to install an RTO to control the pouring and cooling portions of the process.

Since RTO's are feasible for maximum flow rates around 50,000 – 60,000 scfm, to combine emissions from the pouring and rollout portions of the process would result in an exhaust flow rate around 70,000 scfm. Therefore, due to the locations of the exhaust flows and the exhaust flow rate, it is not feasible to install an RTO to control the pouring and rollout portions of the process.

Catalytic Incinerator – A catalytic incinerator would be considered feasible when the inlet VOC concentration is in the 50 – 10,000 ppm range and when the maximum exhaust flow rate is around 50,000 scfm. The expected VOC concentration will likely be in the 20-100 ppm range for pouring and cooling. However, there is insufficient data regarding the speciation of VOCs to properly evaluate the feasibility of a catalytic incinerator. ITEC is unable to predict the speciation of VOCs in the exhaust flow and, therefore, the effectiveness or the feasibility of this type of control could not be determined.

Flare – Flares require a minimum heat content of around 300 Btu/scf. The heat content of the pouring and cooling exhaust is likely to be in the range from zero to 50 Btu/scf. Therefore, a flare is not a feasible control for VOC emissions from pouring.

Carbon Adsorption, adsorption and condensation – These control technologies require VOC concentrations ranging from 700 – 10,000 ppm for carbon adsorption, 250-10,000 ppm for adsorption (scrubbing), and 5,000 – 10,000 ppm for condensation. The expected VOC concentration will likely be in the 20 – 100 ppm range for pouring and cooling. Due to the lack of knowledge on VOC speciation from this operation, concentrating the exhaust to attain a higher concentration is not feasible. In addition, ITEC suspects that exhaust contaminants would poison the carbon bed. Particulate not captured in the baghouse could also lead to plugging of the medium. Therefore, these technologies are not feasible.

Step 3 - Rank remaining control technologies by control effectiveness

In Step 2 one control option was determined to be feasible: Regenerative Thermal Oxidizer (RTO).

Step 4 - Evaluate the most effective controls and document the results

An economic analysis was done for routing pouring emissions to an RTO and is shown in Table 1. This analysis shows that operating an RTO on pouring would cost \$25,375 per ton of VOC controlled and would cost over 1,500,000 to install. A review of other Indiana BACT determinations revealed that no other source has spent this much to control VOCs.

Table 2 demonstrates the results of BACT analysis for other chemically bonded mold lines. Using no control on emissions from pouring is equivalent to previous BACT determinations for similar sources.

Cost Item	Average Cost Factor		Cost (\$)	Basis of Costs	
Direct Costs:					
40000 cfm RTO			\$ 1,024,235	Vendor Quote	
Instruments/controls	included			EPA Cost Manual Table 2.8	
Taxes	0.05		\$ 51,212		
Freight	0.05		\$ 51,212	EPA Cost Manual Table 2.8	
Base Price:			\$ 1,126,659		
Installation costs, direct:					
Foundations/Supports	0.08		included	EPA Cost Manual Table 2.8	
Erection/handling	0.14		included		
Electrical	0.04		included		
Piping	0.02		\$ 22,533		
Insulation	0.01		\$ 11,267		
Painting	0.01		\$ 11,267		
Total Installation Costs:			\$ 45,066		
TOTAL DIRECT COSTS (Base Price + Installation)=			\$ 1,171,725		
Installation costs, indirect:					
Engineering/supervision	0.10		\$ 112,666	EPA Cost Manual Table 2.8	
Construction/field expenses	0.05		\$ 56,333		
Construction fee	0.10		\$ 112,666		
Start-up	0.02		\$ 22,533		
Performance Test			\$ 10,000	Engineering Estimate	
Contingencies	0.03		\$ 33,800	EPA Cost Manual Table 2.8	
TOTAL INDIRECT COSTS =			\$ 347,998		
TOTAL CAPITAL COSTS (Direct + Indirect)=			\$ 1,519,722		
Direct Operating Costs:					
Operator (\$/HR X HRS /YR)	24	hours/year	547.5	\$ 13,140	EPA guidance - 0.5 hour per shift per device
Supervision(15% of labor)				\$ 1,971	EPA Cost Manual
Operating Materials:					
Maintenance Labor	40	hours/year	547.5	\$ 21,900	EPA Guidance (.5 hour/shift/device)
Maintenance Materials (100% of labor)				\$ 21,900	
Replacement parts (as required)	5% of equipment costs			\$ 51,212	
Utilities:					
Electricity (\$/KWHxKWH/yr)	\$.036/kw			\$ 10,932	EPA Cost Manual page 2-43
Gas (\$/10 ³ ft ³ x 10 ³ /yr)	\$7/kCF			\$ 188,677	EPA Cost Manual
TOTAL DIRECT OPERATING COSTS (A)=			\$ 309,732		
Indirect operating (fixed) costs:					
Overhead	60% of O & M labor/materials			\$ 35,347	EPA Cost Manual
Property Tax	1% of capital costs			\$ 15,197	
Insurance	1% of capital costs			\$ 15,197	
Administration	2% of capital costs			\$ 30,394	
Capital Recovery CRF=	0.136	6% for 10 years		\$ 206,682	
TOTAL FIXED COSTS (B)=			\$ 302,818		
TOTAL ANNUALIZED COSTS (A +B minus C)=			\$ 612,550		
Uncontrolled Emissions Rate (tons/year)			25.41		
Overall Control System Efficiency			95.0%		
Controlled Emissions Rate (tons/year)=			1.27		
VOC Emissions Controlled, tons/year			24.14		
Cost (\$/ton)=			\$25,375		

