

**CONSTRUCTION PERMIT
and MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR MANAGEMENT**

**Nucor Fastener
6730 County Road 60
Saint Joe, Indiana 46785**

(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 permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 033-11203-00038	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.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 permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary nut and bolt manufacturing source.

Authorized Individual: John Harden
Source Address: 6730 County Road 60, Saint Joe, Indiana 46785
Mailing Address: P.O. Box 6100, Saint Joe, Indiana 46785
Phone Number: (219) 337-1600
SIC Code: 3452
County Location: Dekalb
County Status: Attainment for all criteria pollutants
Source Status: Minor Source Operating Permit
Minor Source, under PSD Rules
Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

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

- (a) Seventy-three (73) natural gas fired space heaters, capacity: 8.3 million British thermal units per hour, total.
- (b) Nine (9) natural gas fired air makeup units, capacity: 56.2 million British thermal units per hour, total.
- (c) One (1) natural gas fired boiler, constructed in 1994, using liquid propane gas as a backup fuel, capacity: 9.807 million British thermal units per hour.
- (d) One (1) natural gas fired boiler, constructed in 1994, using liquid propane gas as a backup fuel, capacity: 4.2 million British thermal units per hour.
- (e) Four (4) natural gas fired annealing furnaces, capacity: 27.6 million British thermal unit per hour, total.
- (f) Three (3) natural gas fired annealing furnaces, capacity: 5.94 million British thermal units per hour, each, and 113,400 pounds of metal per batch, each.
- (g) One (1) natural gas fired heat treat furnace, including one (1) belt furnace, one (1) hardening furnace and one (1) draw furnace, total heat input capacity: 18.35 million British thermal units per hour.
- (h) One (1) natural gas fired heat treat furnace, including one (1) belt furnace, one (1) hardening furnace and one (1) draw furnace, total heat input capacity: 7.70 million British thermal units per hour.

- (i) Two (2) natural gas fired heat treat furnaces, including two (2) belt furnaces, two (2) hardening furnaces and two (2) draw furnaces, total heat input capacity: 18.1 million British thermal units per hour.
- (j) One (1) natural gas fired heat treat furnace, including one (1) batch furnace, one (1) hardening furnace and two (2) draw furnaces, total heat input capacity: 7.72 million British thermal units per hour.
- (k) One (1) natural gas fired heat treat furnace, including one (1) batch furnace, two (2) hardening furnaces, five (5) draw furnaces and two (2) washers, total heat input capacity: 4.55 million British thermal units per hour.
- (l) One (1) sulfuric acid pickling facility, exhausting to stack EP63, with an acid recovery system, capacity: 32.4 tons of steel per hour and 175,000 tons of steel per year.
- (m) Twenty-one (21) bolt making machines, including coolant and oil lubricate usage, with bolt making machines emissions controlled by three (3) wet venturi scrubbers, capacity: 27.2 tons of steel per hour, total.
- (n) Six (6) nut forming machines, including coolant usage, capacity: 1.27 tons of steel per hour, 30.4 tons of steel per day and 10,000 tons of steel per year, total.
- (o) One (1) tumble blaster, EP61, exhausting to a baghouse, capacity: 1.27 tons of steel per hour, 30.4 tons of steel per day and 10,000 tons of steel per year.
- (p) Eight (8) bolt and nut formers, using lubricant and cooling oil, equipped with oil mist collection systems, usage: 37,500 gallons of oil per year, total.
- (q) One (1) natural gas fired boiler, identified as EP54, capacity: 8.37 million British thermal units per hour.
- (r) Four (4) hardening and tempering furnace pairs, identified as EP64 through EP67, using pre-wash, quench oil and rust preventative, capacity: 5.8 million British thermal units per hour, each pair.
- (s) Three (3) endothermic gas generators, identified as EP68, capacity: 0.3 million British thermal units per hour, each.
- (t) One (1) wash line, using a maximum of 1,733 gallons of rust preventative per year.
- (u) One (1) wax line, using a maximum of 2,250 gallons of rust preventative per year.

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

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.

B.2 Definitions

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 IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

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

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

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

Pursuant to 326 IAC 2-1.1-9(5)(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.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled "Minor Source Operating Permit", 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).

B.6 Minor Source Operating Permit [326 IAC 2-6.1]

This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1 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.
 - (1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (2) If the Affidavit of Construction does not verify that the facilities covered in this Construction Permit were constructed as proposed in the application, then the Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section prior to beginning operation of the facilities.
- (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) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.
- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1.1-7(Fees).
- (e) Pursuant to 326 IAC 2-6.1-7, the Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. If IDEM, OAM, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied. The operation permit issued shall contain as a minimum the conditions in Section C and Section D of this permit.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

- C.1 PSD and Part 70 Minor Source Status [326 IAC 2-2] [40 CFR 52.21] [326 IAC 2-7]
- (a) The total source potential to emit of each criteria pollutant is less than 250 tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
 - (b) Any change or modification which may increase potential to emit to 250 tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAM prior to making the change.
 - (c) Any change or modification which may increase potential to emit to 10 tons per year of any single hazardous air pollutant, twenty-five (25) tons per year of any combination of hazardous air pollutants, or 100 tons per year of any other regulated pollutant from this source, shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAM prior to making the change.
- C.2 Preventive Maintenance Plan [326 IAC 1-6-3]
- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:
 - (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.
 - (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, OAM, upon request and shall be subject to review and approval by IDEM, OAM. IDEM, OAM, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.
- C.3 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]
- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.
 - (b) Any application requesting an amendment or modification of this permit shall be submitted to:

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

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAM within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.4 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAM, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAM, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAM, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.6 Permit Revocation [326 IAC 2-1-9]

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 this article.

C.7 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 permit:

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

C.8 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.9 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using ambient air quality modeling pursuant to 326 IAC 1-7-4.

Testing Requirements

C.10 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

- (a) Compliance testing on new emissions 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 permit, 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, OAM.

A test protocol, except as provided elsewhere in this permit, 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

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAM, within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.11 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.12 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.13 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
- (1) This condition;
 - (2) The Compliance Determination Requirements in Section D of this permit;
 - (3) The Compliance Monitoring Requirements in Section D of this permit;
 - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
 - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAM upon request and shall be subject to review and approval by IDEM, OAM. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:
 - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
 - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

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- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
 - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that 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 an administrative amendment to the permit, and such request has not been denied or;
 - (3) An automatic measurement was taken when the process was not operating; or
 - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test

- (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 corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (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, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.15 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

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

C.16 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (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 permit 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 permit 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 permit.
- (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 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.

