

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**INTAT Precision, Inc.
State Road 3 North
Rushville, Indiana 46173**

is hereby authorized to construct
a new gray iron foundry line consisting
of equipment listed in Pages 2 and 3 of this permit.

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

Construction Permit No.: CP-139-8845-00011	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

(a) Charge Handling System (ID# 1000A)

- (1) four (4) scrap bunkers
- (2) one (1) sprue bunker
- (3) one (1) loading crane
- (4) one (1) weigh hopper
- (5) one (1) automated charge car

This process has a maximum capacity of 10 tons of metal per hour and does not have any air pollution control devices;

(b) Melting and Pouring System (ID# 1000)

- (1) two (2) electric induction furnaces
- (2) one (1) electric holding furnace
- (3) two (2) natural gas-fired ladle heaters (ID#s 6600 and 6610), each with a maximum heat input rate of 2 million British Thermal Units per hour

This process has a maximum capacity of 10 tons of metal per hour. This process is attached to a 62,720 acfm baghouse, identified as BH6100, and exhausts through a vent, identified as 6100;

(c) Mold/Casting Cooling System (ID# 2000)

- (1) one (1) disamatic molding machine
- (2) one (1) cooling line
- (3) one (1) vibra drum

This process has a maximum capacity of 10 tons of metal per hour and 70 tons of sand per hour. This process is attached to a 78,400 acfm baghouse, identified as BH6200A, and exhausts through a vent, identified as 6200A;

(d) Casting Shakeout System (ID# 3000)

- (1) one (1) vibrating conveyor
- (2) one (1) vibrating shakeout machine
- (3) one (1) preblast unit
- (4) one (1) blast system

This process has a maximum capacity of 10 tons of metal per hour and 70 tons of sand per hour. This process is attached to a 72,800 acfm baghouse, identified as BH6200B, and exhausts through a vent, identified as 6200B;

(e) Sand Handling System (ID# 4000)

- (1) one (1) muller
- (2) one (1) sand cooler
- (3) various conveyors and screens

This process has a maximum capacity of 70 tons of sand per hour. This process is attached to a 56,560 acfm baghouse, identified as BH6300, and exhausts through a vent, identified as 6300;

(f) Waste Sand Handling System (ID# 7000)

- (1) one (1) sand mill
- (2) one (1) waste sand hopper
- (3) conveying equipment

This process has a maximum capacity of 1.9 tons of sand per hour. This process is attached to a 10,200 acfm baghouse, identified as BH6400, and exhausts through a vent, identified as 6400;

(g) Finishing Operations (ID# 8000)

- (1) various trim presses
- (2) three (3) bench grinders

Each of the three (3) grinding equipment is attached to a 400 acfm fabric filter, identified as FFA, FFB, and FFC, respectively. These fabric filters exhaust directly inside the building;

(h) three (3) sand towers;

(i) one (1) paint booth (ID# 6601) used for maintenance coating operations. This booth has a maximum production rate of 120 parts per hour and coating rate of 0.0034 gallons per part. This paint booth is attached with fabric filters and vents through vents identified as SNP-1 and SNP-2; and

(j) a scrap yard

Construction Conditions

General Construction Conditions

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

Effective Date of the Permit

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

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
 - (e) The Permittee has submitted its Part 70 application (T-139-7531-00011) on December 12, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

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

Preventive Maintenance Plan

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

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

Transfer of Permit

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

Permit Revocation

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

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

Availability of Permit

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

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed on the melting and pouring system, mold castings/cooling system, casting shakeout system, sand handling system, and waste sand handling system for PM within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
- (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.
 - (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
 - (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
 - (d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be taken. A description of these corrective actions shall be submitted to IDE, OAM within thirty (30) days of receipt of the test results. These corrective actions shall be implemented immediately unless notified by IDEM, OAM that they are not acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented. IDEM, OAM reserves the right to utilize enforcement activities to resolve the non-compliant stack test.
 - (e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

Malfunction Condition

8. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):
- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three years

and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.

- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

PSD Minor Source Limit

9. That the total metal melt rate through the two (2) electric induction furnaces shall be limited to 70,000 tons per 12 consecutive month period rolled on a monthly basis. This production limitation is equivalent to PM and PM-10 emissions of 88 tons per 12 consecutive month period for this source modification only. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, shall not apply.

