



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

To: Interested Parties

Date: August 12, 2014

From: Matthew Stuckey, Chief
Permits Branch
Office of Air Quality

Source Name: Nucor Vulcraft Group – St. Joe Division

Permit Level: Significant Permit Modification

Permit Number: 033-34369-00027

Source Location: 6610 County Road 60, St. Joe, Indiana

Type of Action Taken: Revisions to permit requirements

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above.

The final decision is available on the IDEM website at: <http://www.in.gov/apps/idem/caats/>
To view the document, select Search option 3, then enter permit 34369.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

Pursuant to IC 13-17-3-4 and 326 IAC 2, this permit modification is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

(continues on next page)

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of a Title V operating permit or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.



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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

Mr. Tim Jones
Nucor Vulcraft Group - St. Joe Division
P.O. Box
St. Joe, IN 46785

August 12, 2014

Re: 033-34369-00027
Significant Permit Modification to
Part 70 Renewal No.: T033-32592-00027

Dear Mr. Jones:

Nucor Vulcraft Group - St. Joe Division was issued a Part 70 Operating Permit Renewal No. 033-32592-00027 on May 15, 2013 for a stationary steel joist and deck fabrication operation located at 6610 County Road 60, St. Joe, Indiana. An application requesting changes to this permit was received on March 31, 2014. Pursuant to the provisions of 326 IAC 2-7-12, a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

Please find attached the entire Part 70 Operating Permit as modified, including the following new attachment:

Attachment B: 40 CFR 63, Subpart XXXXXX, National Emission Standards for Hazardous Air Pollutants for Nine Metal Fabrication and Finishing Source Categories (new)

The permit references the below listed attachment. Since this attachment has been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of this attachment with this modification:

Attachment A: 40 CFR 60, Subpart TT, New Source Performance Standards for Metal Coil Coating

Previously issued approvals for this source containing this attachment are available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

A copy of the permit is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Brian Williams, of my staff, at 317-234-5375 or 1-800-451-6027, and ask for extension 4-5375.

Sincerely,



Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

Attachment(s): Updated Permit, Technical Support Document and Appendix A

IC/BMW

cc: File - DeKalb County
DeKalb County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch
Billing, Licensing and Training Section
IDEM Northern Regional Office



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Michael R. Pence
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Commissioner

Part 70 Operating Permit Renewal OFFICE OF AIR QUALITY

**Nucor Vulcraft Group - St. Joe Division
6610 County Road 60
St. Joe, Indiana 46785**

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

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T033-32592-00027	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: May 15, 2013 Expiration Date: May 18, 2018

Significant Permit Modification No.: 033-34369-00027	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 12, 2014 Expiration Date: May 18, 2018

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B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:
 - (1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and
 - (2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) A "responsible official" is defined at 326 IAC 2-7-1(35).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report 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, OAQ on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, or Northern Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;

- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
 - (1) That this permit contains a material mistake.
 - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
 - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
 - (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the

document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

- (a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.
- (b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) without a prior permit revision, if each of the following conditions is met:
 - (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1) and (c)(1).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

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

C.7 Performance Testing [326 IAC 3-6]

- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

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

C.9 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

- (a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.
- (b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003

Indianapolis, Indiana 46204-2251

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

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

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

C.11 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

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

- (a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.12 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.13 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

- (a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system);
or

- (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

C.15 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2004 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue

MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

- (AA) All calibration and maintenance records.
- (BB) All original strip chart recordings for continuous monitoring instrumentation.
- (CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

- (AA) The date, place, as defined in this permit, and time of sampling or measurements.
- (BB) The dates analyses were performed.
- (CC) The company or entity that performed the analyses.
- (DD) The analytical techniques or methods used.
- (EE) The results of such analyses.
- (FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003

- (2) two (2) dip-and drain paint tanks (constructed in October 1985, and replaced with water-based paint dip tanks in September 1994).

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (f) One (1) steel bridging fabrication line, identified as Bridging Line, with a maximum production capacity of ten (10) tons per hour, including the following:

- (1) a GMAW welding area (constructed in March 1972),
- (2) one (1) dip-and drain paint tank (constructed in March 1972) and
- (3) one (1) vacuum coater (constructed in December 1992).

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (g) One (1) steel deck fabrication line, identified as Deck Line, with a maximum production capacity of forty (40) tons of steel deck per hour, including the following:

- (1) three (3) double-side roll coaters (with 2 roll coaters constructed in October 1977 and the third roll coater constructed in February 1998),
- (2) three (3) electric infra-red drying ovens,
- (3) two (2) airless spray edge coaters (constructed in February 1998) and
- (4) Quench water stations.

Under NSPS Subpart TT, the Deck Line's three (3) roll coaters, infra-red curing ovens, and water quench stations are considered an affected metal coil surface coating facility.

- (h) Two (2) mobile steel joist fabrication line spray coating operations, identified as Spray Coating Unit 1 and Spray Coating Unit 2, approved in 2013 for construction, with a maximum production capacity of 12 tons of steel joists per hour each, to be used at the Super Long Span, Long Span, Middle Span, Short Span or Combo Joist fabrication line, using work practices for particulate control.

Insignificant Activities

- (z) Aerosol Touch-Up operation, approved in 2013 for construction, using less than 5 gallons of coating per day, no control, exhausting inside the building.

(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 2-7-5(1)]

D.1.1 VOC PSD Minor Limit [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the VOC input, including coatings, dilution solvents, and cleaning solvents, to the Super Long Span Line, Long Span Line, Middle Span Line, Short Span Line, Combo Line, Bridging Line, Deck Line, Spray Coating Unit 1, Spray Coating Unit 2 and Aerosol Touch-Up Operation shall not exceed 210 tons, combined, per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with the above limit, in conjunction with the potential to emit VOC from other emission units at the source, shall limit the source-wide PTE of VOC from the entire source (Nucor Vulcraft Group – St. Joe Division and Nucor Fastener) to less than 250 tons per twelve (12) consecutive month period and renders the source minor under 326 IAC 2-2, PSD.

D.1.2 PM, PM10 and PM2.5 PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

- (a) The spray coatings applied at the Spray Coating Units 1 and 2 shall be limited such that the total PM emissions from Spray Coating Unit 1 and 2 shall not exceed 40 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The spray coatings applied at Spray Coating Units 1 and 2 shall be limited such that total PM10 emissions from Spray Coating Units 1 and 2 shall not exceed 40 tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The spray coatings applied at Spray Coating Units 1 and 2 shall be limited such that total PM2.5 emissions from Spray Coating Units 1 and 2 shall not exceed 40 tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with the above limits, in conjunction with the potential to emit PM, PM10 and PM2.5 from all other emission units at the source, shall limit the source-wide PTE of PM, PM10, and PM2.5 from the entire source (Nucor Vulcraft Group – St. Joe Division and Nucor Fastener) to less than 250 tons per twelve (12) consecutive month period, each, and renders the requirements of 326 IAC 2-2 (PSD) not applicable.

D.1.3 Volatile Organic Compound (VOC) (Miscellaneous Metal Coating) [326 IAC 8-2-9]

- (a) Pursuant to 326 IAC 8-2-9(c)(2), the VOC content of the primer coatings delivered to the applicators of the Super Long Span Line, Long Span Line, Middle Span Line, Short Span Line, Combo Line, Spray Coating Unit 1 and Spray Coating Unit 2 shall be limited to 3.5 pounds of VOC per gallon of coating less water, for forced warm air dried coatings.
- (b) Pursuant to 326 IAC 8-2-9(c)(2), the VOC content of the primer coatings delivered to the applicators of the Bridging Line shall be limited to 3.5 pounds of VOC per gallon of coating less water, for forced warm air dried coatings.
- (c) Pursuant to 326 IAC 8-2-9(c)(1), the VOC content of the clear coatings delivered to the applicators of the Deck Line edge coaters shall be limited to 4.3 pounds of VOC per gallon of coating less water.
- (d) Pursuant to 326 IAC 8-2-9(f), the Work practices shall include the following:
 - (1) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.
 - (2) Ensure that mixing and storage containers used for VOC containing coatings,

thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

- (3) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.
- (4) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.
- (5) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

D.1.4 Volatile Organic Compound (VOC) [326 IAC 8-2-4]

Pursuant to IAC 8-2-4 (Coil Coating Operations), the volatile organic compound (VOC) content of coatings applied to any flat metal sheets or strips that are delivered in rolls or coils to the Deck Line's three (3) roll coaters, infra-red curing ovens, and water quench stations shall be limited to 2.6 pounds of VOC per gallon of coating, excluding water.

D.1.5 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), the particulate emissions from Spray Coating Unit 1 and Spray Coating Unit 2 shall be controlled by a dry particulate filter, waterwash, or an equivalent control device. The Permittee shall use following work practices as equivalent control for Spray Coating Unit 1 and Spray Coating Unit 2:

- (a) Conduct all spray coating operations within an enclosed building.
- (b) Close main doors, overhead doors and powered vents located within 100 feet of the spray equipment, and keep them closed during spray operations.
- (c) Collect coating overspray on drip boards or disposable media such as cardboard or plastic sheets, and/or collect dry-fall paint on floor surfaces.
- (d) Contain and dispose dry-fall paint from drip boards, disposable media and floor surfaces to prevent re-entrainment to exhaust air.

D.1.6 Preventative Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for these facilities. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC content and usage limitations contained in Conditions D.1.1, D.1.3 and D.1.4 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

SECTION E.1 Standards of Performance for Metal Coil Coating NSPS

Emissions Unit Description:

- (g) One (1) steel deck fabrication line, identified as Deck Line, with a maximum production capacity of forty (40) tons of steel deck per hour, including the following:
- (1) three (3) double-side roll coaters (with 2 roll coaters constructed in October 1977 and the third roll coater constructed in February 1998),
 - (2) three (3) electric infra-red drying ovens,
 - (3) two (2) airless spray edge coaters (constructed in February 1998) and
 - (4) Quench water stations.

Under NSPS Subpart TT, the Deck Line's three (3) roll coaters, infra-red curing ovens, and water quench stations are considered an affected metal coil surface coating facility.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A] [326 IAC 12]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the Deck Line's three (3) roll coaters, infra-red curing ovens, and water quench stations except when otherwise specified in 40 CFR 60 Subpart TT.

E.1.2 Standards of Performance for Metal Coil Coating NSPS [40 CFR Part 60, Subpart TT]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart TT, which is incorporated by reference and included as Attachment A to this permit, for the Deck Line's three (3) roll coaters, infra-red curing ovens, and water quench stations:

- (a) 40 CFR 60.460
- (b) 40 CFR 60.461
- (c) 40 CFR 60.462(a)(1)
- (d) 40 CFR 60.463(a), (b), and (c)(1)
- (e) 40 CFR 60.464(a)
- (f) 40 CFR 60.465(a), (c), and (e)
- (g) 40 CFR 60.466(a)(1) and (b)

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION**

Source Name: Nucor Vulcraft Group - St. Joe Division
Source Address: 6610 County Road 60, St. Joe, Indiana 46785
Part 70 Permit No.: T033-32592-00027

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

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Report (specify)
- Notification (specify)
- Affidavit (specify)
- Other (specify)

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

Signature:

Printed Name:

Title/Position:

Phone:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Nucor Vulcraft Group - St. Joe Division
Source Address: 6610 County Road 60, St. Joe, Indiana 46785
Part 70 Permit No.: T033-32592-00027

This form consists of 2 pages

Page 1 of 2

- | |
|---|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none">• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16. |
|---|

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

Part 70 Quarterly Report

Source Name: Nucor Vulcraft Group - St. Joe Division
Source Address: 6610 County Road 60, St. Joe, Indiana 46785
Part 70 Permit No.: T033-32592-00027
Facility: Spray Coating Unit 1 and Spray Coating Unit 2
Parameter: total PM, PM10 and PM2.5 emissions, each
Limit: 40 tons/year with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	total PM, PM10 and PM2.5 emissions for This Month (tons)	total PM, PM10 and PM2.5 emissions for Previous 11 Months (tons)	total PM, PM10 and PM2.5 emissions for 12-Month Period (tons)

- No deviation occurred in this quarter.
- Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE AND ENFORCEMENT BRANCH
 PART 70 OPERATING PERMIT
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Nucor Vulcraft Group - St. Joe Division
 Source Address: 6610 County Road 60, St. Joe, Indiana 46785
 Part 70 Permit No.: T033-32592-00027

Months: _____ **to** _____ **Year:** _____

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

Attachment B

Part 70 Operating Permit Renewal No.: T033-32592-00027

Title 40: Protection of Environment

Subpart XXXXXX—National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

Source: 73 FR 43000, July 23, 2008, unless otherwise noted.

Applicability and Compliance Dates

§ 63.11514 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate an area source that is primarily engaged in the operations in one of the nine source categories listed in paragraphs (a)(1) through (9) of this section. Descriptions of these source categories are shown in Table 1 of this subpart. "Primarily engaged" is defined in §63.11522, "What definitions apply to this subpart?"

- (1) Electrical and Electronic Equipment Finishing Operations;
- (2) Fabricated Metal Products;
- (3) Fabricated Plate Work (Boiler Shops);
- (4) Fabricated Structural Metal Manufacturing;
- (5) Heating Equipment, except Electric;
- (6) Industrial Machinery and Equipment Finishing Operations;
- (7) Iron and Steel Forging;
- (8) Primary Metal Products Manufacturing; and
- (9) Valves and Pipe Fittings.

(b) The provisions of this subpart apply to each new and existing affected source listed and defined in paragraphs (b)(1) through (5) of this section if you use materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be the compounds of cadmium, chromium, lead, manganese, and nickel, or any of these metals in the elemental form with the exception of lead. Materials that contain MFHAP are defined to be materials that contain greater than 0.1 percent for carcinogens, as defined by OSHA at 29 CFR 1910.1200(d)(4), and greater than 1.0 percent for noncarcinogens. For the MFHAP, this corresponds to materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material.

(1) A dry abrasive blasting affected source is the collection of all equipment and activities necessary to perform dry abrasive blasting operations which use materials that contain MFHAP or that have the potential to emit MFHAP.

(2) A machining affected source is the collection of all equipment and activities necessary to perform machining operations which use materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or that have the potential to emit MFHAP.

(3) A dry grinding and dry polishing with machines affected source is the collection of all equipment and activities necessary to perform dry grinding and dry polishing with machines operations which use materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or have the potential to emit MFHAP.

(4) A spray painting affected source is the collection of all equipment and activities necessary to perform spray-applied painting operations using paints which contain MFHAP. A spray painting affected source includes all equipment used to apply cleaning materials to a substrate to prepare it for paint application (surface preparation) or to remove dried paint; to apply a paint to a substrate (paint application) and to dry or cure the paint after application; or to clean paint operation equipment (equipment cleaning). Affected source(s) subject to the requirements of this paragraph are not subject to the miscellaneous surface coating provisions of subpart HHHHHH of this part, "National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources."

(5) A welding affected source is the collection of all equipment and activities necessary to perform welding operations which use materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or have the potential to emit MFHAP.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source, as defined in §63.2, "General Provisions" to part 63, before April 3, 2008.

(d) An affected source is new if you commenced construction or reconstruction of the affected source, as defined in §63.2, "General Provisions" to part 63, on or after April 3, 2008.

(e) This subpart does not apply to research or laboratory facilities, as defined in section 112(c)(7) of the Clean Air Act (CAA).

(f) This subpart does not apply to tool or equipment repair operations, facility maintenance, or quality control activities as defined in §63.11522, "What definitions apply to this subpart?"

(g) This subpart does not apply to operations performed on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state), the National Aeronautics and Space Administration, or the National Nuclear Security Administration.

(h) This subpart does not apply to operations that produce military munitions, as defined in §63.11522, "What definitions apply to this subpart?", manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state), or equipment directly and exclusively used for the purposes of transporting military munitions.

(i) You are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

§ 63.11515 What are my compliance dates?

(a) If you own or operate an existing affected source, you must achieve compliance with the applicable provisions in this subpart by July 25, 2011.

(b) If you own or operate a new affected source, you must achieve compliance with the applicable provisions in this subpart by July 23, 2008, or upon startup of your affected source, whichever is later.

Standards and Compliance Requirements

§ 63.11516 What are my standards and management practices?

(a) *Dry abrasive blasting standards.* If you own or operate a new or existing dry abrasive blasting affected source, you must comply with the requirements in paragraphs (a)(1) through (3) of this section, as applicable, for each dry

abrasive blasting operation that uses materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or has the potential to emit MFHAP. These requirements do not apply when abrasive blasting operations are being performed that do not use any materials containing MFHAP or do not have the potential to emit MFHAP.

(1) *Standards for dry abrasive blasting of objects performed in totally enclosed and unvented blast chambers.* If you own or operate a new or existing dry abrasive blasting affected source which consists of an abrasive blasting chamber that is totally enclosed and unvented, as defined in §63.11522, "What definitions apply to this subpart?", you must implement management practices to minimize emissions of MFHAP. These management practices are the practices specified in paragraph (a)(1)(i) and (ii) of this section.

(i) You must minimize dust generation during emptying of abrasive blasting enclosures; and

(ii) You must operate all equipment associated with dry abrasive blasting operations according to the manufacturer's instructions.

(2) *Standards for dry abrasive blasting of objects performed in vented enclosures.* If you own or operate a new or existing dry abrasive blasting affected source which consists of a dry abrasive blasting operation which has a vent allowing any air or blast material to escape, you must comply with the requirements in paragraphs (a)(2)(i) and (ii) of this section. Dry abrasive blasting operations for which the items to be blasted exceed 8 feet (2.4 meters) in any dimension, may be performed subject to the requirements in paragraph (a)(3) of this section.