TABLE 1. Pouring RTO Economic Analysis

Company / Location	Year Issued	Process Description	Emission Limits	Control Required	Comments
Brillion Iron Works Brillion, Wisconsin	1997	Automated Line PUCB Molds	1.3% resin content of the molds 8.0 lb VOC per ton metal for the mold line	No Control	
Harrison Steel Castings Attica, Indiana	2002	Floor Molding Polyurethane no bake molds 17 tph steel	0.14 lb/ton for pouring 1.2 lb/ton for shakeout	No Control	Performance Tests indicate that this source is not in compliance with these limits. (Pouring and cooling: 1.68 lb/ton; and Shakeout: 3.58 lb/ton)
International Truck & Engine Corporation Indianapolis, Indiana	Proposed in this analysis	PUCB mold and core process	Proposed: 0.98 lb/ton for stack emissions from pouring, cooling and rollout	RTO on Cooling and Rollout	

Table 2 - Existing BACT Determinations.

Step 5 – Select BACT

At a cost of \$25, 375 per ton of VOC controlled, an RTO is cost prohibitive for this portion of the project.

BACT for the pouring portion of EU-F18 is no control. An emission limit of 0.84 pounds of VOC per ton will be BACT for pouring. Compliance will be determined by a stack test.

This emission limit is based on stack tests from another foundry in Indiana using a similar technology but with a different process setup. The stack test showed uncontrolled emissions of 1.68 pounds of VOC per ton of metal poured from pouring and cooling. Assuming that emissions are split 50/50 between pouring and cooling, uncontrolled emissions from pouring are expected to be around 0.84 pounds of VOC per ton of metal poured.

Cooling

Step 1 – Identify Control Options

The following technologies were evaluated to control VOC emissions from the pouring and cooling processes:

- Regenerative Thermal Oxidizer
- Catalytic Incinerator
- Flare
- Carbon Adsorption, adsorption and condensation

Step 2 – Eliminate technically infeasible control options

Regenerative Thermal Oxidizer (RTO) – An RTO would be considered feasible when the inlet VOC concentration is greater than 20 ppm and when the maximum exhaust flow rate is around 50,000 – 60,000 scfm. The expected VOC concentration (based on another source with a somewhat comparable line's stack test results) will likely be in the 20-100 ppm (as propane) range for pouring and cooling. The exhaust from cooling will be directed to a fabric filter and join with emissions from rollout. Therefore, an RTO on cooling is technically feasible.

Catalytic Incinerator – A catalytic incinerator would be considered feasible when the inlet VOC concentration is in the 50 – 10,000 ppm range and when the maximum exhaust flow rate is around 50,000 scfm. The expected VOC concentration will likely be in the 20-100 ppm range for pouring and cooling. However, there is insufficient data regarding the speciation of VOCs to properly evaluate the feasibility of a catalytic incinerator. ITEC is unable to predict the speciation of VOCs in the exhaust flow and, therefore, the effectiveness or the feasibility of this type of control could not be determined.

Flare – Flares require a minimum heat content of around 300 Btu/scf. The heat content of the pouring and cooling exhaust is likely to be in the range from zero to 50 Btu/scf. Therefore, a flare is not a feasible control for VOC emissions from cooling.