During the first 12 months of operation, the metal melt rate shall be limited such that the total melt rate divided by the 12 months of operation shall not exceed 5,833 tons per month.

Annual Emission Reporting

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

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

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

Opacity Limitations

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

Particulate Allowable Emissions

12. That baghouses BH6100, BH6200A, BH6200B, BH6300, and BH6400 shall be in operation at all times when the melting and pouring system, mold castings/cooling system, casting shakeout system, sand handling system, and waste sand handling system are in operation, respectively, such that the following allowable particulate matter (PM = PM-10) emission rates are not exceeded:

Process	Allowable Emissions (lb/hr)
Melting and Pouring (ID# 1000)	5.1
Mold Castings Cooling (ID# 2000)	6.5
Casting Shakeout (ID# 3000)	6.1
Sand Handling (ID# 4000)	4.8
Waste Sand Handling (ID# 7000)	0.9

Compliance with these limits and operation condition no. 9 shall make the PSD Rules, 326 IAC 2-3, not applicable. Compliance with these limits shall satisfy the requirements of 326 IAC 6-3-2 (Particulate Matter Emission Limitations for Process Operations).

13. That fabric filters FFA, FFB, and FFC shall be in operation at all times when the three (3) bench grinders are in operation, such that the allowable particulate matter (PM and PM-10) emission rate of 0.1 pound per hour for the finishing operations (ID# 8000) is not exceeded. Compliance with this limit shall make the PSD rule not applicable. Compliance with this limit shall also satisfy the requirements of 326 IAC 6-3-2 (Particulate Matter Emission Limitations for Process Operations).

Baghouse Operating Condition

14. That baghouses BH6100, BH6200A, BH6200B, BH6300, and BH6400 shall be in operation at all times when the melting and pouring system, mold castings/cooling system, casting shakeout system, sand handling system, and waste sand handling system are in operation, respectively.
- (a) The Permittee shall take readings of the total static pressure drop across the baghouses, at least once per week. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the following ranges:

Baghouse ID#	Pressure Drop Range (inches of water)
BH6100	1 - 4
BH6200A	2 - 5
BH6200B	2 - 5
BH6300	2 - 5
BH6400	2 - 5

The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.

- (b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
- (c) The gauge employed to take the pressure drop across the baghouses or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within $\pm 2\%$ of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.
- (d) An inspection shall be performed each calendar quarter of the all the baghouses. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.
- (e) In the event that a bag's failure has been observed:
 - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
 - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

15. That visible emission notations of all exhaust to the atmosphere from baghouses BH6100, BH6200A, BH6200B, BH6300, and BH6400 shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80% of the time, the process is in operation, not counting start up or shut down time.
 - (b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
 - (c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
 - (d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.
16. That pursuant to 326 IAC 6-3 (Particulate Matter Emission Limitations for Process Operations):
- (a) The dry filters for particulate matter overspray control shall be in operation at all times when the paint booth (ID# 6601) is in operation.
 - (b) The paint booth shall comply with 326 IAC 6-3-2(c) using the following equation:

$E = 4.10P^{0.67}$ where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)

- (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the filters.
- (d) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Volatile Organic Compound

- 17. That pursuant to 326 IAC 2-1-3(i)(8), records of surface coating quantities and organic solvent contents shall be maintained for a minimum period of 36 months and made available upon request of the Office of Air Management (OAM). Any change or modification which may increase potential emissions to greater than 25 tons of VOC per year or increase actual emissions to greater than fifteen (15) pounds of VOC per day before add-on controls from the paint booth (ID# 6601) covered in this permit shall obtain the proper approval pursuant to 326 IAC 2-1 and 326 IAC 8-2 before such change may occur.

Reporting Requirements

- 18. (a) That a quarterly summary to document compliance with operation permit condition no. 9 shall be submitted to:

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

within thirty (30) calendar days after the end of the quarter being reported in the format attached. These reports shall include the metal melt rate for the current month and for the previous 12 months.