(i) You must capture emissions and vent them to a filtration control device. You must operate the filtration control device according to manufacturer's instructions, and you must demonstrate compliance with this requirement by maintaining a record of the manufacturer's specifications for the filtration control devices, as specified by the requirements in §63.11519(c)(4), "What are my notification, recordkeeping, and reporting requirements?"

(ii) You must implement the management practices to minimize emissions of MFHAP as specified in paragraphs (a)(2)(ii)(A) through (C) of this section.

(A) You must take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable; and

(B) You must enclose dusty abrasive material storage areas and holding bins, seal chutes and conveyors that transport abrasive materials; and

(C) You must operate all equipment associated with dry abrasive blasting operations according to manufacturer's instructions.

(3) *Standards for dry abrasive blasting of objects greater than 8 feet (2.4 meters) in any one dimension.* If you own or operate a new or existing dry abrasive blasting affected source which consists of a dry abrasive blasting operation which is performed on objects greater than 8 feet (2.4 meters) in any one dimension, you may implement management practices to minimize emissions of MFHAP as specified in paragraph (a)(3)(i) of this section instead of the practices required by paragraph (a)(2) of this section. You must demonstrate that management practices are being implemented by complying with the requirements in paragraphs (a)(3)(ii) through (iv) of this section.

(i) Management practices for dry abrasive blasting of objects greater than 8 feet (2.4 meters) in any one dimension are specified in paragraphs (a)(3)(i)(A) through (E) of this section.

(A) You must take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable; and

(B) You must enclose abrasive material storage areas and holding bins, seal chutes and conveyors that transport abrasive material; and

(C) You must operate all equipment associated with dry abrasive blasting operations according to manufacturer's instructions; and

(D) You must not re-use dry abrasive blasting media unless contaminants (i.e., any material other than the base metal, such as paint residue) have been removed by filtration or screening, and the abrasive material conforms to its original size; and

(E) Whenever practicable, you must switch from high particulate matter (PM)-emitting blast media (e.g., sand) to low PM-emitting blast media (e.g., crushed glass, specular hematite, steel shot, aluminum oxide), where PM is a surrogate for MFHAP.

(ii) You must perform visual determinations of fugitive emissions, as specified in §63.11517(b), "What are my monitoring requirements?", according to paragraphs (a)(3)(ii)(A) or (B) of this section, as applicable.

(A) For abrasive blasting of objects greater than 8 feet (2.4 meters) in any one dimension that is performed outdoors, you must perform visual determinations of fugitive emissions at the fenceline or property border nearest to the outdoor dry abrasive blasting operation.

(B) For abrasive blasting of objects greater than 8 feet (2.4 meters) in any one dimension that is performed indoors, you must perform visual determinations of fugitive emissions at the primary vent, stack, exit, or opening from the building containing the abrasive blasting operations.

(iii) You must keep a record of all visual determinations of fugitive emissions along with any corrective action taken in accordance with the requirements in §63.11519(c)(2), "What are my notification, recordkeeping, and reporting requirements?"

(iv) If visible fugitive emissions are detected, you must perform corrective actions until the visible fugitive emissions are eliminated, at which time you must comply with the requirements in paragraphs (a)(3)(iv)(A) and (B) of this section.

(A) You must perform a follow-up inspection for visible fugitive emissions in accordance with §63.11517(a), "Monitoring Requirements."

(B) You must report all instances where visible emissions are detected, along with any corrective action taken and the results of subsequent follow-up inspections for visible emissions, with your annual certification and compliance report as required by §63.11519(b)(5), "Notification, recordkeeping, and reporting requirements."

(b) *Standards for machining.* If you own or operate a new or existing machining affected source, you must implement management practices to minimize emissions of MFHAP as specified in paragraph (b)(1) and (2) of this section for each machining operation that uses materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or has the potential to emit MFHAP. These requirements do not apply when machining operations are being performed that do not use any materials containing MFHAP and do not have the potential to emit MFHAP.

(1) You must take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable; and

(2) You must operate all equipment associated with machining according to manufacturer's instructions.

(c) *Standards for dry grinding and dry polishing with machines.* If you own or operate a new or existing dry grinding and dry polishing with machines affected source, you must comply with the requirements of paragraphs (c)(1) and (2) of this section for each dry grinding and dry polishing with machines operation that uses materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or has the potential to emit MFHAP. These requirements do not apply when dry grinding and dry polishing operations are being performed that do not use any materials containing MFHAP and do not have the potential to emit MFHAP.

(1) You must capture emissions and vent them to a filtration control device. You must demonstrate compliance with this requirement by maintaining a record of the manufacturer's specifications for the filtration control devices, as specified by the requirements in §63.11519(c)(4), "Notification, recordkeeping, and reporting Requirements."

(2) You must implement management practices to minimize emissions of MFHAP as specified in paragraphs (c)(2)(i) and (ii) of this section.

(i) You must take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable;

(ii) You must operate all equipment associated with the operation of dry grinding and dry polishing with machines, including the filtration control device, according to manufacturer's instructions.

(d) *Standards for control of MFHAP in spray painting.* If you own or operate a new or existing spray painting affected source, as defined in §63.11514 (b)(4), "Am I subject to this subpart?," you must implement the management practices in paragraphs (d)(1) through (9) of this section when a spray-applied paint that contains MFHAP is being applied. These requirements do not apply when spray-applied paints that do not contain MFHAP are being applied.

(1) *Standards for spray painting for MFHAP control.* All spray-applied painting of objects must meet the requirements of paragraphs (d)(1)(i) through (iii) of this section. These requirements do not apply to affected sources located at Fabricated Structural Metal Manufacturing facilities, as described in Table 1, "Description of Source Categories Affected by this Subpart," or affected sources that spray paint objects greater than 15 feet (4.57 meters), that are not spray painted in spray booths or spray rooms.

(i) Spray booths or spray rooms must have a full roof, at least two complete walls, and one or two complete side curtains or other barrier material so that all four sides are covered. The spray booths or spray rooms must be ventilated so that air is drawn into the booth and leaves only through the filter. The roof may contain narrow slots for connecting fabricated products to overhead cranes, and/or for cords or cables.

(ii) All spray booths or spray rooms must be fitted with a type of filter technology that is demonstrated to achieve at least 98 percent capture of MFHAP. The procedure used to demonstrate filter efficiency must be consistent with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Method 52.1, "Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter, June 4, 1992" (incorporated by reference, see §63.14). The test coating for measuring filter efficiency shall be a high-solids bake enamel delivered at a rate of at least 135 grams per minute from a conventional (non-High Volume Low Pressure) air-atomized spray gun operating at 40 psi air pressure; the air flow rate across the filter shall be 150 feet per minute. Owners and operators may use published filter efficiency data provided by filter vendors to demonstrate compliance with this requirement and are not required to perform this measurement.

(iii) You must perform regular inspection and replacement of the filters in all spray booths or spray rooms according to manufacturer's instructions, and maintain documentation of these activities, as detailed in §63.11519(c)(5), "Notification, recordkeeping, and reporting requirements."

(iv) As an alternative compliance requirement, spray booths or spray rooms equipped with a water curtain, called "waterwash" or "waterspray" booths or spray rooms that are operated and maintained according to the manufacturer's specifications and that achieve at least 98 percent control of MFHAP, may be used in lieu of the spray booths or spray rooms requirements of paragraphs (d)(1)(i) through (iii) of this section.

(2) *Standards for spray painting application equipment of all objects painted for MFHAP control.* All paints applied via spray-applied painting must be applied with a high-volume, low-pressure (HVLP) spray gun, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology that is demonstrated to achieve transfer efficiency comparable to one of these spray gun technologies for a comparable operation, and for which written approval has been obtained from the Administrator. The procedure used to demonstrate that spray gun transfer efficiency is equivalent to that of an HVLP spray gun must be equivalent to the California South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989" and "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002", Revision 0 (incorporated by reference, see §63.14).

(3) *Spray system recordkeeping.* You must maintain documentation of the HVLP or other high transfer efficiency spray paint delivery methods, as detailed in §63.11519(c)(7), "Notification, recordkeeping, and reporting requirements."

(4) *Spray gun cleaning.* All cleaning of paint spray guns must be done with either non-HAP gun cleaning solvents, or in such a manner that an atomized mist of spray of gun cleaning solvent and paint residue is not created outside of a container that collects the used gun cleaning solvent. Spray gun cleaning may be done with, for example, by hand cleaning of parts of the disassembled gun in a container of solvent, by flushing solvent through the gun without atomizing the solvent and paint residue, or by using a fully enclosed spray gun washer. A combination of these non-atomizing methods may also be used.

(5) *Spray painting worker certification.* All workers performing painting must be certified that they have completed training in the proper spray application of paints and the proper setup and maintenance of spray equipment. The minimum requirements for training and certification are described in paragraph (d)(6) of this section. The spray application of paint is prohibited by persons who are not certified as having completed the training described in paragraph (d)(6) of this section. The requirements of this paragraph do not apply to the students of an accredited painting training program who are under the direct supervision of an instructor who meets the requirements of this paragraph. The requirements of this paragraph do not apply to operators of robotic or automated painting operations.

(6) *Spray painting training program content.* Each owner or operator of an affected spray painting affected source must ensure and certify that all new and existing personnel, including contract personnel, who spray apply paints are trained in the proper application of paints as required by paragraph (d)(5) of this section. The training program must include, at a minimum, the items listed in paragraphs (d)(6)(i) through (iii) of this section.

(i) A list of all current personnel by name and job description who are required to be trained;

(ii) Hands-on, or in-house or external classroom instruction that addresses, at a minimum, initial and refresher training in the topics listed in paragraphs (d)(6)(ii)(A) through (D) of this section.

(A) Spray gun equipment selection, set up, and operation, including measuring paint viscosity, selecting the proper fluid tip or nozzle, and achieving the proper spray pattern, air pressure and volume, and fluid delivery rate.

(B) Spray technique for different types of paints to improve transfer efficiency and minimize paint usage and overspray, including maintaining the correct spray gun distance and angle to the part, using proper banding and overlap, and reducing lead and lag spraying at the beginning and end of each stroke.

(C) Routine spray booth and filter maintenance, including filter selection and installation.

(D) Environmental compliance with the requirements of this subpart.

(iii) A description of the methods to be used at the completion of initial or refresher training to demonstrate, document, and provide certification of successful completion of the required training. Alternatively, owners and operators who can show by documentation or certification that a painter's work experience and/or training has resulted in training equivalent to the training required in paragraph (d)(6)(ii) of this section are not required to provide the initial training required by that paragraph to these painters.

(7) *Records of spray painting training.* You must maintain records of employee training certification for use of HVLP or other high transfer efficiency spray paint delivery methods as detailed in §63.11519(c)(8), "Notification, recordkeeping, and reporting requirements."

(8) *Spray painting training dates.* As required by paragraph (d)(5) of this section, all new and existing personnel at an affected spray painting affected source, including contract personnel, who spray apply paints must be trained by the dates specified in paragraphs (d)(8)(i) and (ii) of this section.

(i) If your source is a new source, all personnel must be trained and certified no later than January 20, 2009, 180 days after startup, or 180 days after hiring, whichever is later. Training that was completed within 5 years prior to the date training is required, and that meets the requirements specified in paragraph (d)(6)(ii) of this section satisfies this requirement and is valid for a period not to exceed 5 years after the date the training is completed.

(ii) If your source is an existing source, all personnel must be trained and certified no later than July 25, 2011, or 180 days after hiring, whichever is later. Worker training that was completed within 5 years prior to the date training is

required, and that meets the requirements specified in paragraph (d)(6)(ii) of this section, satisfies this requirement and is valid for a period not to exceed 5 years after the date the training is completed.

(9) *Duration of training validity.* Training and certification will be valid for a period not to exceed 5 years after the date the training is completed. All personnel must receive refresher training that meets the requirements of this section and be re-certified every 5 years.

(e) [Reserved]

(f) *Standards for welding.* If you own or operate a new or existing welding affected source, you must comply with the requirements in paragraphs (f)(1) and (2) of this section for each welding operation that uses materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or has the potential to emit MFHAP. If your welding affected source uses 2,000 pounds or more per year of welding rod containing one or more MFHAP (calculated on a rolling 12-month basis), you must demonstrate that management practices or fume control measures are being implemented by complying with the requirements in paragraphs (f)(3) through (8) of this section. The requirements in paragraphs (f)(1) through (8) of this section do not apply when welding operations are being performed that do not use any materials containing MFHAP or do not have the potential to emit MFHAP.

(1) You must operate all equipment, capture, and control devices associated with welding operations according to manufacturer's instructions. You must demonstrate compliance with this requirement by maintaining a record of the manufacturer's specifications for the capture and control devices, as specified by the requirements in §63.11519(c)(4), "Notification, recordkeeping, and reporting requirements."

(2) You must implement one or more of the management practices specified in paragraphs (f)(2)(i) through (v) of this section to minimize emissions of MFHAP, as practicable, while maintaining the required welding quality through the application of sound engineering judgment.

(i) Use welding processes with reduced fume generation capabilities (e.g., gas metal arc welding (GMAW)—also called metal inert gas welding (MIG));

(ii) Use welding process variations (e.g., pulsed current GMAW), which can reduce fume generation rates;

(iii) Use welding filler metals, shielding gases, carrier gases, or other process materials which are capable of reduced welding fume generation;

(iv) Optimize welding process variables (e.g., electrode diameter, voltage, amperage, welding angle, shield gas flow rate, travel speed) to reduce the amount of welding fume generated; and

(v) Use a welding fume capture and control system, operated according to the manufacturer's specifications.

(3) *Tier 1 compliance requirements for welding.* You must perform visual determinations of welding fugitive emissions as specified in §63.11517(b), "Monitoring requirements," at the primary vent, stack, exit, or opening from the building containing the welding operations. You must keep a record of all visual determinations of fugitive emissions along with any corrective action taken in accordance with the requirements in §63.11519(c)(2), "Notification, recordkeeping, and reporting requirements."

(4) *Requirements upon initial detection of visible emissions from welding.* If visible fugitive emissions are detected during any visual determination required in paragraph (f)(3) of this section, you must comply with the requirements in paragraphs (f)(4)(i) and (ii) of this section.

(i) Perform corrective actions that include, but are not limited to, inspection of welding fume sources, and evaluation of the proper operation and effectiveness of the management practices or fume control measures implemented in accordance with paragraph (f)(2) of this section. After completing such corrective actions, you must perform a follow-up inspection for visible fugitive emissions in accordance with §63.11517(a), "Monitoring Requirements," at the primary vent, stack, exit, or opening from the building containing the welding operations.

(ii) Report all instances where visible emissions are detected, along with any corrective action taken and the results of subsequent follow-up inspections for visible emissions, and submit with your annual certification and compliance report as required by §63.11519(b)(5), "Notification, recordkeeping, and reporting requirements."

(5) *Tier 2 requirements upon subsequent detection of visible emissions.* If visible fugitive emissions are detected more than once during any consecutive 12 month period (notwithstanding the results of any follow-up inspections), you must comply with paragraphs (f)(5)(i) through (iv) of this section.

(i) Within 24 hours of the end of the visual determination of fugitive emissions in which visible fugitive emissions were detected, you must conduct a visual determination of emissions opacity, as specified in §63.11517(c), "Monitoring requirements," at the primary vent, stack, exit, or opening from the building containing the welding operations.

(ii) In lieu of the requirement of paragraph (f)(3) of this section to perform visual determinations of fugitive emissions with EPA Method 22, you must perform visual determinations of emissions opacity in accordance with §63.11517(d), "Monitoring Requirements," using EPA Method 9, at the primary vent, stack, exit, or opening from the building containing the welding operations.

(iii) You must keep a record of each visual determination of emissions opacity performed in accordance with paragraphs (f)(5)(i) or (ii) of this section, along with any subsequent corrective action taken, in accordance with the requirements in §63.11519(c)(3), "Notification, recordkeeping, and reporting requirements."

(iv) You must report the results of all visual determinations of emissions opacity performed in accordance with paragraphs (f)(5)(i) or (ii) of this section, along with any subsequent corrective action taken, and submit with your annual certification and compliance report as required by §63.11519(b)(6), "Notification, recordkeeping, and reporting requirements."

(6) *Requirements for opacities less than or equal to 20 percent but greater than zero.* For each visual determination of emissions opacity performed in accordance with paragraph (f)(5) of this section for which the average of the six-minute average opacities recorded is 20 percent or less but greater than zero, you must perform corrective actions, including inspection of all welding fume sources, and evaluation of the proper operation and effectiveness of the management practices or fume control measures implemented in accordance with paragraph (f)(2) of this section.

(7) *Tier 3 requirements for opacities exceeding 20 percent.* For each visual determination of emissions opacity performed in accordance with paragraph (f)(5) of this section for which the average of the six-minute average opacities recorded exceeds 20 percent, you must comply with the requirements in paragraphs (f)(7)(i) through (v) of this section.

(i) You must submit a report of exceedence of 20 percent opacity, along with your annual certification and compliance report, as specified in §63.11519(b)(8), "Notification, recordkeeping, and reporting requirements," and according to the requirements of §63.11519(b)(1), "Notification, recordkeeping, and reporting requirements."

(ii) Within 30 days of the opacity exceedence, you must prepare and implement a Site-Specific Welding Emissions Management Plan, as specified in paragraph (f)(8) of this section. If you have already prepared a Site-Specific Welding Emissions Management Plan in accordance with this paragraph, you must prepare and implement a revised Site-Specific Welding Emissions Management Plan within 30 days.

(iii) During the preparation (or revision) of the Site-Specific Welding Emissions Management Plan, you must continue to perform visual determinations of emissions opacity, beginning on a daily schedule as specified in §63.11517(d), "Monitoring Requirements," using EPA Method 9, at the primary vent, stack, exit, or opening from the building containing the welding operations.