Carbon Adsorption, adsorption and condensation – These control technologies require VOC concentrations ranging from 700 – 10,000 ppm for carbon adsorption, 250-10,000 ppm for adsorption (scrubbing), and 5,000 – 10,000 ppm for condensation. The expected VOC concentration will likely be in the 20 – 100 ppm range for pouring and cooling. Due to the lack of knowledge on VOC speciation from this operation, concentrating the exhaust to attain a higher concentration is not feasible. In addition, ITEC suspects that exhaust contaminants would poison the carbon bed. Particulate not captured in the baghouse could also lead to plugging of the medium. Therefore, these technologies are not feasible.

Step 3 - Rank remaining control technologies by control effectiveness

In Step 2 one control option was determined to be feasible: Regenerative Thermal Oxidizer (RTO). ITEC has chosen to enclose the cooling process and route emissions from cooling to an RTO that will also control VOC emissions from the rollout areas.

Step 4 - Evaluate the most effective controls and document the results

Table 2 above demonstrates the results of BACT analysis for other chemically bonded mold lines. Routing emissions from cooling to an RTO and attaining 95% destruction efficiency is more stringent than previous BACT determinations for similar sources.

Step 5 – Select BACT

BACT for cooling will be 95% control by attaining 100% capture and 95% destruction efficiency through the use of the RTO. This is equivalent to an emission limit of 0.221 pounds per ton of VOC per ton of metal poured from cooling and rollout combined. Compliance will be determined by a stack test and through continuous temperature monitoring. Continuous compliance will be monitored by maintaining duct pressure or fan amperage within a range established by a stack test.

Rollout

Step 1 – Identify Control Options

The following technologies were evaluated to control VOC emissions from the rollout process:

Regenerative Thermal Oxidizer
Catalytic Incinerator

Flare

Carbon Adsorption, adsorption and condensation

Step 2 – Eliminate technically infeasible control options

Regenerative Thermal Oxidizer (RTO) – An RTO would be considered feasible when the inlet VOC concentration is greater than 20 ppm and when the maximum exhaust flow rate is around 50,000 – 60,000 scfm. ITEC has indicated that an RTO is technically feasible.

Catalytic Incinerator – A catalytic incinerator would be considered feasible when the inlet VOC concentration is in the 50 – 10,000 ppm range and when the maximum exhaust flow rate is around 50,000 scfm. As with pouring and cooling, there is insufficient data regarding the speciation of VOCs from the rollout to properly evaluate the feasibility of a catalytic incinerator. This is a new technology with little emission data available. ITEC is unable to predict the speciation of VOCs in the exhaust flow and, therefore, the effectiveness or the feasibility of this type of control is not able to be determined. It is unlikely that this type of control would achieve greater levels of control than an RTO, which has already been determined to be feasible for the rollout process.

Flare – Flares require a minimum heat content of around 300 Btu/scf. The heat content of rollout exhaust is likely to be in the range from zero to 50 Btu/scf. Therefore, a flare is not a feasible control for VOC emissions from rollout.

Carbon Adsorption, adsorption and condensation – These control technologies require VOC concentrations ranging from 700 – 10,000 ppm for carbon adsorption, 250-10,000 ppm for adsorption (scrubbing), and 5,000 – 10,000 ppm for condensation. The expected VOC concentration from rollout exhaust will likely be far below these ranges. Due to the lack of knowledge on VOC speciation from this operation, concentrating the exhaust flow to attain the higher concentration is not feasible. In addition, ITEC suspects that exhaust contaminants would poison the carbon bed. Particulate not captured in the baghouse could also lead to plugging of the medium. Therefore, these technologies are not feasible.

Step 3 - Rank remaining control technologies by control effectiveness

In Step 2, one control option was determined to be feasible: Regenerative Thermal Oxidizer (RTO). An RTO on rollout is expected to reduce VOC emissions by 3.4 pounds per ton or 102.9 tons per year (based on a throughput of 60,500 tons of metal poured per twelve consecutive month period).

Step 4 - Evaluate the most effective controls and document the results

ITEC has proposed the RTO as BACT therefore an economic analysis is not necessary. See Table 2 for a comparison with existing BACT determinations.

Step 5 – Select BACT

For the rollout process, BACT is determined to be installation and operation of an RTO. In order to maximize the effectiveness of the RTO, the rollout process area must meet Method 204 Total Enclosure requirements. The RTO must attain 95% control. The overall stack emission limit for cooling and rollout will be 0.221 pounds per ton with a throughput limit of 60,500 tons of metal poured per twelve (12) consecutive month period. Compliance will be determined by a stack test and through continuous temperature monitoring. Continuous compliance will be monitored by maintaining duct pressure or fan amperage within a range established by a stack test.