C.17 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (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 kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.18 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Semi-annual Compliance Monitoring Report. Any deviation from the requirements and the date(s) of each deviation must be reported. The Compliance Monitoring Report shall include the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit 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

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit 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, OAM, on or before the date it is due.
- (d) Unless otherwise specified in this permit, any semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
- (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) A malfunction as described in 326 IAC 1-6-2; or
 - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
 - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.19 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Management stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

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

- (d) The notification 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, OAM, on or before the date it is due.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) Seventy-three (73) natural gas fired space heaters, capacity: 8.3 million British thermal units per hour, total.
- (b) Nine (9) natural gas fired air makeup units, capacity: 56.2 million British thermal units per hour, total.
- (c) One (1) natural gas fired boiler, constructed in 1994, using liquid propane gas as a backup fuel, capacity: 9.807 million British thermal units per hour.
- (d) One (1) natural gas fired boiler, constructed in 1994, using liquid propane gas as a backup fuel, capacity: 4.2 million British thermal units per hour.
- (e) Four (4) natural gas fired annealing furnaces, capacity: 27.6 million British thermal unit per hour, total.
- (f) Three (3) natural gas fired annealing furnaces, capacity: 5.94 million British thermal units per hour, each, and 113,400 pounds of metal per batch, each.
- (g) One (1) natural gas fired heat treat furnace, including one (1) belt furnace, one (1) hardening furnace and one (1) draw furnace, total heat input capacity: 18.35 million British thermal units per hour.
- (h) One (1) natural gas fired heat treat furnace, including one (1) belt furnace, one (1) hardening furnace and one (1) draw furnace, total heat input capacity: 7.70 million British thermal units per hour.
- (i) Two (2) natural gas fired heat treat furnaces, including two (2) belt furnaces, two (2) hardening furnaces and two (2) draw furnaces, total heat input capacity: 18.1 million British thermal units per hour.
- (j) One (1) natural gas fired heat treat furnace, including one (1) batch furnace, one (1) hardening furnace and two (2) draw furnaces, total heat input capacity: 7.72 million British thermal units per hour.
- (k) One (1) natural gas fired heat treat furnace, including one (1) batch furnace, two (2) hardening furnaces, five (5) draw furnaces and two (2) washers, total heat input capacity: 4.55 million British thermal units per hour.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-2-4]

- (a) The two (2) boilers, constructed in 1994, shall be limited to PM emissions of 0.55 pound per million British thermal unit. This limitation was computed using the following equation:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

- (b) The requirement from Condition 4 of CP 033-2787-00038, issued on January 28, 1994, requiring that particulate matter emissions from the heating equipment shall comply with 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating), thus limiting particulate matter emissions from all the combustion equipment to 0.31 pounds per million British thermal unit heat input, is not applicable because the requirements of 326 IAC 6-2 are only applicable to the boilers, not to the direct heating units at this source.

D.1.2 Minor Source Operating Permit [326 IAC 2-6]

The requirement from Registration CP 033-10644-00038, issued on April 6, 1999, requiring that any change or modification which may increase the potential nitrogen oxide emissions to 25 tons per year or more from the equipment covered in the registration (sulfuric acid pickling and three (3) annealing furnaces) must be approved by the Office of Air Management before such change may occur, is not applicable because this is a Minor Source Operating Permit issued under 326 IAC 2-6.1.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.1.3 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test these emissions units by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions units are in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.1.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (l) One (1) sulfuric acid pickling facility, exhausting to stack EP63, with an acid recovery system, capacity: 32.4 tons of steel per hour and 175,000 tons of steel per year.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the sulfuric acid pickling shall not exceed 40.6 pounds per hour when operating at a process weight rate of 32.4 tons per hour.

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

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

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

- (b) The requirement from Condition 2 of Exemption 033-10353-00038, issued on January 11, 1999, requiring that, pursuant to 326 IAC 6-3 (Process Operations), the operation of the sulfuric acid pickling facility shall be limited to 30.5 pounds per hour, and inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan, is not applicable because, although the requirements of 326 IAC 6-3 are applicable to the sulfuric acid pickling facility, the allowable PM emissions were computed using a process weight rate obtained by dividing the annual process weight rate by 8,760 hours per year. In actuality, the hourly process weight rate can be higher than that, and the allowable emissions in (a) of this condition are computed using the maximum hourly process weight rate. A Preventive Maintenance Plan is not required for this facility because the control device is not required by a rule and the actual potential emissions are less than 25 tons per year.

D.2.2 Minor Source Operating Permit [326 IAC 2-6]

The requirement from Exemption 033-10353-00038, issued on January 11, 1999, requiring that any change or modification which may increase the particulate matter to 5 tons per year or more from the equipment covered in the exemption (sulfuric acid pickling and three (3) annealing furnaces) must be approved by the Office of Air Management before such change may occur, is not applicable because this is a Minor Source Operating Permit issued under 326 IAC 2-6.1.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.2.3 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test this emissions unit by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (m) Twenty-one (21) bolt making machines, including coolant and oil lubricate usage, with bolt making machines emissions controlled by three (3) wet venturi scrubbers, capacity: 27.2 tons of steel per hour, total.
- (n) Six (6) nut forming machines, including coolant usage, capacity: 1.27 tons of steel per hour, 30.4 tons of steel per day and 10,000 tons of steel per year, total.
- (o) One (1) tumble blaster, EP61, exhausting to a baghouse, capacity: 1.27 tons of steel per hour, 30.4 tons of steel per day and 10,000 tons of steel per year.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.3.1 Particulate Matter (PM) [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the twenty-one (21) bolt making machines shall not exceed 37.5 pounds per hour when operating at a process weight rate of 27.2 tons per hour.
- (b) Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the six (6) nut forming machines shall not exceed 4.81 pounds per hour when operating at a process weight rate of 1.27 tons per hour.
- (c) Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the tumble blaster shall not exceed 4.81 pounds per hour when operating at a process weight rate of 1.27 tons per hour.

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

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

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

- (d) The requirement from Condition 5 of CP 033-2787-00038, issued on January 28, 1994, requiring that particulate matter emissions will be considered in compliance with 326 IAC 6-3 provided that visible emissions do not exceed 10% opacity and PM emissions shall be limited to 0.057 grains per actual cubic feet (gr/acf) with the actual gas flow rate of 59,880 actual cubic feet per minute (acfm) for the baghouse collector for the bolt shotblasting operation, is not applicable because, as a result of some shotblasting being removed, the control device is not required in order for the tumble blasting to comply with 326 IAC 6-3-2.