(iv) You must maintain records of daily visual determinations of emissions opacity performed in accordance with paragraph (f)(7)(iii) of this section, during preparation of the Site-Specific Welding Emissions Management Plan, in accordance with the requirements in §63.11519(b)(9), "Notification, recordkeeping, and reporting requirements."

(v) You must include these records in your annual certification and compliance report, according to the requirements of §63.11519(b)(1), "Notification, recordkeeping, and reporting requirements."

(8) *Site-Specific Welding Emissions Management Plan*. The Site-Specific Welding Emissions Management Plan must comply with the requirements in paragraphs (f)(8)(i) through (iii) of this section.

(i) Site-Specific Welding Emissions Management Plan must contain the information in paragraphs (f)(8)(i)(A) through (F) of this section.

(A) Company name and address;

(B) A list and description of all welding operations which currently comprise the welding affected source;

(C) A description of all management practices and/or fume control methods in place at the time of the opacity exceedence;

(D) A list and description of all management practices and/or fume control methods currently employed for the welding affected source;

(E) A description of additional management practices and/or fume control methods to be implemented pursuant to paragraph (f)(7)(ii) of this section, and the projected date of implementation; and

(F) Any revisions to a Site-Specific Welding Emissions Management Plan must contain copies of all previous plan entries, pursuant to paragraphs (f)(8)(i)(D) and (E) of this section.

(ii) The Site-Specific Welding Emissions Management Plan must be updated annually to contain current information, as required by paragraphs (f)(8)(i)(A) through (C) of this section, and submitted with your annual certification and compliance report, according to the requirements of §63.11519(b)(1), "Notification, recordkeeping, and reporting requirements."

(iii) You must maintain a copy of the current Site-Specific Welding Emissions Management Plan in your records in a readily-accessible location for inspector review, in accordance with the requirements in §63.11519(c)(12), "Notification, recordkeeping, and reporting requirements."

§ 63.11517 What are my monitoring requirements?

(a) *Visual determination of fugitive emissions, general*. Visual determination of fugitive emissions must be performed according to the procedures of EPA Method 22, of 40 CFR part 60, Appendix A-7. You must conduct the EPA Method 22 test while the affected source is operating under normal conditions. The duration of each EPA Method 22 test must be at least 15 minutes, and visible emissions will be considered to be present if they are detected for more than six minutes of the fifteen minute period.

(b) *Visual determination of fugitive emissions, graduated schedule*. Visual determinations of fugitive emissions must be performed in accordance with paragraph (a) of this section and according to the schedule in paragraphs (b)(1) through (4) of this section.

(1) *Daily Method 22 Testing*. Perform visual determination of fugitive emissions once per day, on each day the process is in operation, during operation of the process.

(2) *Weekly Method 22 Testing*. If no visible fugitive emissions are detected in consecutive daily EPA Method 22 tests, performed in accordance with paragraph (b)(1) of this section for 10 days of work day operation of the process, you may decrease the frequency of EPA Method 22 testing to once every five days of operation of the process (one calendar week). If visible fugitive emissions are detected during these tests, you must resume EPA Method 22 testing of that operation once per day during each day that the process is in operation, in accordance with paragraph (b)(1) of this section.

(3) *Monthly Method 22 Testing*. If no visible fugitive emissions are detected in four consecutive weekly EPA Method 22 tests performed in accordance with paragraph (b)(2) of this section, you may decrease the frequency of EPA Method 22 testing to once per 21 days of operation of the process (one calendar month). If visible fugitive emissions

are detected during these tests, you must resume weekly EPA Method 22 in accordance with paragraph (b)(2) of this section.

(4) *Quarterly Method 22 Testing.* If no visible fugitive emissions are detected in three consecutive monthly EPA Method 22 tests performed in accordance with paragraph (b)(3) of this section, you may decrease the frequency of EPA Method 22 testing to once per 60 days of operation of the process (3 calendar months). If visible fugitive emissions are detected during these tests, you must resume monthly EPA Method 22 in accordance with paragraph (b)(3) of this section.

(c) *Visual determination of emissions opacity for welding Tier 2 or 3, general.* Visual determination of emissions opacity must be performed in accordance with the procedures of EPA Method 9, of 40 CFR part 60, Appendix A-4, and while the affected source is operating under normal conditions. The duration of the EPA Method 9 test shall be thirty minutes.

(d) *Visual determination of emissions opacity for welding Tier 2 or 3, graduated schedule.* You must perform visual determination of emissions opacity in accordance with paragraph (c) of this section and according to the schedule in paragraphs (d)(1) through (5) of this section.

(1) *Daily Method 9 testing for welding, Tier 2 or 3.* Perform visual determination of emissions opacity once per day during each day that the process is in operation.

(2) *Weekly Method 9 testing for welding, Tier 2 or 3.* If the average of the six minute opacities recorded during any of the daily consecutive EPA Method 9 tests performed in accordance with paragraph (d)(1) of this section does not exceed 20 percent for 10 days of operation of the process, you may decrease the frequency of EPA Method 9 testing to once per five days of consecutive work day operation. If opacity greater than 20 percent is detected during any of these tests, you must resume testing every day of operation of the process according to the requirements of paragraph (d)(1) of this section.

(3) *Monthly Method 9 testing for welding Tier 2 or 3.* If the average of the six minute opacities recorded during any of the consecutive weekly EPA Method 9 tests performed in accordance with paragraph (d)(2) of this section does not exceed 20 percent for four consecutive weekly tests, you may decrease the frequency of EPA Method 9 testing to once per every 21 days of operation of the process. If visible emissions opacity greater than 20 percent is detected during any monthly test, you must resume testing every five days of operation of the process according to the requirements of paragraph (d)(2) of this section.

(4) *Quarterly Method 9 testing for welding Tier 2 or 3.* If the average of the six minute opacities recorded during any of the consecutive weekly EPA Method 9 tests performed in accordance with paragraph (d)(3) of this section does not exceed 20 percent for three consecutive monthly tests, you may decrease the frequency of EPA Method 9 testing to once per every 120 days of operation of the process. If visible emissions opacity greater than 20 percent is detected during any quarterly test, you must resume testing every 21 days (month) of operation of the process according to the requirements of paragraph (d)(3) of this section.

(5) *Return to Method 22 testing for welding, Tier 2 or 3.* If, after two consecutive months of testing, the average of the six minute opacities recorded during any of the monthly EPA Method 9 tests performed in accordance with paragraph (d)(3) of this section does not exceed 20 percent, you may resume EPA Method 22 testing as in paragraphs (b)(3) and (4) of this section. In lieu of this, you may elect to continue performing EPA Method 9 tests in accordance with paragraphs (d)(3) and (4) of this section.

§ 63.11518 [Reserved]

§ 63.11519 What are my notification, recordkeeping, and reporting requirements?

(a) *What notifications must I submit? —(1) Initial notification.* If you are the owner or operator of an area source in one of the nine metal fabrication and finishing source categories, as defined in §63.11514 "Am I subject to this subpart?," you must submit the Initial Notification required by §63.9(b) "General Provisions," for a new affected source no later than 120 days after initial startup or November 20, 2008, whichever is later. For an existing affected source, you must

submit the Initial Notification no later than July 25, 2011. Your Initial Notification must provide the information specified in paragraphs (a)(1)(i) through (iv) of this section.

(i) The name, address, phone number and e-mail address of the owner and operator;

(ii) The address (physical location) of the affected source;

(iii) An identification of the relevant standard (i.e., this subpart); and

(iv) A brief description of the type of operation. For example, a brief characterization of the types of products (e.g., aerospace components, sports equipment, etc.), the number and type of processes, and the number of workers usually employed.

(2) *Notification of compliance status.* If you are the owner or operator of an existing affected source, you must submit a notification of compliance status on or before November 22, 2011. If you are the owner or operator of a new affected source, you must submit a notification of compliance status within 120 days after initial startup, or by November 20, 2008, whichever is later. You are required to submit the information specified in paragraphs (a)(2)(i) through (iv) of this section with your notification of compliance status:

(i) Your company's name and address;

(ii) A statement by a responsible official with that official's name, title, phone number, e-mail address and signature, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart;

(iii) If you operate any spray painting affected sources, the information required by §63.11516(e)(3)(vi)(C), "Compliance demonstration," or §63.11516(e)(4)(ix)(C), "Compliance demonstration," as applicable; and

(iv) The date of the notification of compliance status.

(b) *What reports must I prepare or submit?—(1) Annual certification and compliance reports.* You must prepare and submit annual certification and compliance reports for each affected source according to the requirements of paragraphs (b)(2) through (7) of this section. The annual certification and compliance reporting requirements may be satisfied by reports required under other parts of the CAA, as specified in paragraph (b)(3) of this section.

(2) *Dates.* Unless the Administrator has approved or agreed to a different schedule for submission of reports under §63.10(a), "General Provisions," you must prepare and submit each annual certification and compliance report according to the dates specified in paragraphs (b)(2)(i) through (iii) of this section. Note that the information reported for each of the months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation.

(i) The first annual certification and compliance report must cover the first annual reporting period which begins the day after the compliance date and ends on December 31.

(ii) Each subsequent annual certification and compliance report must cover the subsequent semiannual reporting period from January 1 through December 31.

(iii) Each annual certification and compliance report must be prepared and submitted no later than January 31 and kept in a readily-accessible location for inspector review. If an exceedence has occurred during the year, each annual certification and compliance report must be submitted along with the exceedence reports, and postmarked or delivered no later than January 31.

(3) *Alternate dates.* For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, "Title V."

(i) If the permitting authority has established dates for submitting annual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), "Title V," you may prepare or submit, if required, the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the date specified in paragraph (b)(2)(iii) of this section.

(ii) If an affected source prepares or submits an annual certification and compliance report pursuant to this section along with, or as part of, the monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), "Title V," and the compliance report includes all required information concerning exceedences of any limitation in this subpart, its submission will be deemed to satisfy any obligation to report the same exceedences in the annual monitoring report. However, submission of an annual certification and compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permitting authority.

(4) *General requirements.* The annual certification and compliance report must contain the information specified in paragraphs (b)(4)(i) through (iii) of this section, and the information specified in paragraphs (b)(5) through (7) of this section that is applicable to each affected source.

(i) Company name and address;

(ii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; and

(iii) Date of report and beginning and ending dates of the reporting period. The reporting period is the 12-month period ending on December 31. Note that the information reported for the 12 months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation.

(5) *Visual determination of fugitive emissions requirements.* The annual certification and compliance report must contain the information specified in paragraphs (b)(5)(i) through (iii) of this section for each affected source which performs visual determination of fugitive emissions in accordance with §63.11517(a), "Monitoring requirements."

(i) The date of every visual determination of fugitive emissions which resulted in detection of visible emissions;

(ii) A description of the corrective actions taken subsequent to the test; and

(iii) The date and results of the follow-up visual determination of fugitive emissions performed after the corrective actions.

(6) *Visual determination of emissions opacity requirements.* The annual certification and compliance report must contain the information specified in paragraphs (b)(6)(i) through (iii) of this section for each affected source which performs visual determination of emissions opacity in accordance with §63.11517(c), "Monitoring requirements."

(i) The date of every visual determination of emissions opacity;

(ii) The average of the six-minute opacities measured by the test; and

(iii) A description of any corrective action taken subsequent to the test.

(7) [Reserved]

(8) *Exceedences of 20 percent opacity for welding affected sources.* As required by §63.11516(f)(7)(i), "Requirements for opacities exceeding 20 percent," you must prepare an exceedence report whenever the average of the six-minute average opacities recorded during a visual determination of emissions opacity exceeds 20 percent. This report must be submitted along with your annual certification and compliance report according to the requirements in paragraph (b)(1) of this section, and must contain the information in paragraphs (b)(8)(iii)(A) and (B) of this section.

(A) The date on which the exceedence occurred; and

(B) The average of the six-minute average opacities recorded during the visual determination of emissions opacity.

(9) *Site-specific Welding Emissions Management Plan reporting.* You must submit a copy of the records of daily visual determinations of emissions recorded in accordance with §63.11516(f)(7)(iv), "Tier 3 requirements for opacities exceeding 20 percent," and a copy of your Site-Specific Welding Emissions Management Plan and any subsequent revisions to the plan pursuant to §63.11516(f)(8), "Site-specific Welding Emission Management Plan," along with your annual certification and compliance report, according to the requirements in paragraph (b)(1) of this section.

(c) *What records must I keep?* You must collect and keep records of the data and information specified in paragraphs (c)(1) through (13) of this section, according to the requirements in paragraph (c)(14) of this section.

(1) *General compliance and applicability records.* Maintain information specified in paragraphs (c)(1)(i) through (ii) of this section for each affected source.

(i) Each notification and report that you submitted to comply with this subpart, and the documentation supporting each notification and report.

(ii) Records of the applicability determinations as in §63.11514(b)(1) through (5), "Am I subject to this subpart," listing equipment included in its affected source, as well as any changes to that and on what date they occurred, must be maintained for 5 years and be made available for inspector review at any time.

(2) *Visual determination of fugitive emissions records.* Maintain a record of the information specified in paragraphs (c)(2)(i) through (iii) of this section for each affected source which performs visual determination of fugitive emissions in accordance with §63.11517(a), "Monitoring requirements."

(i) The date and results of every visual determination of fugitive emissions;

(ii) A description of any corrective action taken subsequent to the test; and

(iii) The date and results of any follow-up visual determination of fugitive emissions performed after the corrective actions.

(3) *Visual determination of emissions opacity records.* Maintain a record of the information specified in paragraphs (c)(3)(i) through (iii) of this section for each affected source which performs visual determination of emissions opacity in accordance with §63.11517(c), "Monitoring requirements."

(i) The date of every visual determination of emissions opacity; and

(ii) The average of the six-minute opacities measured by the test; and

(iii) A description of any corrective action taken subsequent to the test.

(4) Maintain a record of the manufacturer's specifications for the control devices used to comply with §63.11516, "What are my standards and management practices?"

(5) *Spray paint booth filter records.* Maintain a record of the filter efficiency demonstrations and spray paint booth filter maintenance activities, performed in accordance with §63.11516(d)(1)(ii) and (iii), "Requirements for spray painting objects in spray booths or spray rooms."

(6) *Waterspray booth or water curtain efficiency tests.* Maintain a record of the water curtain efficiency demonstrations performed in accordance with §63.11516(d)(1)(ii), "Requirements for spray painting objects in spray booths or spray rooms."

(7) *HVLP or other high transfer efficiency spray delivery system documentation records.* Maintain documentation of HVLP or other high transfer efficiency spray paint delivery systems, in compliance with §63.11516(d)(3),

"Requirements for spray painting of all objects." This documentation must include the manufacturer's specifications for the equipment and any manufacturer's operation instructions. If you have obtained written approval for an alternative spray application system in accordance with §63.11516(d)(2), "Spray painting of all objects," you must maintain a record of that approval along with documentation of the demonstration of equivalency.

(8) *HVLP or other high transfer efficiency spray delivery system employee training documentation records.* Maintain certification that each worker performing spray painting operations has completed the training specified in §63.11516(d)(6), "Requirements for spray painting of all objects," with the date the initial training and the most recent refresher training was completed.

(9)–(10) [Reserved]

(11) *Visual determination of emissions opacity performed during the preparation (or revision) of the Site-Specific Welding Emissions Management Plan.* You must maintain a record of each visual determination of emissions opacity performed during the preparation (or revision) of a Site-Specific Welding Emissions Management Plan, in accordance with §63.11516(f)(7)(iii), "Requirements for opacities exceeding 20 percent."

(12) *Site-Specific Welding Emissions Management Plan.* If you have been required to prepare a plan in accordance with §63.11516(f)(7)(iii), "Site-Specific Welding Emissions Management Plan," you must maintain a copy of your current Site-Specific Welding Emissions Management Plan in your records and it must be readily available for inspector review.

(13) *Manufacturer's instructions.* If you comply with this subpart by operating any equipment according to manufacturer's instruction, you must keep these instructions readily available for inspector review.

(14) *Welding Rod usage.* If you operate a new or existing welding affected source which is not required to comply with the requirements of §63.11516(f)(3) through (8) because it uses less than 2,000 pounds per year of welding rod (on a rolling 12-month basis), you must maintain records demonstrating your welding rod usage on a rolling 12-month basis.

(15) Your records must be maintained according to the requirements in paragraphs (c)(14)(i) through (iii) of this section.

(i) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1), "General Provisions." Where appropriate, the records may be maintained as electronic spreadsheets or as a database.

(ii) As specified in §63.10(b)(1), "General Provisions," you must keep each record for 5 years following the date of each occurrence, measurement, corrective action, report, or record.

(iii) You must keep each record on-site for at least 2 years after the date of each occurrence, measurement, corrective action, report, or record according to §63.10(b)(1), "General Provisions." You may keep the records off-site for the remaining 3 years.

§ 63.11520 [Reserved]

Other Requirements and Information

§ 63.11521 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by EPA or a delegated authority such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency, in addition to EPA, has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your state, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency.

(c) The authorities that cannot be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (5) of this section.

(1) Approval of an alternative non-opacity emissions standard under §63.6(g), of the General Provisions of this part.

(2) Approval of an alternative opacity emissions standard under §63.6(h)(9), of the General Provisions of this part.

(3) Approval of a major change to test methods under §63.7(e)(2)(ii) and (f), of the General Provisions of this part. A “major change to test method” is defined in §63.90.

(4) Approval of a major change to monitoring under §63.8(f), of the General Provisions of this part. A “major change to monitoring” under is defined in §63.90.

(5) Approval of a major change to recordkeeping and reporting under §63.10(f), of the General Provisions of this part. A “major change to recordkeeping/reporting” is defined in §63.90.

§ 63.11522 What definitions apply to this subpart?