- (b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
 - (i) Postmarked on or before the date it is due; or
 - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.
- (c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (d) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (e) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Open Burning

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

Emergency Reduction Plans

20. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):
- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on December 12, 1996.
 - (b) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM (and local agency), shall supply such a plan.
 - (c) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
 - (d) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
 - (e) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

**Indiana Department of Environmental Management
Office of Air Management
Compliance Data Section
Quarterly Report**

Company Name: INTAT Precision, Inc.
Location: State Road 3 North, Rushville, Indiana 46173
Permit No.: CP 139-8845-00011
Facility: two (2) electric induction furnaces (ID# 1000)
Parameter: total metal melt rate
Limit: 70,000 tons per 12 consecutive month period rolled on a monthly basis

Year: _____

Month	Metal Melt Rate for Current Month (tons)	Metal Melt Rate for Previous 12 Month Period (tons)
Month 1		
Month 2		
Month 3		

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

MALFUNCTION REPORT

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

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

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

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

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

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

COMPANY: _____ PHONE NO. () _____

LOCATION: (CITY AND COUNTY) _____

PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/19____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION:

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

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

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____

(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

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

the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

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

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

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

—

—

**Indiana Department of Environmental Management
Office of Air Management**

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	INTAT Precision, Inc.
Source Location:	State Road 3 North, Rushville, Indiana 46173
County:	Rush County
Construction Permit No.:	CP-139-8845-00011
SIC Code:	3321
Permit Reviewer:	Marco A. Salenda

The Office of Air Management (OAM) has reviewed an application from INTAT Precision, Inc. relating to the construction and operation of a new gray iron foundry line consisting of the following equipment:

(a) Charge Handling System (ID# 1000A)

- (1) four (4) scrap bunkers
- (2) one (1) sprue bunker
- (3) one (1) loading crane
- (4) one (1) weigh hopper
- (5) one (1) automated charge car

This process has a maximum capacity of 10 tons of metal per hour and does not have any air pollution control devices;

(b) Melting and Pouring System (ID# 1000)

- (1) two (2) electric induction furnaces
- (2) one (1) electric holding furnace
- (3) two (2) natural gas-fired ladle heaters (ID#s 6600 and 6610), each with a maximum heat input rate of 2 million British Thermal Units per hour

This process has a maximum capacity of 10 tons of metal per hour. This process is attached to a 62,720 acfm baghouse, identified as BH6100, and exhausts through a vent, identified as 6100;

(c) Mold/Casting Cooling System (ID# 2000)

- (1) one (1) disamatic molding machine
- (2) one (1) cooling line
- (3) one (1) vibra drum

This process has a maximum capacity of 10 tons of metal per hour and 70 tons of sand per hour. This process is attached to a 78,400 acfm baghouse, identified as BH6200A, and exhausts through a vent, identified as 6200A;

(d) Casting Shakeout System (ID# 3000)

- (1) one (1) vibrating conveyor
- (2) one (1) vibrating shakeout machine
- (3) one (1) preblast unit
- (4) one (1) blast system

This process has a maximum capacity of 10 tons of metal per hour and 70 tons of sand per hour. This process is attached to a 72,800 acfm baghouse, identified as BH6200B, and exhausts through a vent, identified as 6200B;

(e) Sand Handling System (ID# 4000)

- (1) one (1) muller
- (2) one (1) sand cooler
- (3) various conveyors and screens

This process has a maximum capacity of 70 tons of sand per hour. This process is attached to a 56,560 acfm baghouse, identified as BH6300, and exhausts through a vent, identified as 6300;

(f) Waste Sand Handling System (ID# 7000)

- (1) one (1) sand mill
- (2) one (1) waste sand hopper
- (3) conveying equipment

This process has a maximum capacity of 1.9 tons of sand per hour. This process is attached to a 10,200 acfm baghouse, identified as BH6400, and exhausts through a vent, identified as 6400;

(g) Finishing Operations (ID# 8000)

- (1) various trim presses
- (2) three (3) bench grinders

Each of the three (3) grinding equipment is attached to a 400 acfm fabric filter, identified as FFA, FFB, and FFC, respectively. These fabric filters exhaust directly inside the building;

(h) three (3) sand towers;

(i) one (1) paint booth (ID# 6601) used for maintenance coating operations. This booth has a maximum production rate of 120 parts per hour and coating rate of 0.0034 gallons per part. This paint booth is attached with fabric filters and vents through vents identified as SNP-1 and SNP-2; and

(j) a scrap yard.