D.3.2 Minor Source Operating Permit [326 IAC 2-6]

The requirement from Exemption 033-3780-00022, issued on July 26, 1994, requiring that any change or modification which may increase the allowable emissions to more than 15 pounds per day of VOC and 25 pounds per day of particulate matter from the equipment covered under the letter (six (6) nut forming machines) must be approved by the Office of Air Management before such change may occur, is not applicable because this is a Minor Source Operating Permit issued under

326 IAC 2-6.1.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.3.3 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test these emissions units by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions units are in compliance. If testing is required by IDEM, compliance with the PM limits specified in Condition D.3.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (p) Eight (8) bolt and nut formers, using lubricant and cooling oil, equipped with oil mist collection systems, usage: 37,500 gallons of oil per year.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.4.1 Particulate Matter Limitation (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the eight (8) bolt and nut formers shall not exceed 12.5 pounds per hour when operating at a process weight rate of 5.25 tons per hour.

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

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

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

D.4.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for these emissions units and their control devices.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.4.3 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test this emissions unit by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.4.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.4.4 Particulate Matter (PM)

The oil mist collection systems for PM control shall be in operation at all times when the nut and bolt forming line is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.4.5 Visible Emissions Notations

- (a) Daily visible emission notations of the eight (8) nut and bolt formers' stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.4.6 Record Keeping Requirements

- (a) To document compliance with Condition D.4.5, the Permittee shall maintain records of daily visible emission notations of the eight (8) nut and bolt formers' stack exhaust.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (q) One (1) natural gas fired boiler, identified as EP54, capacity: 8.37 million British thermal units per hour.
- (r) Four (4) hardening and tempering furnace pairs, identified as EP64 through EP67, using pre-wash, quench oil and rust preventative, capacity: 5.8 million British thermal units per hour, each pair.
- (s) Three (3) endothermic gas generators, identified as EP68, capacity: 0.3 million British thermal units per hour, each.
- (t) One (1) wash line, using a maximum of 1,733 gallons of rust preventative per year.
- (u) One (1) wax line, using a maximum of 2,250 gallons of rust preventative per year.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

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

The one (1) boiler shall be limited to PM emissions of 0.48 pound per million British thermal unit. This limitation was computed using the following equation:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

Compliance Determination Requirement [326 IAC 2-1.1-11]

D.5.2 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test these emissions units by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions units are in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.5.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

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 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES ?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. 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: _____ Nucor Fastener _____ PHONE NO. : _____ (219) 337-1600
LOCATION: (CITY AND COUNTY) _____ Saint Joe / DeKalb _____
PERMIT NO. _____ 033-11203 _____ AFS PLANT ID: _____ 033-00038 _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: _____ / _____ / 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE _____ / _____ / 20____ _____ 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: _____

*SEE PAGE 2

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. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

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.

* **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
COMPLIANCE DATA SECTION**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Nucor Fastener
Address:	6730 County Road 60
City:	Saint Joe, Indiana 46785
Phone #:	(219) 337-1600
MSOP #:	033-11203-00038

I hereby certify that Nucor Fastener is still in operation.
 no longer in operation.

I hereby certify that Nucor Fastener is in compliance with the requirements of MSOP 033-11203-00038.
 not in compliance with the requirements of MSOP 033-11203-00038.

Authorized Individual (typed):	John Harden
Title:	
Signature:	
Date:	

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT
 SEMI-ANNUAL COMPLIANCE MONITORING REPORT**

Source Name: Nucor Fastener
 Source Address: 6730 County Road 60, Saint Joe, Indiana 46785
 Mailing Address: P.O. Box 6100, Saint Joe, Indiana 46785
 Operation Permit No.: MSOP 033-11203-00038

Months: _____ to _____ Year: _____

This report is an affirmation that the source has met all the compliance monitoring requirements stated in this permit. This report shall be submitted semi-annually. Any deviation from the compliance monitoring requirements and the date(s) of each deviation must be reported. Additional pages may be attached if necessary. This form can be supplemented by attaching the Emergency/Deviation Occurrence Report. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD.

Compliance Monitoring Requirement (e.g. Permit Condition D.1.3)	Number of Deviations	Date of each Deviation

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

**Technical Support Document (TSD) for a New Source Construction and
Minor Source Operating Permit**

Source Background and Description

Source Name:	Nucor Fastener
Source Location:	6730 County Road 60, Saint Joe, Indiana 46785
County:	Dekalb
SIC Code:	3452
Operation Permit No.:	MSOP 033-11203-00038
Permit Reviewer:	CarrieAnn Ortolani

The Office of Air Management (OAM) has reviewed an application from Nucor Fastener relating to the operation of a nut and bolt manufacturing source and the construction and operation of new proposed emission units.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Seventy-three (73) natural gas fired space heaters, capacity: 8.3 million British thermal units per hour, total.
- (b) Nine (9) natural gas fired air makeup units, capacity: 56.2 million British thermal units per hour, total.
- (c) One (1) natural gas fired boiler, constructed in 1994, using liquid propane gas as a backup fuel, capacity: 9.807 million British thermal units per hour.
- (d) One (1) natural gas fired boiler, constructed in 1994, using liquid propane gas as a backup fuel, capacity: 4.2 million British thermal units per hour.
- (e) Four (4) natural gas fired annealing furnaces, capacity: 27.6 million British thermal unit per hour, total.
- (f) Three (3) natural gas fired annealing furnaces, capacity: 5.94 million British thermal units per hour, each, and 113,400 pounds of metal per batch, each.
- (g) One (1) natural gas fired heat treat furnace, including one (1) belt furnace, one (1) hardening furnace and one (1) draw furnace, total heat input capacity: 18.35 million British thermal units per hour.
- (h) One (1) natural gas fired heat treat furnace, including one (1) belt furnace, one (1) hardening furnace and one (1) draw furnace, total heat input capacity: 7.70 million British thermal units per hour.

- (i) Two (2) natural gas fired heat treat furnaces, including two (2) belt furnaces, two (2) hardening furnaces and two (2) draw furnaces, total heat input capacity: 18.1 million British thermal units per hour.
- (j) One (1) natural gas fired heat treat furnace, including one (1) batch furnace, one (1) hardening furnace and two (2) draw furnaces, total heat input capacity: 7.72 million British thermal units per hour.
- (k) One (1) natural gas fired heat treat furnace, including one (1) batch furnace, two (2) hardening furnaces, five (5) draw furnaces and two (2) washers, total heat input capacity: 4.55 million British thermal units per hour.
- (l) One (1) sulfuric acid pickling facility, exhausting to stack EP62, with an acid recovery system, capacity: 32.4 tons of steel per hour and 175,000 tons of steel per year.
- (m) Twenty-one (21) bolt making machines, including coolant and oil lubricate usage, with bolt making machines emissions controlled by three (3) wet venturi scrubbers, capacity: 27.2 tons of steel per hour, total.
- (n) Six (6) nut forming machines, including coolant usage, capacity: 1.27 tons of steel per hour, 30.4 tons of steel per day and 10,000 tons of steel per year, total.
- (o) One (1) tumble blaster, EP61, exhausting to a baghouse, capacity: 1.27 tons of steel per hour, 30.4 tons of steel per day and 10,000 tons of steel per year.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment

The application includes information relating to the construction and operation of the following equipment:

- (p) Eight (8) bolt and nut formers, using lubricant and cooling oil, equipped with oil mist collection systems, usage: 37,500 gallons of oil per year, total.
- (q) One (1) natural gas fired boiler, identified as EP54, capacity: 8.37 million British thermal units per hour.
- (r) Four (4) hardening and tempering furnace pairs, identified as EP64 through EP67, using pre-wash, quench oil and rust preventative, capacity: 5.8 million British thermal units per hour, each pair.
- (s) Three (3) endothermic gas generators, identified as EP68, capacity: 0.3 million British thermal units per hour, each.
- (t) One (1) wash line, using a maximum of 1,733 gallons of rust preventative per year.
- (u) One (1) wax line, using a maximum of 2,250 gallons of rust preventative per year.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) CP 033-2787-00038, issued on January 28, 1994;
- (b) Addendum to CP 033-2787, issued on February 18, 1994;
- (c) Exemption 033-3780-00022, issued on July 26, 1994;
- (d) Exemption 033-10353-00038, issued on January 11, 1999;
- (e) Amendment to CP 033-2787-00038, issued on January 22, 1999; and
- (f) Registration CP 033-10644-00038, issued on April 6, 1999.

All conditions from previous approvals were incorporated into this permit except the following:

- (a) CP 033-2787-00038, issued on January 28, 1994

Condition 4: That particulate matter emissions from the heating equipment shall comply with 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating). Particulate matter emissions from all the combustion equipment shall be limited to 0.31 pounds per million British thermal unit heat input, pursuant to that rule.

Reason not incorporated: The requirements of 326 IAC 6-2 are only applicable to the boilers, not to the direct heating units at this source. The 326 IAC 6-2 limitations for the boilers are computed in this document and are included in the permit.

- (b) CP 033-2787-00038, issued on January 28, 1994

Condition 5: That particulate matter emissions will be considered in compliance with 326 IAC 6-3 provided that visible emissions do not exceed 10% opacity. PM emissions shall be limited to 0.057 grains per actual cubic feet (gr/acf) with the actual gas flow rate of 59,880 actual cubic feet per minute (acfm) for the baghouse collector for the bolt shotblasting operation.

Reason not incorporated: As a result of some shotblasting being removed from this source, the control device is not required in order for the tumble blasting to comply with 326 IAC 6-3-2. Therefore, the limitations from Condition 5 of CP 033-2787-00038, issued on January 28, 1994 are not necessary.

- (c) Exemption 033-3780-00022, issued on July 26, 1994

Any change or modification which may increase the allowable emissions to more than 15 pounds per day of VOC and 25 pounds per day of particulate matter from the equipment covered under this letter must be approved by the Office of Air Management before such change may occur.

Reason not incorporated: This is not required in a Minor Source Operating Permit under 326 IAC 2-6.1.

- (d) Exemption 033-10353-00038, issued on January 11, 1999
 Condition 2: Pursuant to 326 IAC 6-3 (Process Operations); (a) The operation of the sulfuric acid pickling facility shall be limited to 30.5 pounds per hour, and (b) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Reason not incorporated: The requirements of 326 IAC 6-3 are applicable to the sulfuric acid pickling facility. However, the allowable PM emissions were computed using a process weight rate obtained by dividing the annual process weight rate by 8,760 hours per year. In actuality, the hourly process weight rate can be higher than that, and the allowable emissions in this permit are computed using the maximum hourly process weight rate. A Preventive Maintenance Plan is not required for this facility because the control device is not required by a rule and the actual potential emissions are less than 25 tons per year.

- (e) Exemption 033-10353-00038, issued on January 11, 1999
 Any change or modification which may increase the particulate matter to 5 tons per year or more from the equipment covered in this exemption must be approved by the Office of Air Management before such change may occur.

Reason not incorporated: This is not required in a Minor Source Operating Permit under 326 IAC 2-6.1.

- (f) Registration CP 033-10644-00038, issued on April 6, 1999
 Any change or modification which may increase the potential nitrogen oxide emissions to 25 tons per year or more from the equipment covered in this registration must be approved by the Office of Air Management before such change may occur.

Reason not incorporated: This is not required in a Minor Source Operating Permit under 326 IAC 2-6.1.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
EP54	Boiler	45	1.5	2,620	350
EP64	Hardening and Tempering Furnaces	45	1.0	1,500	500
EP65	Hardening and Tempering Furnaces	45	1.0	1,500	500
EP66	Hardening and Tempering Furnaces	45	1.0	1,500	500
EP67	Hardening and Tempering Furnaces	45	1.0	1,500	500
EP68	Endothermic Generators	45	1.67	1,200	500

Enforcement Issue

There are no enforcement actions pending.

Recommendation

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

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

An application for the purposes of this review was received on November 29, 1999, with additional information received on December 23, 1999, January 5, January 6, January 28, February 9, February 11 and February 14, 2000. An application to construct and operate new emission units was received on January 19, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 16 of 16).

Potential To Emit

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

Pollutant	Potential To Emit (tons/year)
PM	65.9
PM ₁₀	71.0
SO ₂	3.42
VOC	44.5
CO	78.3
NO _x	98.4

HAPs	Potential To Emit (tons/year)
Benzene	1.92E-3
Dichlorobenzene	1.10E-3
Formaldehyde	6.87E-2
Hexane	1.65
Toluene	3.11E-3
Lead	4.58E-4
Cadmium	1.01E-3

HAPs	Potential To Emit (tons/year)
Chromium	1.28E-3
Manganese	3.48E-4
Nickel	1.92E-3
Glycol Ethers	6.34E-1
Dioxane	3.22E-4
Trichloroethane	9.68E-1
TOTAL	3.33

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of each criteria air pollutant is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (c) The potentials to emit (as defined in the Indiana Rule) of NO_x, VOC, PM and PM₁₀ are equal to or greater than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.
- (d) Fugitive Emissions
 Since this type of operation is not one of the twenty-eight (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 particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD applicability.