The terms used in this subpart are defined in the CAA; and in this section as follows:

Adequate emission capture methods are hoods, enclosures, or any other duct intake devices with ductwork, dampers, manifolds, plenums, or fans designed to draw greater than 85 percent of the airborne dust generated from the process into the control device.

Capture system means the collection of components used to capture gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

Cartridge collector means a type of control device that uses perforated metal cartridges containing a pleated paper or non-woven fibrous filter media to remove PM from a gas stream by sieving and other mechanisms. Cartridge collectors can be designed with single use cartridges, which are removed and disposed after reaching capacity, or continuous use cartridges, which typically are cleaned by means of a pulse-jet mechanism.

Confined abrasive blasting enclosure means an enclosure that includes a roof and at least two complete walls, with side curtains and ventilation as needed to insure that no air or PM exits the enclosure while dry abrasive blasting is performed. Apertures or slots may be present in the roof or walls to allow for mechanized transport of the blasted objects with overhead cranes, or cable and cord entry into the dry abrasive blasting chamber.

Control device means equipment installed on a process vent or exhaust system that reduces the quantity of a pollutant that is emitted to the air.

Dry abrasive blasting means cleaning, polishing, conditioning, removing or preparing a surface by propelling a stream of abrasive material with compressed air against the surface. Hydroblasting, wet abrasive blasting, or other abrasive blasting operations which employ liquids to reduce emissions are not dry abrasive blasting.

Dry grinding and dry polishing with machines means grinding or polishing without the use of lubricating oils or fluids in fixed or stationary machines. Hand grinding, hand polishing, and bench top dry grinding and dry polishing are not included under this definition.

Fabric filter means a type of control device used for collecting PM by filtering a process exhaust stream through a filter or filter media; a fabric filter is also known as a baghouse.

Facility maintenance means operations performed as part of the routine repair or renovation of process equipment, machinery, control equipment, and structures that comprise the infrastructure of the affected facility and that are necessary for the facility to function in its intended capacity. Facility maintenance also includes operations associated with the installation of new equipment or structures, and any processes as part of janitorial activities. Facility maintenance includes operations on stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Facility maintenance also includes operations performed on mobile equipment, such as fork trucks, that are used in a manufacturing facility and which are maintained in that same facility. Facility maintenance does not include spray-applied coating of motor vehicles, mobile equipment, or items that routinely leave and return to the facility, such as delivery trucks, rental equipment, or containers used to transport, deliver, distribute, or dispense commercial products to customers, such as compressed gas canisters.

Filtration control device means a control device that utilizes a filter to reduce the emissions of MFHAP and other PM.

Grinding means a process performed on a workpiece to remove undesirable material from the surface or to remove burrs or sharp edges. Grinding is done using belts, disks, or wheels consisting of or covered with various abrasives.

Machining means dry metal turning, milling, drilling, boring, tapping, planing, broaching, sawing, cutting, shaving, shearing, threading, reaming, shaping, slotting, hobbing, and chamfering with machines. Shearing operations cut materials into a desired shape and size, while forming operations bend or conform materials into specific shapes. Cutting and shearing operations include punching, piercing, blanking, cutoff, parting, shearing and trimming. Forming operations include bending, forming, extruding, drawing, rolling, spinning, coining, and forging the metal. Processes specifically excluded are hand-held devices and any process employing fluids for lubrication or cooling.

Material containing MFHAP means a material containing one or more MFHAP. Any material that contains cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (as the metal), and contains manganese in amounts greater than or equal to 1.0 percent by weight (as the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material, is considered to be a material containing MFHAP.

Metal fabrication and finishing HAP (MFHAP) means any compound of the following metals: Cadmium, chromium, lead, manganese, or nickel, or any of these metals in the elemental form, with the exception of lead.

Metal fabrication and finishing source categories are limited to the nine metal fabrication and finishing source categories with the activities described in Table 1, "Description of Source Categories Affected by this Subpart." Metal fabrication or finishing operations means dry abrasive blasting, machining, spray painting, or welding in any one of the nine metal fabrication and finishing area source categories listed in Table 1, "Description of Source Categories Affected by this Subpart."

Military munitions means all ammunition products and components produced or used by or for the U.S. Department of Defense (DoD) or for the U.S. Armed Services for national defense and security, including military munitions under the control of the DoD, the U.S. Coast Guard, the National Nuclear Security Administration (NNSA), U.S. Department of Energy (DOE), and National Guard personnel. The term military munitions includes: Confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DoD components, including bulk explosives and chemical warfare agents, chemical munitions, biological weapons, rockets, guided and ballistic missiles, bombs, warheads, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, nonnuclear components of nuclear weapons, wholly inert ammunition products, and all devices and components of any items listed in this definition.

Paint means a material applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, coatings, sealants, liquid plastic coatings, caulks, inks, adhesives, and maskants. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances, or paper film or plastic film which may be pre-coated with an adhesive by the film manufacturer, are not considered paints for the purposes of this subpart.

Polishing with machines means an operation which removes fine excess metal from a surface to prepare the surface for more refined finishing procedures prior to plating or other processes. Polishing may also be employed to remove burrs on castings or stampings. Polishing is performed using hard-faced wheels constructed of muslin, canvas, felt or

leather, and typically employs natural or artificial abrasives. Polishing performed by hand without machines or in bench top operations are not considered polishing with machines for the purposes of this subpart.

Primarily engaged means the manufacturing, fabricating, or forging of one or more products listed in one of the nine metal fabrication and finishing source category descriptions in Table 1, "Description of Source Categories Affected by this Subpart," where this production represents at least 50 percent of the production at a facility, and where production quantities are established by the volume, linear foot, square foot, or other value suited to the specific industry. The period used to determine production should be the previous continuous 12 months of operation. Facilities must document and retain their rationale for the determination that their facility is not "primarily engaged" pursuant to §63.10(b)(3) of the General Provisions.

Quality control activities means operations that meet all of the following criteria:

- (1) The activities are intended to detect and correct defects in the final product by selecting a limited number of samples from the operation, and comparing the samples against specific performance criteria.
- (2) The activities do not include the production of an intermediate or final product for sale or exchange for commercial profit; for example, parts that are not sold and do not leave the facility.
- (3) The activities are not a normal part of the operation;
- (4) The activities do not involve fabrication of tools, equipment, machinery, and structures that comprise the infrastructure of the facility and that are necessary for the facility to function in its intended capacity; that is, the activities are not facility maintenance.

Responsible official means responsible official as defined in 40 CFR 70.2.

Spray-applied painting means application of paints using a hand-held device that creates an atomized mist of paint and deposits the paint on a substrate. For the purposes of this subpart, spray-applied painting does not include the following materials or activities:

- (1) Paints applied from a hand-held device with a paint cup capacity that is less than 3.0 fluid ounces (89 cubic centimeters).
- (2) Surface coating application using powder coating, hand-held, non-refillable aerosol containers, or non-atomizing application technology, including, but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, or marking pens.
- (3) Painting operations that normally require the use of an airbrush or an extension on the spray gun to properly reach limited access spaces; the application of paints that contain fillers that adversely affect atomization with HVLP spray guns, and the application of paints that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.).
- (4) Thermal spray operations (also known as metallizing, flame spray, plasma arc spray, and electric arc spray, among other names) in which solid metallic or non-metallic material is heated to a molten or semi-molten state and propelled to the work piece or substrate by compressed air or other gas, where a bond is produced upon impact.

Spray booth or spray room means an enclosure with four sides and a roof where spray paint is prevented from leaving the booth during spraying by the enclosure. The roof of the spray booth or spray room may contain narrow slots for connecting the parts and products to overhead cranes, or for cord or cable entry into the spray booth or spray room.

Tool or equipment repair means equipment and devices used to repair or maintain process equipment or to prepare molds, dies, or other changeable elements of process equipment.

Totally enclosed and unvented means enclosed so that no air enters or leaves during operation.

Totally enclosed and unvented dry abrasive blasting chamber means a dry abrasive blasting enclosure which has no vents to the atmosphere, thus no emissions. A typical example of this sort of abrasive blasting enclosure is a small “glove box” enclosure, where the worker places their hands in openings or gloves that extend into the box and enable the worker to hold the objects as they are being blasted without allowing air and blast material to escape the box.

Vented dry abrasive blasting means dry abrasive blasting where the blast material is moved by air flow from within the chamber to outside the chamber into the atmosphere or into a control device.

Welding means a process which joins two metal parts by melting the parts at the joint and filling the space with molten metal.

Welding rod containing MFHAP means a welding rod that contains cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (as the metal), or that contains manganese in amounts greater than or equal to 1.0 percent by weight (as the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the welding rod.

§ 63.11523 What General Provisions apply to this subpart?

The provisions in 40 CFR part 63, subpart A, applicable to sources subject to §63.11514(a) are specified in Table 2 of this subpart.

Table 1 to Subpart XXXXXX of Part 63—Description of Source Categories Affected by This Subpart

Metal fabrication and finishing source category	Description
Electrical and Electronic Equipment Finishing Operations	Establishments primarily engaged in manufacturing motors and generators; and electrical machinery, equipment, and supplies, not elsewhere classified. The electrical machinery equipment and supplies industry sector of this source category includes establishments primarily engaged in high energy particle acceleration systems and equipment, electronic simulators, appliance and extension cords, bells and chimes, insect traps, and other electrical equipment and supplies not elsewhere classified. The motors and generators sector of this source category includes establishments primarily engaged in manufacturing electric motors (except engine starting motors) and power generators; motor generator sets; railway motors and control equipment; and motors, generators and control equipment for gasoline, electric, and oil-electric buses and trucks.
Fabricated Metal Products	Establishments primarily engaged in manufacturing fabricated metal products, such as fire or burglary resistive steel safes and vaults and similar fire or burglary resistive products; and collapsible tubes of thin flexible metal. Also, establishments primarily engaged in manufacturing powder metallurgy products, metal boxes; metal ladders; metal household articles, such as ice cream freezers and ironing boards; and other fabricated metal products not elsewhere classified.
Fabricated Plate Work (Boiler Shops)	Establishments primarily engaged in manufacturing power marine boilers, pressure and nonpressure tanks, processing and storage vessels, heat exchangers, weldments and similar products.
Fabricated Structural Metal Manufacturing	Establishments primarily engaged in fabricating iron and steel or other metal for structural purposes, such as bridges, buildings, and sections for ships, boats, and barges.
Heating Equipment, except Electric	Establishments primarily engaged in manufacturing heating equipment, except electric and warm air furnaces, including gas, oil, and stoker coal fired equipment for the automatic utilization of gaseous, liquid, and solid fuels. Products produced in this source category include low-pressure heating (steam or hot water) boilers, fireplace inserts, domestic (steam or hot water) furnaces, domestic gas burners, gas room heaters, gas infrared heating units, combination gas-oil burners, oil or gas swimming pool heaters, heating apparatus (except electric or warm air), kerosene space heaters, gas fireplace logs, domestic and industrial oil

	burners, radiators (except electric), galvanized iron nonferrous metal range boilers, room heaters (except electric), coke and gas burning salamanders, liquid or gas solar energy collectors, solar heaters, space heaters (except electric), mechanical (domestic and industrial) stokers, wood and coal-burning stoves, domestic unit heaters (except electric), and wall heaters (except electric).
Industrial Machinery and Equipment Finishing Operations	Establishments primarily engaged in construction machinery manufacturing; oil and gas field machinery manufacturing; and pumps and pumping equipment manufacturing. The construction machinery manufacturing industry sector of this source category includes establishments primarily engaged in manufacturing heavy machinery and equipment of types used primarily by the construction industries, such as bulldozers; concrete mixers; cranes, except industrial plant overhead and truck-type cranes; dredging machinery; pavers; and power shovels. Also establishments primarily engaged in manufacturing forestry equipment and certain specialized equipment, not elsewhere classified, similar to that used by the construction industries, such as elevating platforms, ship cranes, and capstans, aerial work platforms, and automobile wrecker hoists. The oil and gas field machinery manufacturing industry sector of this source category includes establishments primarily engaged in manufacturing machinery and equipment for use in oil and gas fields or for drilling water wells, including portable drilling rigs. The pumps and pumping equipment manufacturing sector of this source category includes establishments primarily engaged in manufacturing pumps and pumping equipment for general industrial, commercial, or household use, except fluid power pumps and motors. This category includes establishments primarily engaged in manufacturing domestic water and sump pumps.
Iron and Steel Forging	Establishments primarily engaged in the forging manufacturing process, where purchased iron and steel metal is pressed, pounded or squeezed under great pressure into high strength parts known as forgings. The forging process is different from the casting and foundry processes, as metal used to make forged parts is never melted and poured.
Primary Metals Products Manufacturing	Establishments primarily engaged in manufacturing products such as fabricated wire products (except springs) made from purchased wire. These facilities also manufacture steel balls; nonferrous metal brads and nails; nonferrous metal spikes, staples, and tacks; and other primary metals products not elsewhere classified.
Valves and Pipe Fittings	Establishments primarily engaged in manufacturing metal valves and pipe fittings; flanges; unions, with the exception of purchased pipes; and other valves and pipe fittings not elsewhere classified.

Table 2—to Subpart XXXXXX of Part 63—Applicability of General Provisions to Metal Fabrication or Finishing Area Sources

Instructions for Table 2 —As required in §63.11523, “General Provisions Requirements,” you must meet each requirement in the following table that applies to you.

Citation	Subject
63.1 ¹	Applicability.
63.2	Definitions.
63.3	Units and abbreviations.
63.4	Prohibited activities.
63.5	Construction/reconstruction.
63.6(a), (b)(1)–(b)(5), (c)(1), (c)(2), (c)(5), (g), (i), (j)	Compliance with standards and maintenance requirements.
63.9(a)–(d)	Notification requirements.

63.10(a), (b) except for (b)(2), (d)(1), (d)(4)	Recordkeeping and reporting.
63.12	State authority and delegations.
63.13	Addresses of State air pollution control agencies and EPA regional offices.
63.14	Incorporation by reference.
63.15	Availability of information and confidentiality.
63.16	Performance track provisions.

¹§63.11514(g), "Am I subject to this subpart?" exempts affected sources from the obligation to obtain title V operating permits.

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

Addendum to the Technical Support Document (ATSD) for a
Part 70 Significant Permit Modification

Source Background and Description

Source Name:	Nucor Vulcraft Group - St. Joe Division
Source Location:	6610 County Road 60, St. Joe, Indiana 46785
County:	DeKalb
SIC Code:	3441 (Fabricated Structural Metal) and 3444 (Sheet Metal Work)
Operation Permit No.:	T 033-32592-00027
Operation Permit Issuance Date:	May 15, 2013
Significant Permit Modification No.:	033-34369-00027
Permit Reviewer:	Brian Williams

On June 16, 2014, the Office of Air Quality (OAQ) had a notice published in the Auburn Evening Star, Auburn, Indiana, stating that Nucor Vulcraft Group - St. Joe Division had applied for a significant permit modification to modify the PSD minor limits for the existing two (2) mobile steel joist fabrication line spray coating operations, identified as Spray Coating Unit 1 and Spray Coating Unit 2. The notice also stated that the OAQ proposed to issue a significant permit modification for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

No comments were received during the public notice period.

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

- (a) Nucor Vulcraft Group - St. Joe Division and Nucor Fastener are a combined source with the potential to emit greater than 100,000 tons of GHGs per year. On March 31, 2014, Nucor Vulcraft Group - St. Joe Division and Nucor Fastener each submitted permit modification applications requesting to revise the existing emission limits and to include new emission limits in order to continue to render the requirements of PSD not applicable to this combined source. As a result, the draft significant permit modification for Nucor Fastener (No. 033-34368-00036) contained new GHG limits for the boilers, space heaters, and air makeup units at their facility. Compliance with these new limits at Nucor Fastener combined with the unlimited potential to emit GHGs from all other emission units at this combined source will render the requirements of PSD not applicable to this combined source.

However, on June 23, 2014, the US Supreme Court issued a decision on permitting of GHGs by the US EPA. Based on the ruling the 100,000 ton threshold is considered invalid. The US Supreme Court found that the EPA exceeded its statutory authority when it interpreted the Clean Air Act to require PSD and Title V permitting for stationary sources based on their greenhouse-gas emissions. Specifically, the Agency may not treat

greenhouse gases as a pollutant for purposes of defining a “major emitting facility” (or a “modification” thereof) in the PSD context or a “major source” in the Title V context. This combined source is a PSD minor source for all other PSD regulated pollutants. Therefore, IDEM OAQ has removed the GHG limits from the draft permit for Nucor Fastener. As a result, IDEM has revised the potential to emit calculations in Appendix A to reflect the removal of these limits (see table below for updated potential to emit summary). This did not require any changes to the draft permit for Nucor Vulcraft Group - St. Joe Division.

The table below summarizes the potential to emit of the entire source after issuance of this modification, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential to Emit (tons/year)									
	PM	PM10 ¹	PM2.5 ¹	SO ₂	NOx	VOC	CO	GHGs as CO ₂ e	Total HAPs	Worst Single HAP
Nucor Vulcraft Group - St. Joe Division (033-00027)										
Dip Coating, Flow Coating, or Roll Coating Application ²	0	0	0	0	0	210.00	0	0	0	0
Spray Coating Unit 1 & Spray ³ Coating Unit 2,3	40.00	40.00	40.00	0	0		0	0	0	0
Aerosol Touch- Up ²	1.26	1.26	1.26	0	0		0	0	0	0
Welding	11.67	11.67	11.67	0	0	0	0	0	7.14	Man- ganese
Natural Gas Combustion	0.20	0.80	0.80	0.06	10.48	0.58	8.80	12,648	0.20	0.19
Nucor Fastener (033-00038) ⁴	121.47	125.27	125.27	7.95	79.27	36.02	64.43	75,371	1.43	1.34 Hexane
Total PTE of Entire Source	174.61	179.00	179.00	8.01	89.74	246.60	73.23	88,019	8.77	7.14 Man- ganese
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA
¹ Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant". ² The VOC potential to emit for the dip, flow, and roll coating application process, spray coating units, and aerosol touch-up is based on PSD minor limits. ³ The PM, PM10 and PM2.5 potential to emit for the spray coating units is based on PSD minor limits. ⁴ Limited PTE based on proposed emission limits in pending Significant Permit Modification No. 033-34368-00038.										