Stack Summary

Vent ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
6100	Melting and Pouring System	110	4.8	62,720	100
6200A	Mold/Casting Cooling System	110	5.2	78,400	90
6200B	Casting Shakeout System	110	5.2	72,800	80
6300	Sand Handling System	108	4.5	56,560	80
6400	Waste Sand Handling System	100	1.9	10,200	80

Recommendation

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

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

An application for the purposes of this review was received on August 5, 1997, with additional information received on August 29, 1997.

Emissions Calculations

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

Total Potential and Allowable Emissions

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

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	896	1973
Particulate Matter (PM10)	873	873
Sulfur Dioxide (SO ₂)	0.9	0.9
Volatile Organic Compounds (VOC)	24.8	24.8
Carbon Monoxide (CO)	0.4	0.4
Nitrogen Oxides (NO _x)	2.2	2.2
Single Hazardous Air Pollutant (HAP)	2.0	2.0
Combination of HAPs	4.2	4.2

- (a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3. See attached spreadsheets for detailed calculations.
- (b) The allowable PM emissions based on the rules cited are less than the potential PM emissions, therefore, the allowable emissions are used for the permitting determination.

- (c) Allowable emissions (as defined in the Indiana Rule) of PM are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Rush County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Rush County has also been classified as attainment or unclassifiable for total suspended particulates (TSP), particulate matter with aerodynamic diameter less than 10 microns (PM10), sulfur dioxide (SO₂), and carbon monoxide (CO). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions
 Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD applicability.

Source Status

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

Pollutant	Emissions (ton/yr)
PM	32.6
PM10	32.6
SO ₂	17.8
VOC	81.1
CO	7.6
NO _x	38.7

- (a) This existing source is **not** a major stationary source because even though it is one of the 28 listed source categories, it does not emit 100 tons per year or greater of any regulated pollutants.
- (b) These emissions were based on the Part 70 application submitted by the company on December 12, 1996.

Proposed Modification

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

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)

Proposed Modification	88	88	1	25	0	2
PSD Threshold Level	100	100	100	100	100	100

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

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-139-7531-00011) application on December 12, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to any of the subject facilities.

There are no New Source Toxics Control 326 IAC 2-1-3.4, (40 CFR Part 63) applicable to any of the subject facilities.

State Rule Applicability

326 IAC 5-1 (Visible Emissions)

Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

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

326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Rule)

The particulate matter (PM) emissions from the foundry operations shall not exceed the following by limiting the metal melt rate to 70,000 tons per 12 consecutive month period rolled on a monthly basis:

Process	Allowable Emissions (lb/hr)
Melting and Pouring (ID# 1000)	4.1
Mold Castings Cooling (ID# 2000)	5.2
Casting Shakeout (ID# 3000)	4.9
Sand Handling (ID# 4000)	3.8
Waste Sand Handling (ID# 7000)	0.7
Finishing Operations (ID# 8000)	0.1

Compliance with these limits makes the PSD rule not applicable. Compliance with these limits will also satisfy the requirements of 326 IAC 6-3-2 (Particulate Matter Emission Limitations for

Process Operations).

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

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

Conclusion

The construction of the subject foundry equipment will be subject to the conditions of the attached proposed **Construction Permit No. CP-139-8845-00011**.

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: INTAT Precision, Inc.
Source Location: State Road 3 North, Rushville, Indiana 46173
County: Rush County
Construction Permit No.: CP 139-8845-00011
SIC Code: 3321
Permit Reviewer: Marco A. Salenda

On October 29, 1997, the Office of Air Management (OAM) had a notice published in the Rushville Republican, Rushville, Indiana, stating that INTAT Precision, Inc. had applied for a construction permit to construct and operate a new gray iron foundry line with control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On December ?, 1997, INTAT Precision, Inc., through Keramida Environmental, Inc., submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows:

Comment 1

The hourly particulate limitations required under operation condition no. 12 - Particulate Allowable Emissions for each of the five (5) processes should be the equivalent of the design outlet grain loading of 0.01 grains per dry standard cubic foot (gr/dscf) of the baghouses, when the five (5) processes are operated at a maximum hourly production of 10 tons of metal, and not the hourly equivalent of 81.9 tons per year needed to avoid PSD.