Potential to Emit

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

Process/facility	Potential to Emit (tons/year)						
	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPS
Seventy-three (73) space heaters, nine (9) air makeup units, seven (7) annealing furnaces, two (2) boilers, six (6) heat treat furnaces	1.65	6.00	2.27	18.3	66.4	82.2	< 2.0
Sulfuric acid pickling	3.46	3.46	3.46	0.00	0.00	0.00	0.00

Process/facility	Potential to Emit (tons/year)						
	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPS
Twenty-one (21) bolt making machines and six (6) nut forming machines	8.14	8.14	0.00	19.9	0.00	0.00	0.00
One (1) tumble blaster	4.91	4.91	0.00	0.00	0.00	0.00	0.00
One (1) boiler, four (4) hardening and tempering furnace pairs, three (3) endothermic generators, wax line, wash line	0.361	0.962	0.085	2.87	12.0	16.2	< 2.0
Eight (8) bolt and nut formers	4.74	4.74	0.00	0.00	0.00	0.00	0.00
Total Emissions	23.3	28.2	5.82	41.1	78.4	98.4	3.88

The applicant has requested a Federally Enforceable Condition requiring that the oil mist collection systems controlling emissions from the eight (8) proposed bolt and nut formers be operated at all times when the bolt and nut forming line is in operation. This will make the potential to emit PM and PM₁₀ 4.74 tons per year. Although there are no rules requiring that the oil mist collection systems be operated at all times, a condition will be included in the permit along with requirements for a Preventive Maintenance Plan and Compliance Monitoring.

County Attainment Status

The source is located in Dekalb County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Dekalb 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) Dekalb County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

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

Pollutant	Emissions (ton/yr)
PM	18.2
PM ₁₀	22.5
SO ₂	5.73
VOC	38.2
CO	66.4
NO _x	82.2

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on the existing facility emissions from the Limited Potential to Emit table in this document. There no emissions on file at the OAM for this source.

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)	PM ₁₀ (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	5.10	5.70	0.085	2.87	12.0	16.2
PSD Threshold Level	250	250	250	250	250	250

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

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from the new proposed facilities in this permit, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,

- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPS is less than 25 tons per year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAM inspector assigned to the source.

Federal Rule Applicability

- (a) The three (3) boilers, rated at 9.807 million British thermal units per hour, 4.2 million British thermal units per hour and 8.37 million British thermal units per hour, are not subject to the New Source Performance Standards, 326 IAC 12, 40 CFR 60.40, 40 CFR 60.40a, 40 CFR 60.40b and 40 CFR 60.40c, Subparts D, Da, Db and Dc because they each have a capacity less than 10 million British thermal units per hour.
- (b) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 326 IAC 20; 40 CFR Part 61 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Dekalb County and the potentials to emit PM₁₀, VOC and NO_x are less than one hundred (100) tons per year, therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

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

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

State Rule Applicability - Individual Facilities

326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983)

The three (3) boilers, all constructed after September 21, 1983, must comply with the requirements of 326 IAC 6-2-4. The emission limitations are based on the following equation is given in 326 IAC 6-2-4:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

- (a) The heat input capacities of the two (2) boilers constructed in 1994 are 9.807 million British thermal units per hour and 4.2 million British thermal units per hour. There were no boilers in operation when these boilers were constructed.

$$Pt = 1.09/(14.0)^{0.26} = 0.55 \text{ lb/MMBtu heat input}$$

Based on Appendix A, the maximum potential PM emission rates occur when operating on propane and are:

$$0.188 \text{ ton/yr} \times (2000 \text{ lbs/ton} / 8760 \text{ hrs/yr}) = 0.043 \text{ lb/hr}$$
$$(0.043 \text{ lb/hr} / 9.807 \text{ MMBtu/hr}) = 0.004 \text{ lb PM per MMBtu}$$

$$0.080 \text{ ton/hr} \times (2000 \text{ lbs/ton} / 8760 \text{ hrs/yr}) = 0.018 \text{ lb/hr}$$
$$(0.018 \text{ lb/hr} / 14.0 \text{ MMBtu/hr}) = 0.001 \text{ lb PM per MMBtu}$$

Therefore, the two (2) boilers, constructed in 1994, will comply with this rule.

- (b) The heat input capacity of the one (1) proposed boiler is 8.37 million British thermal units per hour. The total source operating capacity when this boiler is installed will be 22.4 million British thermal units per hour.

$$Pt = 1.09/(22.4)^{0.26} = 0.48 \text{ lb/MMBtu heat input}$$

Based on Appendix A, the maximum potential PM emission rate occurs when operating on propane and is:

$$0.160 \text{ ton/yr} \times (2000 \text{ lbs/ton} / 8760 \text{ hrs/yr}) = 0.036 \text{ lb/hr}$$
$$(0.036 \text{ lb/hr} / 8.37 \text{ MMBtu/hr}) = 0.004 \text{ lb PM per MMBtu}$$

Therefore, the one (1) proposed boiler will comply with this rule.

326 IAC 6-3-2 (Process Operations)

- (a) The particulate matter (PM) from the sulfuric acid pickling shall be limited to 40.6 pounds per hour when operating at a process weight rate of 32.4 tons per hour. Since the potential to emit PM is 0.79 pounds per hour, the sulfuric acid pickling facility will comply with this rule. This limitation was based on the following equation:

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

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

- (b) The particulate matter (PM) from the twenty-one (21) bolt making machines shall be limited to 37.5 pounds per hour when operating at a process weight rate of 27.2 tons per hour. Since the potential to emit PM is 0.899 pound per hour, the twenty-one (21) bolt making machines will comply with this rule. The limitation was based on the following equation:

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

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

- (c) The particulate matter (PM) from the six (6) nut forming machines shall be limited to 4.81 pounds per hour when operating at a process weight rate of 1.27 tons per hour. Since the potential to emit PM is 0.959 pound per hour, the six (6) nut forming machines will comply with this rule. The limitation was based on the equation in (b).
- (d) The particulate matter (PM) from the tumble blaster shall be limited to 4.81 pounds per hour when operating at a process weight rate of 1.27 tons per hour. Since the potential to emit PM is 1.12 pounds per hour, the tumble blaster will comply with this rule. The limitation was based on the equation in (b).
- (e) The particulate matter (PM) from the eight (8) proposed nut and bolt formers shall be limited to 12.5 pounds per hour when operating at a process weight rate of 5.25 tons per hour. Since the potential to emit PM is 10.8 pounds per hour, the eight (8) nut and bolt formers will comply with this rule. This limitation was based on the equation in (b).

326 IAC 7 (Sulfur Dioxide Emission Limitations)

Since the potential to emit SO₂ is less than 25 tons per year, the requirements of 326 IAC 7 are not applicable.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

Since the potential to emit VOC from each facility is less than 25 tons per year, the requirements of 326 IAC 8-1-6 are not applicable.