IDEM Contact

- (a) Questions regarding this proposed significant permit modification can be directed to Brian Williams at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5375 or toll free at 1-800-451-6027 extension 4-5375.
- (b) A copy of the permit is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

Appendix A: Emission Calculations
Summary of Emissions for the Combined Source

Company Name: NUCOR Vulcraft Group - St. Joe Division and NUCOR Fastener
Significant Permit Modification No: 033-34369-00027
Permit Reviewer: Brian Williams

Unlimited Potential to Emit (tons/year)											
Source	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
NUCOR Vulcraft Group - St. Joe Division (Plant ID 033-00027)	775.87	776.47	776.47	0.06	10.48	1,021	8.80	12,648	7.34	7.14	Manganese
NUCOR Fastener (Plant ID 033-00038)	121.36	125.16	125.16	7.84	79.27	35.74	64.43	92,063	1.43	1.34	Hexane
Total	897.23	901.62	901.62	7.90	89.74	1,057	73.23	104,711	8.77	7.14	Manganese

Limited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
NUCOR Vulcraft Group - St. Joe Division (Plant ID 033-00027)	53.13	53.73	53.73	0.06	10.48	210.58	8.80	12,648	7.34	7.14	Manganese
NUCOR Fastener (Plant ID 033-00038)	121.36	125.16	125.16	7.84	79.27	35.74	64.43	92,063	1.43	1.34	Hexane
Total	174.50	178.89	178.89	7.90	89.74	246.31	73.23	104,711	8.77	7.14	Manganese

**Appendix A: Emission Calculations
Summary of Emissions**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Pit ID: 033-00027
Permit Reviewer: Brian Williams

Unlimited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
Dip Coating, Flow Coating, or Roll Coating Application	0	0	0	0	0	788.03	0	0	0	0	
Spray Coating Unit 1 and Spray Coating Unit 2	762.74	762.74	762.74	0	0	231.29	0	0	0	0	
Aerosol Touch-Up	1.26	1.26	1.26	0	0	1.16	0	0	0	0	
Welding	11.67	11.67	11.67	0	0	0	0	0	7.14	7.14	Manganese
Natural Gas Combustion	0.20	0.80	0.80	0.06	10.48	0.58	8.80	12,648	0.20	0.19	Hexane
Total	775.87	776.47	776.47	0.06	10.48	1,021.06	8.80	12,648	7.34	7.14	Manganese

Limited Potential to Emit (tons/year)												
Process/Emission Unit	PM*	PM10*	PM2.5*	SO2	NOx	VOC**	CO	GHGs as CO2e	Total HAPs	Highest Single HAP		
Dip Coating, Flow Coating, or Roll Coating Application	0	0	0	0	0	210.00	0	0	0	0		
Spray Coating Unit 1 and Spray Coating Unit 2	40.00	40.00	40.00	0	0		0	0	0	0	0	
Aerosol Touch-Up	1.26	1.26	1.26	0	0		0	0	0	0	0	
Welding	11.67	11.67	11.67	0	0	0	0	0	7.14	7.14	Manganese	
Natural Gas Combustion	0.20	0.80	0.80	0.06	10.48	0.58	8.80	12,648	0.20	0.19	Hexane	
Total	53.13	53.73	53.73	0.06	10.48	210.58	8.80	12,648	7.34	7.14	Manganese	

* The PM, PM10 and PM2.5 potential to emit for the spray coating units is based on PSD minor limits.

* The VOC potential to emit for the dip, flow, and roll coating application process, spray coating units, and aerosol touch-up is based on PSD minor limits.

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Plt ID: 033-00027
Permit Reviewer: Brian Williams

Dip coating, Flow coating, or Roll coating application

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Super Long Span Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	1.77	10	3.05	1.15	20.33	487.84	89.03	0.00	5.25	100%
Long Span Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	2.09	10	3.05	1.15	24.00	576.04	105.13	0.00	5.25	100%
Middle Span Line	11.1	1.80%	0.00%	1.80%	0.00%	38.46%	2.1	10	0.20	0.20	4.20	100.70	18.38	0.00	0.52	100%
Short Span Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	3.26	9	3.05	1.15	33.69	808.66	147.58	0.00	5.25	100%
Combo Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	3.23	12	3.05	1.15	44.51	1068.29	194.96	0.00	5.25	100%
Bridging Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	2.1	10	3.05	1.15	24.12	578.79	105.63	0.00	5.25	100%
Deck Line	9.1	54.44%	51.30%	3.10%	56.00%	39.55%	1.3	40	0.64	0.28	14.67	352.06	64.25	0.00	0.71	100%
	10.1	46.61%	44.10%	2.50%	53.30%	41.19%	1.3	40	0.54	0.25	13.13	315.12	57.51	0.00	0.61	100%
Deck Line - Edge Coater	9.2	67.02%	55.50%	11.50%	61.50%	23.61%	0.03	40	2.75	1.06	1.27	30.47	5.56	0.00	4.48	100%
788.03														0.00		

Spray Coating Unit 1 and Spray Coating Unit 2, each

Line	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	Transfer Efficiency
Super Long Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	0.00%	1.77000	10.000	0.52	0.52	9.19	220.68	40.27	174.15	60%
Long Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	0.00%	2.09000	10.000	0.52	0.52	10.86	260.57	47.55	205.64	60%
Combo Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	0.00%	3.23000	12.000	0.52	0.52	20.14	483.24	88.19	381.37	60%
Middle Span Line	Century 220-D-407	11.1	41.55%	34.3%	7.3%	0.0%	0.00%	3.26000	10.000	0.81	0.81	26.40	633.68	115.65	370.89	60%
Short Span Line	Century 220-D-509A	10.9	52.13%	47.3%	4.8%	0.0%	0.00%	3.26000	9.000	0.52	0.52	15.38	369.18	67.38	268.22	60%
Uncontrolled Potential Emissions for One Spray Coating Unit														115.65	381.37	
Uncontrolled Potential Emissions for Two Spray Coating Units														231.29	762.74	

Aerosol Touch-Up

Line	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Usage (gal/yr)	Pounds VOC per gallon of coating less water	Potential VOC tons per year	Particulate Potential (ton/yr)
Bridging Line	Marcus SP-12598-7	9.8	50.46%	37.4%	13.0%	0.0%	52.000	1.276	0.13	0.13
Deck Line	Century 220-W-203C	9.5	54.27%	38.2%	16.1%	0.0%	52.000	1.527	0.13	0.11
	Century 220-W-167C	11.1	43.86%	30.4%	13.5%	0.0%	52.000	1.490	0.13	0.16
Deck Line - Edge Coater	Century 220-C-403	9.0	46.64%	25.6%	21.1%	0.0%	52.000	1.890	0.11	0.12
Super Long Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	52.000	0.519	0.13	0.15
Long Span	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	52.000	0.519	0.13	0.15
Combo Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	52.000	0.534	0.13	0.15
Middle Span Line	Century 220-D-406	11.1	41.55%	34.3%	7.3%	0.0%	52.000	0.757	0.12	0.17
Short Span Line	Century 220-D-509A	10.4	52.13%	47.3%	4.8%	0.0%	52.000	0.500	0.14	0.13
1.16									1.26	

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
 Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
 Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
 Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
 Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
 Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
 Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
 Total = Worst Coating + Sum of all solvents used

**Appendix A: Emissions Calculations
Welding**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Pit ID: 033-00027
Permit Reviewer: Brian Williams

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
			PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING											
GMAW	1	512.5	0.0052	0.0032	1.00E-06	1.00E-06	2.67	1.63	5.13E-04	5.13E-04	1.63
EMISSION TOTALS											
Potential Emissions lbs/hr							2.67	1.63	0.001	0.001	1.63
Potential Emissions lbs/day							63.96	39.11	0.012	0.012	39.14
Potential Emissions tons/year							11.67	7.14	0.002	0.002	7.14

Methodology:

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Pit ID: 033-00027
Permit Reviewer: Brian Williams

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)
Space Heaters	17.60
Air Makeup Units	5.80
Combo Line Oven	1.00
Total	24.40

2. Combustion Emissions - Criteria Pollutants

NOx Burner Type	Fuel Heat Value (MMBtu/MMCF)	Emission Factor (lbs/MMCF)						
		PM*	PM10*	direct PM2.5	SO ₂	NOx**	VOC	CO
Ordinary Burners	1,020	1.9	7.6	7.6	0.6	100	5.5	84.0

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

** Emission factors for NOx: Uncontrolled = 100 lbs/MMCF, Low NOx Burners = 50 lbs/MMCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, and 1.4-2, SCC 1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03. (7/98)

Emission Unit ID	Potential Throughput (MMCF/yr)	Potential To Emit (tons/yr)						
		PM	PM10	direct PM2.5	SO ₂	NOx	VOC	CO
Space Heaters	151.15	0.14	0.57	0.57	0.05	7.56	0.42	6.35
Air Makeup Units	49.81	0.05	0.19	0.19	0.015	2.49	0.14	2.09
Combo Line Oven	8.59	0.008	0.03	0.03	0.003	0.43	0.02	0.36
Total	209.55	0.20	0.80	0.80	0.06	10.48	0.58	8.80

Methodology

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

Potential To Emit (tons/year) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Continued**

3. Combustion Emissions - HAP Pollutants

Emission Factor (lbs/MMCF)									
Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel
2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	1.1E-03	1.4E-03	3.8E-04	2.6E-04	2.1E-03

Potential To Emit (tons/yr)												
Emission Unit ID	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel	Total HAPs	Single HAP
Space Heaters	1.59E-04	9.07E-05	5.67E-03	1.36E-01	2.57E-04	8.31E-05	1.06E-04	2.87E-05	1.96E-05	1.59E-04	1.43E-01	1.36E-01
Air Makeup Units	5.23E-05	2.99E-05	1.87E-03	4.48E-02	8.47E-05	2.74E-05	3.49E-05	9.46E-06	6.48E-06	5.23E-05	4.70E-02	4.48E-02
Combo Line Oven	9.02E-06	5.15E-06	3.22E-04	7.73E-03	1.46E-05	4.72E-06	6.01E-06	1.63E-06	1.12E-06	9.02E-06	8.10E-03	7.73E-03
Total	2.20E-04	1.26E-04	7.86E-03	1.89E-01	3.56E-04	1.15E-04	1.47E-04	3.98E-05	2.72E-05	2.20E-04	1.98E-01	1.89E-01

HAP emission factors are from AP 42, Chapter 1.4, Tables 1.4-3 and 1.4-4. (7/98)

Methodology

Potential To Emit (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

4. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/MMCF)		
CO2	CH4	N2O
120,000	2.3	2.2

Potential To Emit (tons/yr)				
Emission Unit ID	CO2	CH4	N2O	CO2e
Space Heaters	9,069.18	0.17	0.17	9,123.07
Air Makeup Units	2,988.71	0.06	0.05	3,006.47
Combo Line Oven	515.29	0.010	0.009	518.36
Total	12,573.18	0.24	0.23	12,647.89

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Summary of Emissions**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Unlimited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
Boiler, Installed in 1994	0.09	0.33	0.33	0.03	6.10	0.47	3.54	5,996.38	0.08	0.08	Hexane
Boiler, EP54	0.08	0.28	0.28	0.02	5.21	0.40	3.02	5,117.74	0.07	0.06	Hexane
Space Heaters	0.07	0.27	0.27	0.02	3.56	0.20	2.99	4,302.36	0.07	0.06	Hexane
Air Makeup Units	0.41	1.64	1.64	0.13	21.57	1.19	18.12	26,037.03	0.41	0.39	Hexane
Eight (8) Annealing Furnaces	0.42	1.68	1.68	0.13	22.05	1.21	18.53	26,622.78	0.42	0.40	Hexane
Four (4) Heat Treat Furnaces	0.36	1.44	1.44	0.11	18.96	1.04	15.93	22,885.43	0.36	0.34	Hexane
Sulfuric Acid Pickling Facility	6.92	6.92	6.92	6.92	0	0	0	0	0	0	
One (1) Nut Former	4.20	4.20	4.20	0	0	0.17	0	0	0	0	
Tumble Blaster	17.73	17.73	17.73	0	0	0	0	0	0	0	
Bolt Formers Using Smog Hog Oil Mist	84.29	84.29	84.29	0	0	0	0	0	0	0	
Bolt Formers Using Venturi Scrubbers	6.20	6.20	6.20	0	0	31.00	0	0	0	0	
Endothermic Generators	0.01	0.04	0.04	0.00	0.56	0.03	0.47	673.86	0.01	0.01	Hexane
Waste Oil Heaters	0.04	0.04	0.04	0.47	0.17	0.02	0.03	358.51	0.01	0.01	Lead
Cooling Towers	0.53	0.09	0.09	0	0	0	0	0	0	0	
Natural Gas Emergency Generator	0.005	0.01	0.01	0.0003	1.08	0.01	1.81	69.17	0.02	0.01	Formaldehyde
Total	121.36	125.16	125.16	7.84	79.27	35.74	64.43	92,063	1.43	1.34	Hexane

Limited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
Boiler, Installed in 1994	0.09	0.33	0.33	0.03	6.10	0.47	3.54	5,996	0.08	0.08	Hexane
Boiler, EP54	0.08	0.28	0.28	0.02	5.21	0.40	3.02	5,118	0.07	0.06	Hexane
Space Heaters	0.07	0.27	0.27	0.02	3.56	0.20	2.99	4,302	0.07	0.06	Hexane
Air Makeup Units	0.41	1.64	1.64	0.13	21.57	1.19	18.12	26,037	0.41	0.39	Hexane
Eight (8) Annealing Furnaces	0.42	1.68	1.68	0.13	22.05	1.21	18.53	26,623	0.42	0.40	Hexane
Four (4) Heat Treat Furnaces	0.36	1.44	1.44	0.11	18.96	1.04	15.93	22,885	0.36	0.34	Hexane
Sulfuric Acid Pickling Facility	6.92	6.92	6.92	6.92	0.00	0.00	0.00	0.00	0.00	0.00	
One (1) Nut Former	4.20	4.20	4.20	0.00	0.00	0.17	0.00	0.00	0.00	0.00	
Tumble Blaster	17.73	17.73	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bolt Formers Using Smog Hog Oil Mist	84.29	84.29	84.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bolt Formers Using Venturi Scrubbers	6.20	6.20	6.20	0.00	0.00	31.00	0.00	0.00	0.00	0.00	
Endothermic Generators	0.01	0.04	0.04	0.00	0.56	0.03	0.47	674	0.01	0.01	Hexane
Waste Oil Heaters	0.04	0.04	0.04	0.47	0.17	0.02	0.03	359	0.01	0.01	Lead
Cooling Towers	0.53	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Natural Gas Emergency Generator	0.00	0.01	0.01	0.00	1.08	0.01	1.81	69	0.02	0.01	Formaldehyde
Total	121.36	125.16	125.16	7.84	79.27	35.74	64.43	92,063	1.43	1.34	Hexane

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)
Boiler (1994)	9.81
Boiler (EP54)	8.37
Space Heaters	8.30
Air Makeup Units	50.23
Eight Annealing Furnaces	51.36
Four Heat Treat Furnaces	44.15
Endothermic Generators	1.30
Total	173.52

2. Combustion Emissions - Criteria Pollutants

NOx Burner Type	Fuel Heat Value (MMBtu/MMCF)	Emission Factor (lbs/MMCF)						
		PM*	PM10*	direct PM2.5	SO ₂	NOx**	VOC	CO
Ordinary Burners	1,020	1.9	7.6	7.6	0.6	100	5.5	84.0

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

** Emission factors for NOx: Uncontrolled = 100 lbs/MMCF, Low NOx Burners = 50 lbs/MMCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, and 1.4-2, SCC 1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03. (7/98)

Emission Unit ID	Potential Throughput (MMCF/yr)	Potential To Emit (tons/yr)						
		PM	PM10	direct PM2.5	SO ₂	NOx	VOC	CO
Boiler (1994)	84.22	0.08	0.32	0.32	0.03	4.21	0.23	3.54
Boiler (EP54)	71.88	0.07	0.27	0.27	0.022	3.59	0.20	3.02
Space Heaters	71.28	0.068	0.27	0.27	0.021	3.56	0.20	2.99
Air Makeup Units	431.39	0.41	1.64	1.64	0.13	21.57	1.19	18.12
Eight Annealing Furnaces	441.09	0.419	1.68	1.68	0.132	22.05	1.21	18.53
Four Heat Treat Furnaces	379.17	0.360	1.44	1.44	0.114	18.96	1.04	15.93
Endothermic Generators	11.16	0.011	0.04	0.04	0.003	0.56	0.03	0.47
Total	1,490.20	1.42	5.66	5.66	0.45	74.51	4.10	62.59

Methodology

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

Potential To Emit (tons/year) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Continued**

3. Combustion Emissions - HAP Pollutants

Emission Factor (lbs/MMCF)									
Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel
2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	1.1E-03	1.4E-03	3.8E-04	2.6E-04	2.1E-03