Response 1

The following are the revised particulate (PM = PM-10) limitations:

Process	Allowable Emissions (lb/hr)
Melting and Pouring (ID# 1000)	5.1
Mold Castings Cooling (ID# 2000)	6.5
Casting Shakeout (ID# 3000)	6.1
Sand Handling (ID# 4000)	4.8
Waste Sand Handling (ID# 7000)	0.9

Compliance with these limits and the production limit of 70,000 tons of metal per year shall make the PSD Rules, 326 IAC 2-3, not applicable.

Comment 2

INTAT Precision, Inc. requests that the visible emissions notation requirement under operation condition no. 15 be deleted from the permit, as it is duplicative of the baghouse parametric monitoring required under operation condition no. 14.

Response 2

IDEM believes the visible emission notations are necessary, in addition to baghouse pressure drop checks, to ensure that the control equipment is operating properly such that the hourly particulate emission limitations under operation condition no. 12 are met. Visible emissions notations are very useful for ensuring that the emissions are not "abnormal" for some reason.

In addition to the changes made due to the above comments, the following changes were also made:

- (1) Operation condition no. 7 - Performance Testing has been revised to clarify that the tests should be performed for PM only since PM is equivalent to PM-10 for this case.
- (2) Operation condition no. 12 - Particulate Allowable Emissions has been revised to clarify that the particulate limitations are for both PM and PM-10 since PM is equivalent to PM-10 for this case.
- (3) Operation condition no. 7(d) has been revised as follows

"Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be ~~implemented~~ **taken. A description of these corrective actions shall be submitted to IDEM, OAM** within thirty (30) days of receipt of the test results. These **corrective** actions shall be implemented immediately unless notified by **IDEM, OAM** that they are **not** acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented. **IDEM, OAM reserves the right to utilize enforcement activities to resolve the non-compliant stack test.**"

Appendix A: Emission Calculations

Company Name: INTAT Precision, Inc.
 Plant Location: State Road 3 North, Rushville, Indiana 46173
 County: Rush County
 Date Reviewed: August, 12, 1997
 Permit Reviewer: Marco A. Salenda
 CP #: 139-8845
 Plt. ID #: 139-00011

I. Potential Emissions Before Controls

Process:	Rate (tons metal/hr)	Pollutant	Ef (lb/ton metal)	Ebc (tons/yr)
Charge Handling (ID# 1000A)	10	PM	0.0	0.00
		PM-10	0.0	0.00
This onyl includes receiving, unloading, and conveying of scrap metal and ingots		SO2	--	0.00
		NOx	--	0.00
		VOC	--	0.00
EPA SCC# 3-04-003-15		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs	--	0.00

Process:	Rate (tons metal/hr)	Pollutant	Ef (lb/ton metal)	Ebc (tons/yr)
Melting - (2) Electric Induction Furnaces (ID# 1000)	10	PM	0.9	39.42
		PM-10	0.86	37.67
EPA SCC# 3-04-003-03		SO2	--	0.00
Max. melt rate = 10 tons/hr		NOx	--	0.00
baghouse BH6100		VOC	--	0.00
		CO	--	0.00
		Lead (HAP)	0.0455	1.99
		Total HAPs	--	0.00

Process:	Rate (tons metal/hr)	Pollutant	Ef (lb/ton metal)	Ebc (tons/yr)
Pouring, Casting (ID# 1000)	10	PM	4.2	183.96
EPA SCC# 3-04-003-20		PM-10	2.06	90.23
baghouse BH6100		SO2	0.02	0.88
		NOx	0.01	0.44
* VOC and total HAPs emissions already accounted for in shakeout process		VOC *	--	0.00
		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs *	--	0.00

Process:	Rate (tons metal/hr)	Pollutant	Ef (lb/ton metal)	Ebc (tons/yr)
Mold/Castings Cooling System (ID# 2000)	10	PM	1.4	61.32
(ID# 2000)		PM-10	1.4	61.32
EPA SCC# 3-04-003-25		SO2	--	0.00
baghouse BH6200A		NOx	--	0.00
* VOC and total HAPs emissions already accounted for in shakeout process		VOC *	--	0.00
		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs *	--	0.00

Process:	Rate (tons metal/hr)	Pollutant	Ef (lb/ton metal)	Ebc (tons/yr)
Casting Shakeout System (ID# 3000)	10	PM	3.2	140.16
EPA SCC# 3-04-003-31		PM-10	2.24	98.11
baghouse BH6200B		SO2	--	0.00
* See separate calculation for total VOC and total HAPs emission factor for pouring, cooling, and shakeout processes.		NOx	--	0.00
		VOC *	0.55	24.16
		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs *	0.05	2.18