326 IAC 9 (Carbon Monoxide Emission Limitations)

Since this source does not have petroleum refining emissions, ferrous metal smelters or refuse incineration or burning, the requirements of 326 IAC 9 are not applicable to this source.

326 IAC 10 (Nitrogen Oxides Rules)

The requirements of 326 IAC 10 are not applicable to this source, because this source is not located in Clark or Floyd Counties.

Air Toxic Emissions

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

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations. (Pages 2, 4, 7, 9, 11, 12, 15 and 16 of 16)

Conclusion

The operation of this nut and bolt manufacturing source and the construction and operation of the new equipment shall be subject to the conditions of the attached proposed New Source Construction and Minor Source Operating Permit 033-11203-00038.

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

Addendum to the
Technical Support Document for New Construction and Operation

Source Name: Nucor Fastener
Source Location: 6730 County Road 60, Saint Joe, Indiana 46785
County: Dekalb
Construction Permit No.: MSOP 033-11203-00038
SIC Code: 3452
Permit Reviewer: CarrieAnn Ortolani

On February 25, 2000, the Office of Air Management (OAM) had a notice published in the Auburn Evening Star, Auburn, Indiana, stating that Nucor Fastener had applied for a construction permit to construct and operate a nut and bolt manufacturing source with scrubbers, a baghouse, and an oil mist collection system and an acid recovery system as controls. 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 March 27, John Harden of Nucor Fastener submitted comments on the proposed construction permit. The summary of the comments and corresponding responses are as follows: The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

Construction Permit and MSOP
 A. Page 5 of 28, paragraph (I)
 B. Page 19 of 28, Section D.2, paragraph (I)
 “exhausting to stack EP62,” should read, “exhausting to stack EP63.”

Response 1:

Section A.2, paragraph (I), and item (I) of the Emissions Unit Description Box in Section D.2 have been revised as follows:

- (I) One (1) sulfuric acid pickling facility, exhausting to stack ~~EP62~~ **EP63**, with an acid recovery system, capacity: 32.4 tons of steel per hour and 175,000 tons of steel per year.

Comment 2:

Construction Permit and MSOP
 A. Page 4 of 28, Section A.1
 B. Page 25 of 28, Malfunction Report
 C. Page 27 of 28, MSOP Annual Notification
 “Phone No. (219) 337-5611,” should read (219) 337-1600

Response 2:

The source’s phone number in Section A.1, the Malfunction Report and the MSOP Annual Notification has been revised as follows:

Phone Number: ~~(219) 337-5611~~ **(219) 337-1600**

Comment 3:

Technical Support Document (TSD)
A. Page 2 of 12, Paragraph (I)
“exhausting to stack EP62,” should read, “exhausting to stack EP63.”

Response 3:

IDEM, OAM agrees that this change should be made. However, the OAM prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. This change is noted here in the Addendum to the Technical Support Document. The permit has been revised as indicated in Response 1.

Comment 4:

Technical Support Document (TSD)
A. Page 5 of 12, Potential to emit (tons/year)
the potential to emit table should read as follows:

SO₂ = 6.9
VOC = 41.1

Response 4:

Some SO₂ emissions were incorrectly added to the VOC potential to emit instead of the SO₂ potential to emit. Therefore, IDEM, OAM agrees that this change should be made. However, the OAM prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. This change is noted here in the Addendum to the Technical Support Document. The table is corrected in this Addendum as follows:

Pollutant	Potential To Emit (tons/year)
PM	65.9
PM ₁₀	71.0
SO ₂	3.42 6.87
VOC	44.5 41.1
CO	78.3
NO _x	98.4

There are no changes to the permit or applicable rules as a result of this change.

Comment 5:

Technical Support Document (TSD)

A. Page 7 of 12, Potential to emit (tons/year)

One (1) boiler, four (4) hardening and tempering furnace pairs, three (3) endothermic generators, wax line, wash line

The potential to emit table should read as follows:

$$PM_{10} = 1.08$$

$$SO_2 = 1.15$$

This will change the total emissions.

Response 5:

The calculations in Appendix A of the Technical Support Document (TSD) are correct for these emissions units. However, some PM_{10} and SO_2 emissions were incorrectly omitted from the Potential to Emit totals in this table. Therefore, IDEM, OAM agrees that this change should be made. However, the OAM prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. This change is noted here in the Addendum to the Technical Support Document. The table is corrected in this Addendum as follows:

Process/facility	Potential to Emit (tons/year)						
	PM	PM_{10}	SO_2	VOC	CO	NO_x	HAPS
Seventy-three (73) space heaters, nine (9) air makeup units, seven (7) annealing furnaces, two (2) boilers, six (6) heat treat furnaces	1.65	6.00	2.27	18.3	66.4	82.2	< 2.0
Sulfuric acid pickling	3.46	3.46	3.46	0.00	0.00	0.00	0.00
Twenty-one (21) bolt making machines and six (6) nut forming machines	8.14	8.14	0.00	19.9	0.00	0.00	0.00
One (1) tumble blaster	4.91	4.91	0.00	0.00	0.00	0.00	0.00
One (1) boiler, four (4) hardening and tempering furnace pairs, three (3) endothermic generators, wax line, wash line	0.361	0.962 1.08	0.085 1.15	2.87	12.0	16.2	< 2.0
Eight (8) bolt and nut formers	4.74	4.74	0.00	0.00	0.00	0.00	0.00
Total Emissions	23.3	28.2 28.3	5.82 6.88	41.1	78.4	98.4	3.88

There are no changes to the permit or applicable rules as a result of this change.

Comment 6:

Technical Support Document (TSD)
 A. Page 8 of 12, Proposed Modification (tons/year)
 The table should read as follows:

$$PM_{10} = 5.82$$

$$SO_2 = 1.15$$

Response 6:

The calculations in Appendix A of the Technical Support Document (TSD) are correct for these emissions units. This error is a result of the error corrected in Response 6. Therefore, IDEM, OAM agrees that this change should be made. However, the OAM prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. This change is noted here in the Addendum to the Technical Support Document. The table is corrected in this Addendum as follows:

Pollutant	PM (ton/yr)	PM ₁₀ (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	5.10	5.70 5.82	0.085 1.15	2.87	12.0	16.2
PSD Threshold Level	250	250	250	250	250	250

There are no changes to the permit or applicable rules as a result of this change.

Comment 7:

Construction Permit and MSOP
 A. Page 22 of 28, Section D.4.5 (a)

Nucor Fastener supports the use of visible emissions notations to record “abnormal” or “normal” emissions in lieu of EPA Reference Method 9 observations for the purpose of monitoring compliance. However, Nucor Fastener objects to the proposed daily visible emissions notation requirement as overly stringent for this type of machinery. Past experience with this machinery does not support daily monitoring as necessary to determine compliance with the applicable opacity limits. Nucor Fastener requests that this condition be reduced to weekly observations, which would be sufficient to determine if there is some incremental deterioration in performance for this equipment.