Potential To Emit (tons/yr)												
Emission Unit ID	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel	Total HAPs	Single HAP
Boiler (1994)	8.84E-05	5.05E-05	3.16E-03	7.58E-02	1.43E-04	4.63E-05	5.90E-05	1.60E-05	1.09E-05	8.84E-05	7.95E-02	7.58E-02
Boiler (EP54)	7.55E-05	4.31E-05	2.70E-03	6.47E-02	1.22E-04	3.95E-05	5.03E-05	1.37E-05	9.34E-06	7.55E-05	6.78E-02	6.47E-02
Space Heaters	7.48E-05	4.28E-05	2.67E-03	6.42E-02	1.21E-04	3.92E-05	4.99E-05	1.35E-05	9.27E-06	7.48E-05	6.73E-02	6.42E-02
Air Makeup Units	4.53E-04	2.59E-04	1.62E-02	3.88E-01	7.33E-04	2.37E-04	3.02E-04	8.20E-05	5.61E-05	4.53E-04	4.07E-01	3.88E-01
Eight Annealing Furnaces	4.63E-04	2.65E-04	1.65E-02	3.97E-01	7.50E-04	2.43E-04	3.09E-04	8.38E-05	5.73E-05	4.63E-04	4.16E-01	3.97E-01
Four Heat Treat Furnaces	3.98E-04	2.28E-04	1.42E-02	3.41E-01	6.45E-04	2.09E-04	2.65E-04	7.20E-05	4.93E-05	3.98E-04	3.58E-01	3.41E-01
Endothermic Generators	1.17E-05	6.70E-06	4.19E-04	1.00E-02	1.90E-05	6.14E-06	7.82E-06	2.12E-06	1.45E-06	1.17E-05	1.05E-02	1.00E-02
Total	1.56E-03	8.94E-04	5.59E-02	1.34E+00	2.53E-03	8.20E-04	1.04E-03	2.83E-04	1.94E-04	1.56E-03	1.41E+00	1.34E+00

HAP emission factors are from AP 42, Chapter 1.4, Tables 1.4-3 and 1.4-4. (7/98)

Hexane

Methodology

Potential To Emit (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

4. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/MMCF)		
CO2	CH4	N2O
120,000	2.3	2.2

Potential To Emit (tons/yr)				
Emission Unit ID	CO2	CH4	N2O	CO2e
Boiler (1994)	5,053.49	0.10	0.09	5,083.52
Boiler (EP54)	4,313.01	0.08	0.08	4,338.64
Space Heaters	4,276.94	0.082	0.078	4,302.36
Air Makeup Units	25,883.22	0.50	0.47	26,037.03
Eight Annealing Furnaces	26,465.51	0.507	0.485	26,622.78
Four Heat Treat Furnaces	22,750.24	0.436	0.417	22,885.43
Endothermic Generators	669.88	0.013	0.012	673.86
Total	89,412.29	1.71	1.64	89,269.76

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
LPG-Propane - Commercial Boilers
 (Heat input capacity: > 0.3 MMBtu/hr and < 10 MMBtu/hr)

Company Name: NUCOR Fastener
 Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
 Significant Permit Modification No: 033-34369-00027
 Permit Renewal No: T033-31290-00038
 Pit ID: 033-00038
 Permit Reviewer: Brian Williams

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)
Boiler	9.81
Boiler (EP54)	8.37
Total	18.18

SO2 Emission factor = 0.10 x S
 S = Sulfur Content =

0.00 grains/100ft³

2. Combustion Emissions - Criteria Pollutants

Emission Factor (lbs/kgal)						
PM*	PM10*	direct PM2.5**	SO ₂	NO _x **	VOC	CO
0.20	0.70	0.70	0.00 (0.10S)	13.00	1.00 ***TOC value	7.50

*PM emission factor is filterable PM only. PM emissions are stated to be all less than 10 microns in aerodynamic equivalent diameter, footnote in Table 1.5-1, therefore PM10 is based on the filterable and condensable PM emission factors.

** No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made.

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

Emission Unit ID	Potential Throughput (kgals/yr)	Potential To Emit (tons/yr)						
		PM	PM10	direct PM2.5	SO ₂	NO _x	VOC	CO
Boiler	938.90	0.09	0.33	0.33	0.00	6.10	0.47	3.52
Boiler (EP54)	801.32	0.080	0.28	0.28	0.000	5.21	0.40	3.00
Total	1,740.22	0.17	0.61	0.61	0.00	11.31	0.87	6.53

Methodology

1 gallon of LPG has a heating value of 94,000 Btu (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 (7/08), Table 1.5-1 (SCC #1-02-010-02)
 Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

3. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/kgal)		
CO ₂	CH ₄	N ₂ O
12,500	0.2	0.9

Emission Unit ID	Potential To Emit (tons/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Boiler	5,868.12	0.09	0.42	5,996.38
Boiler (EP54)	5,008.28	0.080	0.361	5,117.74
Total	10,876.40	0.17	0.78	11,114.12

Methodology

Emission Factors are from AP 42 (7/08),
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
 CO₂e (tons/yr) = CO₂ Potential Emission ton/yr x CO₂ GWP (1) + CH₄ Potential Emission ton/yr x CH₄ GWP (25) + N₂O Potential Emission ton/yr x N₂O GWP (298).

**Appendix A: Emission Calculations
Non-Combustion
Sulfuric Acid Pickling**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Sulfuric Acid Pickling Facility

Maximum Uncontrolled PM/PM10 (lb/hr)*	Maximum Uncontrolled PM/PM10 (ton/yr)	Capture Efficiency Fume Exhaust (%)	Control Efficiency Scrubber and Mist Eliminator (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (ton/yr)
1.58	6.92	70.0%	98.0%	0.50	2.17

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

Methodology

Maximum controlled emissions (lb/hr) = Maximum uncontrolled PM/PM10 (lb/hr) * (1-Capture Efficiency) + Maximum uncontrolled PM/PM10 (lb/hr) * Capture Efficiency * (1-Control Efficiency)

*Since there is no applicable AP-42 emissions factor available, the pound per hour emission rate is based on 360 grams per hour, as supplied by the vendor.

**Appendix A: Emission Calculations
Nut Former
Miscellaneous Operations**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

One (1) Nut Former

Facility	Material	Potential Usage (lb/yr)	VOC Content (%)	PM Content (%)	Potential VOC Emissions Before Controls (ton/yr)	Potential PM Emissions Before Controls (lb/hr)	Potential PM Emissions Before Controls (ton/yr)	Control Efficiency (%)	Potential PM Emissions After Controls (lb/hr)	Potential PM Emissions After Controls (ton/yr)
One (1) Nut Former	Cooling Oil	84,000	0.40%	10.00%	0.17	0.96	4.20	0.00	0.96	4.20

Total Emissions (tons/yr): **VOC = 0.17** **PM = 4.20** **PM Controlled = 4.20**

**Appendix A: Emission Calculations
Tumble Blaster
Miscellaneous Operations**

**Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams**

Tumble Blaster

Baghouse Collection Rate* (ton/yr)	Potential Baghouse Collection Rate (ton/yr)	Control Efficiency (%)	Potential PM** Emissions (ton/yr)	Potential PM Emissions (lb/hr)	PM Emissions After Controls (ton/yr)	PM Emissions After Controls (lb/hr)
11.7	17.55	99.0%	17.73	4.05	0.18	0.04

*Based on the information supplied by the applicant, the collection rate for the tumble blast dust collector is 11.7 tons of PM per year.

**PM=PM10

Methodology

Potential Baghouse Collection Rate = Collection Rate * 1.5

The Collection Rate is multiplied by a factor of 1.5 to account for annual variability.

Emissions (ton/yr) = Potential Baghouse Collection Rate / Control Efficiency

Emissions (lb/hr) = Emissions (ton/yr) * 2000 lb/ton / 8760 hrs/yr

Emissions After Controls = Potential Emissions * (1 - Control Efficiency)

**Appendix A: Emissions Calculations
Waste Oil Combustion
Space Heater-Vaporizing Burner**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	A = Weight % Ash =	1.00
0.50	31.51	L = Weight % Lead =	1.00
		S = Weight % Sulfur =	0.30

Emission Factor in lb/kgal	Pollutant							
	PM*	PM10*	PM2.5*	SO2	NOx	TOC	CO	Pb
	2.8 (2.8A)	0.00 (ND)	0.00 (ND)	30.0 (100S)	11.0	1.0	1.7	0.41 (0.41L)
Potential Emission in tons/yr	0.04	0.04	0.04	0.47	0.17	0.02	0.03	0.01

*No information was given in AP-42 regarding whether the PM emission factor included filterable and condensable PM.
No Emission factor listed for PM10 or PM2.5. Assumes PM10/PM2.5 = PM

HAPs - Metals					
Emission Factor in lb/kgal	Arsenic	Chromium	Cobalt	Nickel	Phosphorus
	2.5E-03	1.9E-01	5.7E-03	5.0E-02	3.6E-02
Potential Emission in tons/yr	3.94E-05	2.99E-03	8.98E-05	7.88E-04	5.67E-04

HAPs - Organics					
Emission Factor in lb/kgal	Naphthalene	Phenanthrene/ anthracene	Pyrene	Benz(a)anthracene/c hrysene	Benzo(a) pyrene
	1.3E-02	1.1E-02	7.1E-03	4.0E-03	4.0E-03
Potential Emission in tons/yr	2.05E-04	1.73E-04	1.12E-04	6.30E-05	6.30E-05

Total HAPs =	0.01
Single HAP =	0.006 Pb

Greenhouse Gas			
Emission Factor in kg/mmBtu from 40 CFR 98	CO2	CH4	N2O
	74	0.003	0.0006
Potential Emission in tons/yr	357	0.0	0.0
Summed Potential Emissions in tons/yr	357		
CO2e Total in tons/yr	359		

Methodology

Emission Factor Units are lb/1000 gal
 ND = No data was available for the PM10 emission factor.
 A = weight% ash in fuel, L = weight% lead in fuel, S = weight % sulfur in fuel
 Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 gal per 1000 gallon x 1 gal per 0.139 MM Btu
 Emission Factors from AP-42, Chapter 1.11, SCC 1-05-001-14 (Supplement B 10/96)
 Emission (tons/yr) = Throughput kgals per year x Emission Factor (lb/kgal)/2,000 lb/ton
 The five metal and five organic HAPs with the highest emission factors are presented above.
 Additional emission factors for additional HAPs with smaller emission factors are available in AP-42, 5th edition (Supplement B 10/96).
 Greenhouse Gas Emission Factor Units are in kg/mmBtu.
 Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C. Waste oil is called Used oil in 40 CFR 98.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (kg/mmBtu) x 2.20462 lb/kg x 8760 hrs/yr /2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculation:
Bolt-Former Machines**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46781
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams

Bolt Formers Using Smog Hog Oil Mist Collectors for Particulate Control

Machine #	Rate of Units Processed (ton/hr)	Cooling Oil Usage (gal/yr)	Density of Cooling Oil (lb/gal)	PM Emitted (lb PM/lb Cooling Oil)	Uncontrolled PTE PM/PM ₁₀ /PM _{2.5}		Control Efficiency (%)	Controlled PTE PM/PM ₁₀ /PM _{2.5}		Total Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Emissions (lb/hr)
					(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		
5 (Moved from Venturi Units)	1.92	7,594.94	7.59	0.5	3.29	14.41	90.0%	0.33	1.44	1.923	6.35
6 (Moved from Venturi Units)	2.21	8,742.09	7.59	0.5	3.79	16.59	90.0%	0.38	1.66	2.214	6.98
20	0.62	2,452.53	7.59	0.5	1.06	4.65	90.0%	0.11	0.47	0.621	2.98
26	1.78	7,041.14	7.59	0.5	3.05	13.36	90.0%	0.31	1.34	1.783	6.04
27	1.73	6,843.35	7.59	0.5	2.96	12.99	90.0%	0.30	1.30	1.733	5.93
28	0.92	3,639.24	7.59	0.5	1.58	6.91	90.0%	0.16	0.69	0.922	3.88
29*	0.30	1,186.71	7.59	0.5	0.51	2.25	90.0%	0.05	0.23	0.301	N/A - exempt
31	1.75	6,922.47	7.59	0.5	3.00	13.14	90.0%	0.30	1.31	1.753	5.97
Total		44,422.47			19.24	84.29		1.92	8.43		32.16 lb/hr or 140.9 tpy

*This is an Insignificant Activity as defined in 326 IAC 2-7-1(21).

Methodology

- Cooling Oil Usage is based on a total potential usage of 37,500 gal/yr for all the bolt formers using Smog Hog oil mist collection systems for particulate control. The Permittee estimates that the rate of oil to each individual bolt former will be approximately proportionate to rate of units processed by each machine.
- Density of Cooling Oil, PM Emitted, and Control Efficiency values are based off of calculations performed in Appendix A to the TSD of Part 70 Operating Permit No. T033-20219-00038.
- The PTE of PM₁₀/PM_{2.5} is assumed to equal the PTE of PM.
- Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Cooling Oil Usage (gal/yr) * Density of Cooling Oil (lb/gal) * PM Emitted (lb PM/lb Cooling Oil) * (1 yr / 8760 hr)
- Controlled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) * (1 - Control Efficiency)
- PTE (ton/yr) = PTE (lb/hr) * (8760 hr/yr) * (1 ton / 2000 lb)
- Total Process Weight Rate (ton/hr) = Rate of Units Processed (ton/hr) + [Cooling Oil Rate (gal/yr) * Density of Cooling Oil (lb/gal) * (1 yr/8760 hr) * (1 ton / 2000 lb)]
- 326 IAC 6-3-2 Allowable PM Emissions (lb/hr) = 4.10 * [Process Weight Rate (ton/hr)]^{0.87}
- Pursuant to 326 IAC 6-3-1(b)(14), manufacturing processes with potential emissions less than 0.551 pounds per hour are exempt from 326 IAC 6-3.

Bolt Formers Using the Venturi Scrubber Systems for Particulate Control

Machine #	Rate of Units Processed (tons/hr)	Cooling Oil Usage (lb/yr)	VOC Content (lb VOC/lb Cooling Oil)	PM Emitted (lb PM/lb Cooling Oil)	PTE VOC (ton/yr)	Uncontrolled PTE PM/PM ₁₀ /PM _{2.5}		Control Efficiency (%)	Controlled PTE PM/PM ₁₀ /PM _{2.5}		Total Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Emissions (lb/hr)
						(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		
1	6.33	18174	0.5	0.1	4.543	0.207	0.909	98.0%	0.00415	0.0182	6.33	N/A - exempt
2*	1.49	4278	0.5	0.1	1.069	0.049	0.214	98.0%	0.00098	0.0043	1.49	N/A - exempt
3*	1.53	4393	0.5	0.1	1.098	0.050	0.220	98.0%	0.00100	0.0044	1.53	N/A - exempt
4*	3.42	9819	0.5	0.1	2.455	0.112	0.491	98.0%	0.00224	0.0098	3.42	N/A - exempt
7	4.38	12575	0.5	0.1	3.144	0.144	0.629	98.0%	0.00287	0.0126	4.38	N/A - exempt
8*	1.85	5311	0.5	0.1	1.328	0.061	0.266	98.0%	0.00121	0.0053	1.85	N/A - exempt
9*	1.19	3417	0.5	0.1	0.854	0.039	0.171	98.0%	0.00078	0.0034	1.19	N/A - exempt
10 (new)	4.38	12575	0.5	0.1	3.144	0.144	0.629	98.0%	0.00287	0.0126	4.38	N/A - exempt
11	4.02	11542	0.5	0.1	2.885	0.132	0.577	98.0%	0.00264	0.0115	4.02	N/A - exempt
12*	1.52	4364	0.5	0.1	1.091	0.050	0.218	98.0%	0.00100	0.0044	1.52	N/A - exempt
13*	0.59	1694	0.5	0.1	0.423	0.019	0.085	98.0%	0.00039	0.0017	0.59	N/A - exempt
14*	0.51	1464	0.5	0.1	0.366	0.017	0.073	98.0%	0.00033	0.0015	0.51	N/A - exempt
15*	0.77	2211	0.5	0.1	0.553	0.025	0.111	98.0%	0.00050	0.0022	0.77	N/A - exempt
16*	0.84	2412	0.5	0.1	0.603	0.028	0.121	98.0%	0.00055	0.0024	0.84	N/A - exempt
17*	0.54	1550	0.5	0.1	0.388	0.018	0.078	98.0%	0.00035	0.0016	0.54	N/A - exempt
19*	0.30	861	0.5	0.1	0.215	0.010	0.043	98.0%	0.00020	0.0009	0.30	N/A - exempt
21*	0.22	632	0.5	0.1	0.158	0.007	0.032	98.0%	0.00014	0.0006	0.22	N/A - exempt
22*	0.35	1005	0.5	0.1	0.251	0.011	0.050	98.0%	0.00023	0.0010	0.35	N/A - exempt
23*	0.13	373	0.5	0.1	0.093	0.004	0.019	98.0%	0.00009	0.0004	0.13	N/A - exempt
24*	2.44	7005	0.5	0.1	1.751	0.080	0.350	98.0%	0.00160	0.0070	2.44	N/A - exempt
25	4.64	13322	0.5	0.1	3.330	0.152	0.686	98.0%	0.00304	0.0133	4.64	N/A - exempt
30*	1.75	5024	0.5	0.1	1.256	0.057	0.251	98.0%	0.00115	0.0050	1.75	N/A - exempt
Total		124000			31.00	1.42	6.20		0.03	0.12		

*Insignificant Activity as defined in 326 IAC 2-7-1(21).