Process:	Rate (tons sand/hr)	Pollutant	Ef (lb/ton sand)	Ebc (tons/yr)
Sand Handling System (ID# 4000)	70	PM	3.6	1103.76
EPA SCC# 3-04-003-50		PM-10	0.54	165.56
baghouse BH6300		SO2	--	0.00
		NOx	--	0.00
		VOC	--	0.00
		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs	--	0.00

Process:	Rate (tons sand/hr)	Pollutant	Ef (lb/ton sand)	Ebc (tons/yr)
Waste Sand Handling System (ID# 7000)	1.9	PM	3.6	29.64
		PM-10	0.54	4.45
EPA SCC# 3-04-003-50		SO2	--	0.00
baghouse BH6400		NOx	--	0.00
		VOC	--	0.00
		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs	--	0.00

Process:	Rate (tons metal/hr)	Pollutant	Ef (lb/ton metal)	Ebc (tons/yr)
Grinding/Cleaning Operations (ID# 8000)	5.5	PM	17	409.53
		PM-10	17	409.53
EPA SCC# 3-04-003-40		SO2	--	0.00
Control device: baghouses venting inside the building		NOx	--	0.00
		VOC	--	0.00
		CO	--	0.00
		Lead (HAP)	--	0.00
		Total HAPs	--	0.00

Methodology:

Ef = Uncontrolled Emission Factor from AP-42/FIRE

Ebc = Potential Emission before controls = Rate (units/hr) x Ef(lbs/unit) x 8760 hrs/yr / 2000 lbs/hr

1 lb = 2000 tons

II. Total VOC and HAPs Emission Factor for Pouring, Cooling and Shakeout

A total emission factor for Pouring, Cooling, and Shakeout Processes are calculated based on the formulation found in the article entitled "Calculating Emission Factors for Pouring, Cooling, and Shakeout", by Gary E. Mosher, published in the October 1994 issue of Modern Casting. Since the proposed process does not utilize cores, only VOC and HAPs emissions from the mold materials, which include seacoal, is calculated using the following formula:

$$\begin{aligned}
 \text{Ef,VOC} &= 0.011941 \text{ lbs VOC/lb seacoal} \times \text{pounds of seacoal used per pound of mold} \times \text{pounds of mold used per ton of metal charged} \\
 &= 0.011941 \text{ lbs VOC/lb seacoal} \times 0.0033 \text{ lb seacoal/lb mold} \times 14,000 \text{ lbs mold/ton metal charged} \\
 &= 0.55 \text{ lbs VOC/ton metal charged}
 \end{aligned}$$

$$\begin{aligned}
 \text{Ef,HAPs} &= 0.001076 \text{ lbs VOC/lb seacoal} \times \text{pounds of seacoal used per pound of mold} \times \text{pounds of mold used per ton of metal charged} \\
 &= 0.001076 \text{ lbs VOC/lb seacoal} \times 0.0033 \text{ lb seacoal/lb mold} \times 14,000 \text{ lbs mold/ton metal charged} \\
 &= 0.05 \text{ lbs VOC/ton metal charged}
 \end{aligned}$$

III. Potential Particulate Matter (PM and PM-10) and Lead Emissions After Controls

The controlled particulate emissions (PM and PM-10) are calculated based on the baghouse design grain loading of 0.01 gr/dscf. Given this information and the actual gas flowrate through the individual baghouses, the controlled emissions are calculated as follows:

Step 1: Determination of stack gas flowrate (V std) during standard conditions

Given: V_{act} = actual stack gas flowrate (ft³/min)
 T_{act} = actual stack gas temperature (deg F)
 T_{std} = standard temperature (deg F)

Equation: Idea Gas Law

$$V_{std} = V_{act} \times (T_{std} + 459) / (T_{act} + 459)$$

Step 2: Conversion of 0.01 gr/dscf to lb/hr and tons/yr to determine potential emissions after controls

$$\text{Emissions (lbs/hr)} = 0.01 \text{ (gr/(ft}^3\text{/min))} \times 1 \text{ lb/7000 gr} \times V_{std} \text{ (ft}^3\text{/min)} \times 60 \text{ min/hr}$$