In light of the comment above, Nucor Fastener should also request that the record keeping requirements in Condition D.4.5(a) should be revised accordingly to reflect Weekly instead of daily visible emissions notations. We hope that these comments will lead IDEM to drop the monitoring to weekly.

Response 7:

The visible emission notations are used to indicate compliance with 326 IAC 5-1 and 326 IAC 6, without the requirement to have a person on site trained in opacity measurement. Although the control device is not required to show compliance with 326 IAC 6-3, Nucor Fastener requested that the oil mist collection system be a federally enforceable control device, thus limiting the potential to emit. The visible emission notations requirement in Condition D.4.5 is designed as a trigger that the source perform some corrective action on the facility if visible emissions are abnormal, to ensure continuous compliance with permit conditions. Abnormal visible emissions that are observed would then be the basis for further action. The Office of Air Management feels that if visible emissions were only verified once a week, the possibility for a malfunction of the control equipment would not be detected soon enough and would lead to a deviation from the permit requirements. There will be no changes to this condition in the final permit due to this comment.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Seventy-three (73) space heaters**

**Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
8.3	72.7

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.069	0.276	0.022	3.64	0.200	3.05

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Seventy-three (73) space heaters
HAPs Emissions

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	7.634E-05	4.362E-05	2.727E-03	6.544E-02	1.236E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.818E-05	3.999E-05	5.090E-05	1.381E-05	7.634E-05

Methodology is the same as page 1.

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

**Appendix A: Emissions Calculations
 Natural Gas Combustion Only
 MM BTU/HR <100
 Nine (9) Air Makeup Units**

**Company Name: Nucor Fastener
 Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
 MSOP: 033-11203
 Pit ID: 033-00038
 Reviewer: CarrieAnn Ortolani
 Date: August 3, 1999**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
56.2	492.3

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.468	1.871	0.148	24.62	1.354	20.68

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 4 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Nine (9) Air Makeup Units
HAPs Emissions

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	5.169E-04	2.954E-04	1.846E-02	4.431E-01	8.369E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.231E-04	2.708E-04	3.446E-04	9.354E-05	5.169E-04

Methodology is the same as page 3.

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

Appendix A: Emission Calculations
LPG-Propane -Commercial Boilers
(Heat input capacity: > .3 MMBtu/hr and < 10 MMBtu/hr)

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

Three (3) boilers
(LPG is used for back-up)

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Sulfur Content =	27.30 grains/100ft ³
9.81	938.90		

Emission Factor in lb/kgal	Pollutant					
	PM*	PM10*	SO2 (0.10S)	NOx 14.0	VOC 0.5 **TOC value	CO 1.9
Potential Emission in tons/yr	0.188	0.188	1.28	6.57	0.235	0.892

*PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.

**The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Sulfur Content =	27.30 grains/100ft ³
4.20	402.10		

Emission Factor in lb/kgal	Pollutant					
	PM*	PM10*	SO2 (0.10S)	NOx 14.0	VOC 0.5 **TOC value	CO 1.9
Potential Emission in tons/yr	0.080	0.080	0.549	2.81	0.101	0.382

*PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.

**The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Sulfur Content =	27.30 grains/100ft ³
8.37	801.32		

Emission Factor in lb/kgal	Pollutant					
	PM*	PM10*	SO2 (0.10S)	NOx 14.0	VOC 0.5 **TOC value	CO 1.9
Potential Emission in tons/yr	0.160	0.160	1.09	5.61	0.200	0.761

*PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.

**The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

Methodology

1 gallon of LPG has a heating value of 94,000 Btu
1 gallon of propane has a heating value of 91,500 Btu (use this to convert emission factors to an energy basis for propane)
(Source - AP-42 (Supplement B 10/96) page 1.5-1)
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0915 MMBtu

Emission Factors are from AP42 (Supplement B 10/96), Table 1.5-1 (SCC #1-02-010-02)

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Three (3) boilers

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

Heat Input Capacity
MMBtu/hr

9.81

Potential Throughput
MMCF/yr

85.9

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx 100.0 **see below	VOC	CO
Potential Emission in tons/yr	0.082	0.326	0.026	4.30	0.236	3.61

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

Heat Input Capacity
MMBtu/hr

4.20

Potential Throughput
MMCF/yr

36.8

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx 100.0 **see below	VOC	CO
Potential Emission in tons/yr	0.035	0.140	0.011	1.84	0.101	1.55

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

Heat Input Capacity
MMBtu/hr

8.37

Potential Throughput
MMCF/yr

73.3

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx 100.0 **see below	VOC	CO
Potential Emission in tons/yr	0.070	0.279	0.022	3.67	0.202	3.08

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

Methodology

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

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

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).
 See page 7 for HAPs emissions calculations.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Three (3) boilers

HAPs Emissions

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.716E-04	9.806E-05	6.129E-03	1.471E-01	2.778E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	4.086E-05	8.989E-05	1.144E-04	3.105E-05	1.716E-04

Methodology is the same as page 6.

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

**Appendix A: Emissions Calculations
 Natural Gas Combustion Only
 MM BTU/HR <100
 Seven (7) annealing furnaces**

**Company Name: Nucor Fastener
 Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
 MSOP: 033-11203
 Pit ID: 033-00038
 Reviewer: CarrieAnn Ortolani
 Date: August 3, 1999**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
45.4	397.9

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.378	1.51	0.119	19.9	1.09	16.7

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 9 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Seven (7) annealing furnaces
HAPs Emissions

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Plt ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.178E-04	2.387E-04	1.492E-02	3.581E-01	6.764E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	9.947E-05	2.188E-04	2.785E-04	7.560E-05	4.178E-04

Methodology is the same as page 8.

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

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Combustion Emissions from six (6) heat treat furnaces

Including four (4) belt furnaces, two (2) batch furnaces, seven (7) hardening furnaces, eleven (11) draw furnaces, and two (2) washers

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Plt ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
56.4	494.2

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.470	1.88	0.148	24.7	1.36	20.8

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 11 for HAPs emissions calculations.

Natural Gas Combustion Only

MM BTU/HR <100

Combustion Emissions from six (6) heat treat furnaces

Including four (4) belt furnaces, two (2) batch furnaces, seven (7) hardening furnaces, eleven (11) draw furnaces, and two (2) washers

HAPs Emissions

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Plt ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	5.190E-04	2.965E-04	1.853E-02	4.448E-01	8.402E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.236E-04	2.718E-04	3.460E-04	9.391E-05	5.190E-04

Methodology is the same as page 10.