Methodology

- Cooling Oil Usage is based on a total potential usage of 124,000 lb/yr for all the bolt formers using the Venturi scrubbers for particulate control. This usage represents an increase in total potential usage from 78,770 pounds per year. The Permittee estimates that the rate of oil to each individual bolt former will be approximately proportional to the rate of units processed by each machine.
- VOC Content, PM Emitted, and Control Efficiency values are based off of calculations performed in Appendix A to the TSD of Part 70 Operating Permit No. T033-20219-00038.
- PTE VOC (ton/yr) = Cooling Oil Usage (lb/yr) * VOC Content (lb VOC/lb Cooling Oil) * (1 ton / 2000 lb)
- The PTE of PM₁₀/PM_{2.5} is assumed to equal the PTE of PM.
- Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Cooling Oil Usage (lb/yr) * PM Emitted (lb PM/lb Cooling Oil) * (1 yr / 8760 hr)
- Controlled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) * (1 - Control Efficiency)
- PTE (ton/yr) = PTE (lb/hr) * (8760 hr/yr) * (1 ton / 2000 lb)
- Total Process Weight Rate (ton/hr) = Rate of Units Processed (ton/hr) + [Cooling Oil Rate (lb/yr) * (1 yr/8760 hr) * (1 ton / 2000 lb)]
- Pursuant to 326 IAC 6-3-1(b)(14), manufacturing processes with potential emissions less than 0.551 pounds per hour are exempt from 326 IAC 6-3.

**Appendix A: Emission Calculations
Cooling Towers**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

One (1) Cooling Tower at the concrete pond (1,950 gpm)

Estimated max total dissolved solids concentration of 1,250 ppm

Drift loss rate of 0.005%

$$\begin{aligned} \text{PM} &= 1,950 \text{ (gal/min)} * (1,250/1,000,000) * (8.345 \text{ lb/gal}) * 0.00005 * 60 = && 0.06 \text{ lb/hr} \\ \text{PM} &= 0.061 * 8760 / 2000 = && 0.27 \text{ tpy} \end{aligned}$$

Assume 16% of PM is PM10. Assume PM2.5 = PM10

$$\text{PM10/PM2.5} = 0.16 * 0.2673 \text{ tpy} = 0.04 \text{ tpy}$$

Two (2) Cooling Towers at the Holcroft belt heat reat furnace (each 975 gpm)

Estimated max total dissolved solids concentration of 1,250 ppm

Drift loss rate of 0.005%

$$\begin{aligned} \text{PM} &= 975 \text{ (gal/min)} * (1,250/1,000,000) * (8.345 \text{ lb/gal}) * 0.00005 * 60 = && 0.031 \text{ lb/hr} \\ \text{PM} &= 0.031 * 8760 / 2000 = && 0.13 \text{ tpy} \\ \text{PM for 2 cooling towers} &= && 0.27 \text{ tpy} \end{aligned}$$

Assume 16% of PM is PM10. Assume PM2.5 = PM10

$$\text{PM10/PM2.5} = 0.16 * 0.2673 \text{ tpy} = 0.04 \text{ tpy}$$

**Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Rich-Burn (4SRB) Engines**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Maximum Heat Input Capacity (MMBtu/hr)	1.95
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	975
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.96

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	9.50E-03	1.94E-02	1.94E-02	5.88E-04	2.21E+00	2.96E-02	3.72E+00
Potential Emissions (tons/yr)	0.0046	0.01	0.01	0.0003	1.08	0.01	1.81

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	2.79E-03	0.001
Acrolein	2.63E-03	0.001
Benzene	1.58E-03	0.001
1,3-Butadiene	6.63E-04	0.000
Formaldehyde	2.05E-02	0.010
Methanol	3.06E-03	0.001
Total PAH**	1.41E-04	0.000
Toluene	5.58E-04	0.000
Xylene	1.95E-04	0.000
Total		0.02

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-3.

**PAH = Polycyclic Aromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-3

Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]

Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	
Emission Factor in lb/MMcf**			2.2
Potential Emission in tons/yr	53.63	0.61	0.00
Summed Potential Emissions in tons/yr	54.24		
CO2e Total in tons/yr	69.17		

Methodology

*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2

**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

SO2 = Sulfur Dioxide

NOx = Nitrous Oxides

VOC - Volatile Organic Compounds

CO = Carbon Monoxide

CO2 = Carbon Dioxide

CH4 = Methane

N2O = Nitrous Oxide

CO2e = CO2 equivalent emissions

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

**Technical Support Document (TSD) for a Part 70 Significant Permit
Modification**

Source Description and Location

Source Name:	Nucor Vulcraft Group - St. Joe Division
Source Location:	6610 County Road 60, St. Joe, Indiana 46785
County:	DeKalb
SIC Code:	3441 (Fabricated Structural Metal) and 3444 (Sheet Metal Work)
Operation Permit No.:	T 033-32592-00027
Operation Permit Issuance Date:	May 15, 2013
Significant Permit Modification No.:	033-34369-00027
Permit Reviewer:	Brian Williams

Source Definition

This source consists of two (2) plants:

- (a) Nucor Vulcraft Group – St. Joe Division (Plant ID 033-00027) is located at 6610 County Road 60, St. Joe, Indiana 46785; and
- (b) Nucor Fastener (Plant ID 033-00038) is located at 6730 County Road 60, St. Joe, Indiana 46785.

On October 11, 2006, in Significant Permit Modification (033-22929-00027), a source determination concluded that Nucor Vulcraft Group – St. Joe Division and Nucor Fastener are under the common control of Nucor Corporation, and will be considered one source. These two plants are considered one source because they are located on adjacent properties, are under common ownership, and belong to the same industrial grouping. Nucor Fastener's operations are included as part of Nucor Vulcraft's Part 70 operating source. Therefore, the term "source" in the Part 70 documents refers to both Nucor Vulcraft Group – St. Joe Division and Nucor Fastener as one source.

Separate Part 70 renewal permits have been issued to Nucor Vulcraft Group – St. Joe Division and Nucor Fastener, solely for administrative purposes.

Existing Approvals

The source was issued Part 70 Operating Permit Renewal No. 033-32592-00027 on May 15, 2013. There have been no subsequent approvals issued.

County Attainment Status

The source is located in DeKalb County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. ¹
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005, for the annual PM _{2.5} standard.
PM _{2.5}	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM _{2.5} standard.
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.	

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. 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.
- (b) **PM_{2.5}**
 DeKalb County has been classified as attainment for PM_{2.5}. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct PM_{2.5} significant level at ten (10) tons per year. This rule became effective June 28, 2011. Therefore, direct PM_{2.5}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) **Other Criteria Pollutants**
 DeKalb County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status

The table below summarizes the potential to emit of the entire source (Nucor Vulcraft Group - St. Joe Division and Nucor Fastener), prior to the proposed modification at Nucor Vulcraft Group - St. Joe Division, after consideration of all enforceable limits established in the effective permits:

Pollutant	Emissions (ton/yr)
PM	244.8
PM ₁₀	249.5
PM _{2.5}	249.5
SO ₂	6.87
NO _x	76.83
VOC	248.7
CO	62.58
GHGs as CO ₂ e	94,563
HAPs	
Worst Single HAP	7.14
Total	11.05

- (a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no regulated pollutant, excluding GHGs, is emitted at a rate of two hundred fifty (250) tons per year or more, emissions of GHGs are less than one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).
- (b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).
- (c) These emissions are based upon TSD to Part 70 Operating Permit Renewal No. 033-32592-00027, issued on May 15, 2013 for Nucor Vulcraft Group - St. Joe Division.

Description of Proposed Modification

On December 26, 2013, the Office of Air Quality (OAQ) reviewed a modification application, submitted by Nucor Fastener. Nucor Fastener is a combined source with Nucor Vulcraft Group - St. Joe Division. Based on IDEM's review of the limited potential to emit calculations for this combined source, IDEM has determined that the incorrect values were used for Nucor Fastener in the most recent permit action for this combined source (Part 70 Operating Permit Renewal No. 033-32592-00027, issued on May 15, 2013). As a result, the combined limited potential to emit PM, PM₁₀, PM_{2.5}, and VOC is actually greater than 250 tons per year. In addition, the combined limited potential to emit GHGs is greater than 100,000 tons per year (see Appendix A for detailed calculations). This combined source is currently listed as being a minor source under PSD and intended to be a minor source under PSD. To address this:

- (1) On March 31, 2014, Nucor Vulcraft Group - St. Joe Division submitted a permit modification application requesting to revise the existing PM, PM₁₀, and PM_{2.5} emission limits for the existing spray coating units in order to render the requirements of PSD not applicable to this combined source.
- (2) In addition, Nucor Vulcraft Group - St. Joe Division notified IDEM that the site remediation activities have concluded and no longer generate VOC emissions. The site remediation activities had a potential to emit ten (10) tons of VOC per year. Therefore, by removing the site remediation the limited potential to emit VOC for the combined source is now less than 250 tons per year. Descriptive information for the site remediation activities was not included in the permit, so this change only affects the calculations in Appendix A.

There are no new emissions units involved this modification for Nucor Vulcraft Group - St. Joe Division.

- (3) On March 31, 2014, Nucor Fastener submitted a new modification application (033-34368-00038) requesting to modify the permit to include new GHG emission limits for the boilers, space heaters, and air makeup units at their facility. Compliance with these new limits at Nucor Fastener combined with the unlimited potential to emit GHGs from all other emission units at this combined source will render the requirements of PSD not applicable to this combined source.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – Part 70

This modification will be incorporated into the Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12(d)(1), because the modification involves significant changes in permit terms or conditions (such as a case by case determination of emission limitations, the addition of applicable NESHAP requirements, and significant changes in existing monitoring Part 70 permit terms and conditions).

Permit Level Determination – PSD

The table below summarizes the potential to emit of the entire source after issuance of this modification, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential to Emit (tons/year)									
	PM	PM10 ¹	PM2.5 ¹	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e	Total HAPs	Worst Single HAP
Nucor Vulcraft Group - St. Joe Division (033-00027)										
Dip Coating, Flow Coating, or Roll Coating Application ²	0	0	0	0	0	210.00	0	0	0	0
Spray Coating Unit 1 & Spray Coating Unit 2 ^{2,3}	40.00	40.00	40.00	0	0		0	0	0	0
Aerosol Touch- Up ²	1.26	1.26	1.26	0	0		0	0	0	0
Welding	11.67	11.67	11.67	0	0	0	0	0	7.14	Man- ganese
Natural Gas Combustion	0.20	0.80	0.80	0.06	10.48	0.58	8.80	12,648	0.20	0.19
Nucor Fastener (033-00038) ⁴	121.47	125.27	125.27	7.95	79.27	36.02	64.43	75,371	1.43	1.34 Hexane
Total PTE of Entire Source	174.61	179.00	179.00	8.01	89.74	246.60	73.23	88,019	8.77	7.14 Man- ganese
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA

¹ Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".

² The VOC potential to emit for the dip, flow, and roll coating application process, spray coating units, and aerosol touch-up is based on PSD minor limits.

³ The PM, PM10 and PM2.5 potential to emit for the spray coating units is based on PSD minor limits.

⁴ Limited PTE based on proposed emission limits in pending Significant Permit Modification No. 033-34368-00038.

This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to continue to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

- (a) The spray coatings applied at the Spray Coating Units 1 and 2 shall be limited such that the total PM emissions from Spray Coating Unit 1 and 2 shall not exceed 40 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The spray coatings applied at Spray Coating Units 1 and 2 shall be limited such that total PM10 emissions from Spray Coating Units 1 and 2 shall not exceed 40 tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The spray coatings applied at Spray Coating Units 1 and 2 shall be limited such that total PM2.5 emissions from Spray Coating Units 1 and 2 shall not exceed 40 tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units at this combined source, shall limit the source-wide total potential to emit of PM, PM10, and PM2.5 to less than 250 tons per 12 consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

Note: The existing PM, PM10, and PM2.5 limits for Spray Coating Units 1 and 2 have been decreased in this modification from 142 tons per year to 40 tons per year. This is a Title 1 change.

Federal Rule Applicability Determination

NSPS:

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

NESHAP:

Nucor Vulcraft Group - St. Joe Division is not physically modifying any emission units at the source; however, IDEM is evaluating the applicability of the National Emission Standards for Hazardous Air Pollutants for Nine Metal Fabrication and Finishing Source Categories, which was not evaluated in Part 70 Operating Permit Renewal No. 033-32592-00027, issued on May 15, 2013.

- (b) This source is subject to the National Emission Standards for Hazardous Air Pollutants for Nine Metal Fabrication and Finishing Source Categories (40 CFR 63.11514, Subpart XXXXXX), because this source is primarily engaged in operations of manufacturing fabricated structural metal (SIC code 3441), which is one of the nine source categories listed in 40 CFR 63.11514 and is an area source of HAPs. The welding stations are subject to the requirements of Subpart XXXXXX because this source uses materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP) (compounds of cadmium, chromium, lead, manganese, and nickel). Materials that contain MFHAP are defined to be materials that contain greater than 0.1 percent for carcinogens, as defined by OSHA at 29 CFR 1910.1200(d)(4), and greater than 1.0 percent for noncarcinogens. For the MFHAP, this corresponds to materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material.

The coating operations are not subject to the requirements of subpart XXXXXX because they do

not use paints that contain MFHAP.

The units subject to this rule include the following:

- (a) One (1) steel joist fabrication line, identified as Super Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, constructed in August 1991, including the following:
 - (1) a GMAW welding area
- (b) One (1) steel joist fabrication line, identified as Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:
 - (1) a GMAW welding area (constructed in September 1974)
- (c) One (1) steel joist fabrication line, identified as Middle Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:
 - (1) a GMAW welding area (constructed in March 1972)
- (d) One (1) steel joist fabrication line, identified as Short Span Line, with a maximum production capacity of nine (9) tons of steel joists per hour, including the following:
 - (1) a GMAW welding area (constructed in March 1972)
- (e) One (1) steel joist fabrication line, identified as Combo Line, with a maximum production capacity of twelve (12) tons of steel joists per hour, including the following:
 - (1) a GMAW welding area (constructed in October 1985)
- (f) One (1) steel bridging fabrication line, identified as Bridging Line, with a maximum production capacity of ten (10) tons per hour, including the following:
 - (1) a GMAW welding area (constructed in March 1972)

Applicable portions of the NESHAP are the following:

- (1) 40 CFR 63.11514(a), (b), and (c)
- (2) 40 CFR 63.11515(a)
- (3) 40 CFR 63.11516(f)
- (4) 40 CFR 63.11517
- (5) 40 CFR 63.11519(a), (b), (c)(1 through 4), (c)(11 through 15)
- (6) 40 CFR 63.11521
- (7) 40 CFR 63.11522
- (8) 40 CFR 63.11523
- (9) Table 1
- (10) Table 2

There are no testing requirements applicable to this source. This is a new requirement in the permit and a Title 1 change.

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the units except as otherwise specified in 40 CFR 63, Subpart XXXXXX.

- (c) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the modification.

CAM:

- (d) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:
- (1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;
 - (2) is subject to an emission limitation or standard for that pollutant; and
 - (3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

Nucor Vulcraft Group – St. Joe Division does not have any emission units equipped with add-on control devices. Therefore, CAM requirements do not apply for any pollutant.

State Rule Applicability Determination

The following state rules are applicable to the source due to the modification:

326 IAC 2-2 (PSD)

PSD applicability is discussed under the Permit Level Determination – PSD section.

Compliance Determination and Monitoring Requirements

The existing compliance determination and monitoring requirements will not change as a result of this modification. The source shall continue to comply with the applicable requirements and permit conditions as contained in Part 70 Operating Permit No. 033-32592-00027, issued on May 15, 2013.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 033-32592-00027. Deleted language appears as ~~strike throughs~~ and new language appears in **bold**:

- (1) The existing PM, PM10, and PM2.5 emission limits for the spray coating units in Condition D.1.2 have been decreased due to this modification. In addition, the Part 70 Quarterly Report has been updated.

...

D.1.2 PM, PM10 and PM2.5 PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, **the Permittee shall comply with the following:**

- (a) The spray coatings applied at the Spray Coating Units 1 and 2 shall be limited such that the total PM emissions from Spray Coating Unit 1 and 2 shall not exceed ~~442~~ **40** tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The spray coatings applied at Spray Coating Units 1 and 2 shall be limited such that total PM10 emissions from Spray Coating Units 1 and 2 shall not exceed ~~442~~ **40** tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The spray coatings applied at Spray Coating Units 1 and 2 shall be limited such that total PM2.5 emissions from Spray Coating Units 1 and 2 shall not exceed ~~442~~ **40** tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with the above limits, in conjunction with the potential to emit PM, PM10 and PM2.5 from **all** other emission units at the source, shall limit the source-wide PTE of ~~VOC-PM, PM10,~~ **and PM2.5** from the entire source (Nucor Vulcraft Group – St. Joe Division and Nucor Fastener)

to less than 250 tons per twelve (12) consecutive month period, each, and renders the ~~source~~
~~minor~~ **under requirements of 326 IAC 2-2.7, (PSD) not applicable.**

...

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Facility: Spray Coating Unit 1 and Spray Coating Unit 2
Parameter: total PM, PM10 and PM2.5 emissions, each
Limit: 442 **40** tons/year with compliance determined at the end of each month

...

IDEM, OAQ made additional revisions to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

- (1) The emission unit description for the existing GMAW welding areas has been revised to reflect that these units are affected facilities under 40 CFR 63, Subpart XXXXXX. In addition a new Section E.2 has been included in the permit, which contains the applicable requirements of 40 CFR 63, Subpart XXXXXX.
- (2) On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule citations listed in the permit. These changes are not changes to the underlining provisions. The change is only to cite of these rules in Section D - Preventative Maintenance Plan.
- (3) IDEM is changing the Section C Compliance Monitoring Condition to clearly describe when new monitoring for new and existing units must begin.
- (4) IDEM clarified the following condition to indicate that the analog instrument must be capable of measuring the parameters outside the normal range.
- (5) IDEM added "where applicable" to the lists in Section C - General Record Keeping Requirements to more closely match the underlying rule.

...

A.3 Emission Units and Pollution Control Equipment Summary
[326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

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

- (a) One (1) steel joist fabrication line, identified as Super Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, constructed in August 1991, including the following:

- (1) a GMAW welding area and
- (b2) one (1) dip-and-drain paint tank.