Step 3: Determination of emission factor after controls

$$\text{Ef,ac (lbs/ton metal)} = \text{Emissions (lbs/hr)} / \text{metal charge (tons/hr)}$$

$$\text{Maximum metal charge (tons/hr)} = 10$$

Step 4: Limiting total potential emissions after controls to below 99 tons/yr

Since the total potential PM emissions after controls exceed the PSD threshold of 99 tons/yr, the company has agreed to limit the amount of metal melted to 70,000 tons per consecutive 12-month period rolled on a monthly basis.

$$\text{Limited metal charge (tons/yr)} = 70000$$

Emission Unit: Process	Baghouse Design Parameters				T_std (deg f)	V_std (ft ³ /min)	PM/PM-10 Eac (lb/hr)	PM/PM-10 Ef, ac (lbs/ton metal)	PM/PM-10 Eac (tons/yr)	PM/PM-10 Eac, lim (tons/yr)	Lead Eac, lim (tons/yr)
	ID#	V_act (ft ³ /min)	T_act (deg F)	grain loading (gr/dscf)							
1000a: Charge Handling	na	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00
1000: Melting and Pouring	BH6100	62720	100	0.01	70	59354	5.09	0.51	22.28	17.81	0.16
2000: Mold/Castings Cooling	BH6200A	78400	90	0.01	70	75544	6.48	0.65	28.36	22.66	0.00
3000: Casting Shakeout	BH6200B	72800	80	0.01	70	71449	6.12	0.61	26.82	21.43	0.00
4000: Sand Handling	BH6300	56560	80	0.01	70	55511	4.76	0.48	20.84	16.65	0.00
7000: Waste Sand Handling	BH6400	10200	80	0.01	70	10011	0.86	0.09	3.76	3.00	0.00
8000: Finishing Operations	FFA, FFB, FFC	1200	80	0.01	70	1178	0.10	0.01	0.44	0.35	0.00
TOTAL							23.40	2.34	102.51	81.91	0.16

Note: The potential emissions after controls for SO2, NOx, VOC and CO are equivalent to their potential emissions before controls, since these emissions are uncontrolled.

IV. Allowable PM Emissions In Comparison With Potential PM Emissions

A. The following calculations determine PM compliance with 326 IAC 6-3-2 for process weight rates less than or equal to 30 tons per hour:

$$\text{limit (lb/hr)} = 4.1 \times (P^{0.67})$$

B. The following calculations determine PM compliance with 326 IAC 6-3-2 for process weight rates greater than 30 tons per hour:

$$\text{limit (lb/hr)} = 55.0 \times (P^{0.11}) - 40$$

Process:	Rate, P (tons mat'l/hr)	Allowable PM Emissions (lb/hr)	(tons/yr)	PM/PM-10 Eac, lim (lb/hr)	(tons/yr)	Status
Charge Handling	10	19.2	84.0	0.0	0.0	will comply
Melting and Pouring/Casting System	10	19.2	84.0	4.1	17.8	will comply
Mold/Castings Cooling System	80	49.1	214.9	5.2	22.7	will comply
Casting Shakeout System	80	49.1	214.9	4.9	21.4	will comply
Sand Handling System	70	47.8	209.2	3.8	16.7	will comply
Waste Sand Handling System	1.9	6.3	27.4	0.7	3.0	will comply
Grinding/Cleaning Operations	5.5	12.8	56.3	0.1	0.4	will comply
TOTAL		203.4	890.7	18.7	81.9	

V. Summary of Emissions for Criteria Pollutants (Significant Activities Only)

Pollutant	Ebc (tons/yr)	Eac (tons/yr)	Eac, lim (tons/yr)
PM	1967.8	102.5	81.9
PM-10	866.9	102.5	81.9
SO2	0.9	0.9	0.9
NOx	0.4	0.4	0.4
VOC	24.2	24.2	24.2
CO	0.0	0.0	0.0
Lead	2.0	0.2	0.2
Total HAPs excluding lead	2.2	2.2	2.2

VI. Summary of Emissions for Criteria Pollutants (Insignificant Activities Only)

Pollutant	(tons/yr)
PM	5.6
PM-10	5.6
SO2	0.0
NOx	1.8
VOC	0.6
CO	0.4
Lead	0.0
Total HAPs excluding lead	0.0