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

**Appendix A: Emission Calculations
Miscellaneous Operations**

**Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Pit ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999**

VOC and HAP emissions

Facility	Material	Potential Usage (lbs/yr)	VOC Content (%)	HAPs	Potential VOC Emissions before Controls (tons/yr)	Control Efficiency (%)	Potential VOC Emissions after Controls (tons/yr)	Potential HAP Emissions after Controls (tons/yr)
Existing Facilities	Corfilm 95	11518	5.00%	Glycol Ethers (5%)	0.288	0.0%	0.288	0.288
Existing Facilities	Metal Guard 310	55629	4.00%	none	1.113	0.0%	1.113	0.000
Existing Facilities	RLT 25	5500	100.00%	none	2.750	0.0%	2.750	0.000
Existing Facilities	Houghto-clean 221	207	30.00%	Glycol Ethers (10%)	0.031	0.0%	0.031	0.010
Existing Facilities	Cutzol EDM-30	1156	50.00%	none	0.289	0.0%	0.289	0.000
Existing Facilities	Diamond paste extender	63	100.00%	Dioxane (1%), Trichloroethane (30%)	0.032	0.0%	0.032	0.010
Existing Facilities	TRIADINE 3	26152	22.00%	none	2.877	0.0%	2.877	0.000
Existing Facilities	TRIADINE 20	88	25.00%	none	0.011	0.0%	0.011	0.000
Existing Facilities	Crystal Clean	10500	100.00%	none	5.250	0.0%	5.250	0.000
Existing Facilities	Tech Clean 7100	85109	3.00%	none	1.277	0.0%	1.277	0.000
Existing Facilities	SYNTILO 9902	2190	9.00%	none	0.099	0.0%	0.099	0.000
					14.0		14.0	0.308

PM , VOC and HAP emissions

Facility	Material	Usage (lbs/yr)	VOC content (%)	PM content (%)	HAPs	Potential VOC Emissions before Controls (tons/yr)	Potential PM Emissions before Controls (lbs/hr)	Potential PM Emissions before Controls (tons/yr)
Bolt Formers	Cooling Oil	78770	50.00%	10.00%	none	19.7	0.899	3.94
Nut Formers	Cooling Oil	84000	0.40%	10.00%	none	0.168	0.959	4.20
						19.9	1.86	8.14

Methodology

Emissions (tons/yr) = usage (lbs/yr) * Content (VOC, PM or HAP) / 2000 lbs/ton
 Emissions (lbs/hr) = Emissions (tons/yr) * 2000 lbs/ton / 8760 hrs/yr
 Actual annual usage rates have been increased to correspond to maximum potential usage.

Tumble blast

Based on the information supplied by the applicant, the collection rate for the tumble blast dust collector is 3.24 tons of PM per year.

Baghouse Collection Rate (tons/yr)	Potential Baghouse Collection Rate (tons/yr)	Control Efficiency (%)	Potential PM* Emissions (tons/yr)	Potential PM Emissions (lbs/hr)	PM Emissions after Controls (tons/yr)	PM Emissions after Controls (lbs/hr)
3.24	4.86	99.0%	4.91	1.12	0.049	0.011

PM = PM-10

Methodology

Potential Baghouse Collection rate = collection rate * 1.5
 Emissions (tons/yr) = Potential Baghouse collection rate (tons/yr) / control efficiency
 Emissions (lbs/hr) = Emissions (tons/yr) * 2000 lbs/ton / 8,760 hrs/yr
 Emissions after controls = Potential Emissions * (1- control efficiency)

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Plt ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

Estimated emissions as calculated in the TSD to CP 033-10353-00038, issued on January 11, 1999

Maximum Uncontrolled PM/PM-10 (lbs/hr)	Maximum Uncontrolled PM/PM-10 (tons/yr)	Capture Efficiency Fume Exhaust (%)	Control Efficiency Scrubber and Mist Eliminator (%)	Maximum Controlled Emissions (lbs/hr)	Maximum Controlled Emissions (tons/yr)
0.79	3.46	70.0%	98.0%	0.248	1.09

Since the emissions are a sulfuric acid mist, the potential to emit SO₂ will conservatively be equal to PM emissions.

Methodology

Maximum Controlled Emissions (lbs/hr) = Maximum Uncontrolled Emissions (lbs/hr) * (1- Capture Efficiency) + Maximum Uncontrolled Emissions * Capture Efficiency * (1- Control Efficiency)
 Emissions (tons/hr) = Emissions (lbs/hr) * 8,760 hrs/yr / 2,000 lbs/ton

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Four (4) hardening and tempering furnace pairs and three (3) endothermic generators

Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Plt ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
24.1	211.1

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.201	0.802	0.063	10.6	0.581	8.87

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

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

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 15 for HAPs emissions calculations.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Four (4) hardening and tempering furnace pairs and three (3) endothermic generators

HAPs Emissions

Company Name: Nucor Fastener

Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785

MSOP: 033-11203

Plt ID: 033-00038

Reviewer: CarrieAnn Ortolani

Date: August 3, 1999

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.217E-04	1.267E-04	7.917E-03	1.900E-01	3.589E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	5.278E-05	1.161E-04	1.478E-04	4.011E-05	2.217E-04

Methodology is the same as page 14.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations
Miscellaneous Operations**

**Company Name: Nucor Fastener
Address City IN Zip: 6730 County Road 60, Saint Joe, Indiana 46785
MSOP: 033-11203
Plt ID: 033-00038
Reviewer: CarrieAnn Ortolani
Date: August 3, 1999**

VOC and HAP emissions

Facility	Material	Potential Usage (gal/yr)	Density (lbs/gal)	VOC Content (%)	HAPs	Potential VOC Emissions before Controls (tons/yr)	Control Efficiency (%)	Potential Emissions after Controls (tons/yr)
Wax Line	Torque'n Tension Control Fluid	2250	8.42	1.00%	none	0.095	0.0%	0.095
Wash Line	CORFILM 95	1733	7.76	5.00%	Glycol Ethers (5%)	0.336	0.0%	0.336
Hardening & Tempering	Tech Clean 7100	14440	7.67	3.00%	none	1.66	0.0%	1.66
						2.09		2.09

PM

Facility	Material	Usage (gal/yr)	Density (lbs/gal)	PM emitted (%)	HAPs	Potential PM Emissions before Controls (lbs/hr)	Potential PM Emissions before Controls (tons/yr)	Control Efficiency (%)	Potential PM Emissions after Controls (lbs/hr)	Potential PM Emissions after Controls (tons/yr)
Bolt Formers	Cooling Oil	25000	7.59	50.00%	none	10.8	47.4	90.0%	1.08	4.74