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (b) One (1) steel joist fabrication line, identified as Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:

- (1) a GMAW welding area (constructed in September 1974) and

...

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (c) One (1) steel joist fabrication line, identified as Middle Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:

(1) a GMAW welding area (constructed in March 1972) and

...

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (d) One (1) steel joist fabrication line, identified as Short Span Line, with a maximum production capacity of nine (9) tons of steel joists per hour, including the following:

(1) a GMAW welding area (constructed in March 1972) and

...

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (e) One (1) steel joist fabrication line, identified as Combo Line, with a maximum production capacity of twelve (12) tons of steel joists per hour, including the following:

(1) a GMAW welding area (constructed in October 1985), and

...

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (f) One (1) steel bridging fabrication line, identified as Bridging Line, with a maximum production capacity of ten (10) tons per hour, including the following:

(1) a GMAW welding area (constructed in March 1972),

...

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

...

C.9 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

- (a) **For new units:**
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

- (b) **For existing units:**
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance ~~or of initial start-up, whichever is later~~, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance ~~or the date of initial startup, whichever is later~~, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

...

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

~~Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.~~

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. **The analog instrument shall be capable of measuring values outside of the normal range.**

...
C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, **where applicable:**

...
Records of required monitoring information include the following, **where applicable:**

...
SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) steel joist fabrication line, identified as Super Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, constructed in August 1991, including the following:

- (1) a GMAW welding area and
(b2) one (1) dip-and-drain paint tank.

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (b) One (1) steel joist fabrication line, identified as Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:

- (1) a GMAW welding area (constructed in September 1974) and

...
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (c) One (1) steel joist fabrication line, identified as Middle Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:

- (1) a GMAW welding area (constructed in March 1972) and

...
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (d) One (1) steel joist fabrication line, identified as Short Span Line, with a maximum production capacity of nine (9) tons of steel joists per hour, including the following:

- (1) a GMAW welding area (constructed in March 1972) and

...
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

- (e) One (1) steel joist fabrication line, identified as Combo Line, with a maximum production capacity of twelve (12) tons of steel joists per hour, including the following:

... (1) a GMAW welding area (constructed in October 1985), and
...
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.
(f) One (1) steel bridging fabrication line, identified as Bridging Line, with a maximum production capacity of ten (10) tons per hour, including the following:
(1) a GMAW welding area (constructed in March 1972),
...
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.
...

D.1.6 Preventative Maintenance Plan [326 IAC 2-7-5(132)]

...
D.1.11 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.1 and D.1.2 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days-following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(3435). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

...
SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:
(a) **One (1) steel joist fabrication line, identified as Super Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, constructed in August 1991, including the following:**
(1) a GMAW welding area and
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.
(b) **One (1) steel joist fabrication line, identified as Long Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:**
(1) a GMAW welding area (constructed in September 1974) and
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.
(c) **One (1) steel joist fabrication line, identified as Middle Span Line, with a maximum production capacity of ten (10) tons of steel joists per hour, including the following:**
(1) a GMAW welding area (constructed in March 1972) and
Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.
(d) **One (1) steel joist fabrication line, identified as Short Span Line, with a maximum**

production capacity of nine (9) tons of steel joists per hour, including the following:

(1) a GMAW welding area (constructed in March 1972) and

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

(e) One (1) steel joist fabrication line, identified as Combo Line, with a maximum production capacity of twelve (12) tons of steel joists per hour, including the following:

(1) a GMAW welding area (constructed in October 1985), and

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

(f) One (1) steel bridging fabrication line, identified as Bridging Line, with a maximum production capacity of ten (10) tons per hour, including the following:

(1) a GMAW welding area (constructed in March 1972),

Under 40 CFR 63, Subpart XXXXXX, the welding area is considered an affected facility.

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

**National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements
[326 IAC 2-7-5(1)]**

E.2.1 General Provisions Relating to NESHAP [40 CFR Part 63, Subpart A] [326 IAC 20-1]

Pursuant to 40 CFR 63, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, except as otherwise specified in 40 CFR 63, Subpart XXXXXX.

E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Nine Metal Fabrication and Finishing Source Categories [40 CFR Part 63, Subpart XXXXXX]

The Permittee, which is primarily engaged in operations of manufacturing fabricated structural metal products at an area source of HAP emissions, shall comply with the following provisions of 40 CFR Part 63, Subpart XXXXXX (included as Attachment B of this permit):

- (a) 40 CFR 63.11514(a), (b), and (c)
- (b) 40 CFR 63.11515(a)
- (c) 40 CFR 63.11516(f)
- (d) 40 CFR 63.11517
- (e) 40 CFR 63.11519(a), (b), (c)(1 through 4), (c)(11 through 15)
- (f) 40 CFR 63.11521
- (g) 40 CFR 63.11522
- (h) 40 CFR 63.11523
- (i) Table 1
- (j) Table 2

...

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Permit Modification No. 033-34369-00027. The staff recommends to the Commissioner that this Part 70 Significant Permit Modification be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Brian Williams at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCM 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5375 or toll free at 1-800-451-6027 extension 4-5375.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emission Calculations
Summary of Emissions for the Combined Source

Company Name: NUCOR Vulcraft Group - St. Joe Division and NUCOR Fastener
Significant Permit Modification No: 033-34369-00027
Permit Reviewer: Brian Williams

Unlimited Potential to Emit (tons/year)											
Source	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
NUCOR Vulcraft Group - St. Joe Division (Plant ID 033-00027)	775.87	776.47	776.47	0.06	10.48	1,021	8.80	12,648	7.34	7.14	Manganese
NUCOR Fastener (Plant ID 033-00038)	121.47	125.27	125.27	7.95	79.27	36.02	64.43	92,063	1.43	1.34	Hexane
Total	897.35	901.74	901.74	8.01	89.74	1,057	73.23	104,711	8.77	7.14	Manganese

Limited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
NUCOR Vulcraft Group - St. Joe Division (Plant ID 033-00027)	53.13	53.73	53.73	0.06	10.48	210.58	8.80	12,648	7.34	7.14	Manganese
NUCOR Fastener (Plant ID 033-00038)	121.47	125.27	125.27	7.95	79.27	36.02	64.43	75,371	1.43	1.34	Hexane
Total	174.61	179.00	179.00	8.01	89.74	246.60	73.23	88,019	8.77	7.14	Manganese

**Appendix A: Emission Calculations
Summary of Emissions**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Plt ID: 033-00027
Permit Reviewer: Brian Williams

Unlimited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
Dip Coating, Flow Coating, or Roll Coating Application	0	0	0	0	0	788.03	0	0	0	0	
Spray Coating Unit 1 and Spray Coating Unit 2	762.74	762.74	762.74	0	0	231.29	0	0	0	0	
Aerosol Touch-Up	1.26	1.26	1.26	0	0	1.16	0	0	0	0	
Welding	11.67	11.67	11.67	0	0	0	0	0	7.14	7.14	Manganese
Natural Gas Combustion	0.20	0.80	0.80	0.06	10.48	0.58	8.80	12,648	0.20	0.19	Hexane
Total	775.87	776.47	776.47	0.06	10.48	1,021.06	8.80	12,648	7.34	7.14	Manganese

Limited Potential to Emit (tons/year)												
Process/Emission Unit	PM*	PM10*	PM2.5*	SO2	NOx	VOC**	CO	GHGs as CO2e	Total HAPs	Highest Single HAP		
Dip Coating, Flow Coating, or Roll Coating Application	0	0	0	0	0	210.00	0	0	0	0		
Spray Coating Unit 1 and Spray Coating Unit 2	40.00	40.00	40.00	0	0		0	0	0	0	0	
Aerosol Touch-Up	1.26	1.26	1.26	0	0		0	0	0	0	0	
Welding	11.67	11.67	11.67	0	0	0	0	0	7.14	7.14	Manganese	
Natural Gas Combustion	0.20	0.80	0.80	0.06	10.48	0.58	8.80	12,648	0.20	0.19		
Total	53.13	53.73	53.73	0.06	10.48	210.58	8.80	12,648	7.34	7.14	Manganese	

* The PM, PM10 and PM2.5 potential to emit for the spray coating units is based on PSD minor limits.

* The VOC potential to emit for the dip, flow, and roll coating application process, spray coating units, and aerosol touch-up is based on PSD minor limits.

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Plt ID: 033-00027
Permit Reviewer: Brian Williams

Dip coating, Flow coating, or Roll coating application

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Super Long Span Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	1.77	10	3.05	1.15	20.33	487.84	89.03	0.00	5.25	100%
Long Span Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	2.09	10	3.05	1.15	24.00	576.04	105.13	0.00	5.25	100%
Middle Span Line	11.1	1.80%	0.00%	1.80%	0.00%	38.46%	2.1	10	0.20	0.20	4.20	100.70	18.38	0.00	0.52	100%
Short Span Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	3.26	9	3.05	1.15	33.69	808.66	147.58	0.00	5.25	100%
Combo Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	3.23	12	3.05	1.15	44.51	1068.29	194.96	0.00	5.25	100%
Bridging Line	9.9	63.75%	52.20%	11.60%	62.30%	21.88%	2.1	10	3.05	1.15	24.12	578.79	105.63	0.00	5.25	100%
Deck Line	9.1	54.44%	51.30%	3.10%	56.00%	39.55%	1.3	40	0.64	0.28	14.67	352.06	64.25	0.00	0.71	100%
	10.1	46.61%	44.10%	2.50%	53.30%	41.19%	1.3	40	0.54	0.25	13.13	315.12	57.51	0.00	0.61	100%
Deck Line - Edge Coater	9.2	67.02%	55.50%	11.50%	61.50%	23.61%	0.03	40	2.75	1.06	1.27	30.47	5.56	0.00	4.48	100%
													788.03	0.00		

Spray Coating Unit 1 and Spray Coating Unit 2, each

Line	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	Transfer Efficiency
Super Long Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	0.00%	1.77000	10.000	0.52	0.52	9.19	220.68	40.27	174.15	60%
Long Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	0.00%	2.09000	10.000	0.52	0.52	10.86	260.57	47.55	205.64	60%
Combo Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	0.00%	3.23000	12.000	0.52	0.52	20.14	483.24	88.19	381.37	60%
Middle Span Line	Century 220-D-407	11.1	41.55%	34.3%	7.3%	0.0%	0.00%	3.26000	10.000	0.81	0.81	26.40	633.68	115.65	370.89	60%
Short Span Line	Century 220-D-509A	10.9	52.13%	47.3%	4.8%	0.0%	0.00%	3.26000	9.000	0.52	0.52	15.38	369.18	67.38	268.22	60%
													115.65	381.37		
													231.29	762.74		

Aerosol Touch-Up

Line	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Usage (gal/yr)	Pounds VOC per gallon of coating less water	Potential VOC tons per year	Particulate Potential (ton/yr)	
Bridging Line	Marcus SP-12598-7	9.8	50.46%	37.4%	13.0%	0.0%	52.000	1.276	0.13	0.13	
Deck Line	Century 220-W-203C	9.5	54.27%	38.2%	16.1%	0.0%	52.000	1.527	0.13	0.11	
	Century 220-W-167C	11.1	43.86%	30.4%	13.5%	0.0%	52.000	1.490	0.13	0.16	
Deck Line - Edge Coater	Century 220-C-403	9.0	46.64%	25.6%	21.1%	0.0%	52.000	1.890	0.11	0.12	
Super Long Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	52.000	0.519	0.13	0.15	
Long Span	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	52.000	0.519	0.13	0.15	
Combo Span Line	Armitage WD-27185VW	10.8	48.00%	43.2%	4.8%	0.0%	52.000	0.534	0.13	0.15	
Middle Span Line	Century 220-D-406	11.1	41.55%	34.3%	7.3%	0.0%	52.000	0.757	0.12	0.17	
Short Span Line	Century 220-D-509A	10.4	52.13%	47.3%	4.8%	0.0%	52.000	0.500	0.14	0.13	
									1.16	1.26	

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
 Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
 Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
 Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
 Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
 Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
 Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
 Total = Worst Coating + Sum of all solvents used

**Appendix A: Emissions Calculations
Welding**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Pit ID: 033-00027
Permit Reviewer: Brian Williams

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
			PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING											
GMAW	1	512.5	0.0052	0.0032	1.00E-06	1.00E-06	2.67	1.63	5.13E-04	5.13E-04	1.63
EMISSION TOTALS											
Potential Emissions lbs/hr							2.67	1.63	0.001	0.001	1.63
Potential Emissions lbs/day							63.96	39.11	0.012	0.012	39.14
Potential Emissions tons/year							11.67	7.14	0.002	0.002	7.14

Methodology:

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: NUCOR Vulcraft Group - St. Joe Division
Address City IN Zip: 6610 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-32592-00027
Pit ID: 033-00027
Permit Reviewer: Brian Williams

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)
Space Heaters	17.60
Air Makeup Units	5.80
Combo Line Oven	1.00
Total	24.40

2. Combustion Emissions - Criteria Pollutants

NOx Burner Type	Fuel Heat Value (MMBtu/MMCF)	Emission Factor (lbs/MMCF)						
		PM*	PM10*	direct PM2.5	SO ₂	NOx**	VOC	CO
Ordinary Burners	1,020	1.9	7.6	7.6	0.6	100	5.5	84.0

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

** Emission factors for NOx: Uncontrolled = 100 lbs/MMCF, Low NOx Burners = 50 lbs/MMCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, and 1.4-2, SCC 1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03. (7/98)

Emission Unit ID	Potential Throughput (MMCF/yr)	Potential To Emit (tons/yr)						
		PM	PM10	direct PM2.5	SO ₂	NOx	VOC	CO
Space Heaters	151.15	0.14	0.57	0.57	0.05	7.56	0.42	6.35
Air Makeup Units	49.81	0.05	0.19	0.19	0.015	2.49	0.14	2.09
Combo Line Oven	8.59	0.008	0.03	0.03	0.003	0.43	0.02	0.36
Total	209.55	0.20	0.80	0.80	0.06	10.48	0.58	8.80

Methodology

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

Potential To Emit (tons/year) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Continued**

3. Combustion Emissions - HAP Pollutants

Emission Factor (lbs/MMCF)									
Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel
2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	1.1E-03	1.4E-03	3.8E-04	2.6E-04	2.1E-03

Potential To Emit (tons/yr)												
Emission Unit ID	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel	Total HAPs	Single HAP
Space Heaters	1.59E-04	9.07E-05	5.67E-03	1.36E-01	2.57E-04	8.31E-05	1.06E-04	2.87E-05	1.96E-05	1.59E-04	1.43E-01	1.36E-01
Air Makeup Units	5.23E-05	2.99E-05	1.87E-03	4.48E-02	8.47E-05	2.74E-05	3.49E-05	9.46E-06	6.48E-06	5.23E-05	4.70E-02	4.48E-02
Combo Line Oven	9.02E-06	5.15E-06	3.22E-04	7.73E-03	1.46E-05	4.72E-06	6.01E-06	1.63E-06	1.12E-06	9.02E-06	8.10E-03	7.73E-03
Total	2.20E-04	1.26E-04	7.86E-03	1.89E-01	3.56E-04	1.15E-04	1.47E-04	3.98E-05	2.72E-05	2.20E-04	1.98E-01	1.89E-01

HAP emission factors are from AP 42, Chapter 1.4, Tables 1.4-3 and 1.4-4. (7/98)

Methodology

Potential To Emit (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

4. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/MMCF)		
CO2	CH4	N2O
120,000	2.3	2.2

Potential To Emit (tons/yr)				
Emission Unit ID	CO2	CH4	N2O	CO2e
Space Heaters	9,069.18	0.17	0.17	9,123.07
Air Makeup Units	2,988.71	0.06	0.05	3,006.47
Combo Line Oven	515.29	0.010	0.009	518.36
Total	12,573.18	0.24	0.23	12,647.89

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Summary of Emissions**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Unlimited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
Boiler, Installed in 1994	0.09	0.33	0.33	0.03	6.10	0.47	3.54	5,996.38	0.08	0.08	Hexane
Boiler, EP54	0.08	0.28	0.28	0.02	5.21	0.40	3.02	5,117.74	0.07	0.06	Hexane
Space Heaters	0.07	0.27	0.27	0.02	3.56	0.20	2.99	4,302.36	0.07	0.06	Hexane
Air Makeup Units	0.41	1.64	1.64	0.13	21.57	1.19	18.12	26,037.03	0.41	0.39	Hexane
Eight (8) Annealing Furnaces	0.42	1.68	1.68	0.13	22.05	1.21	18.53	26,622.78	0.42	0.40	Hexane
Four (4) Heat Treat Furnaces	0.36	1.44	1.44	0.11	18.96	1.04	15.93	22,885.43	0.36	0.34	Hexane
Sulfuric Acid Pickling Facility	6.92	6.92	6.92	6.92	0	0	0	0	0	0	
One (1) Nut Former	4.20	4.20	4.20	0	0	0.17	0	0	0	0	
Tumble Blaster	17.73	17.73	17.73	0	0	0	0	0	0	0	
Bolt Formers Using Smog Hog Oil Mist	84.29	84.29	84.29	0	0	0	0	0	0	0	
Bolt Formers Using Venturi Scrubbers	6.20	6.20	6.20	0	0	31.00	0	0	0	0	
Oil and Phosphate Line	0.11	0.11	0.11	0.11	0	0.19	0	0	0	0	
Parts Waxing Line	0	0	0	0	0	0.1	0	0	0	0	
Endothermic Generators	0.01	0.04	0.04	0.00	0.56	0.03	0.47	673.86	0.01	0.01	Hexane
Waste Oil Heaters	0.04	0.04	0.04	0.47	0.17	0.02	0.03	358.51	0.01	0.01	Lead
Cooling Towers	0.53	0.09	0.09	0	0	0	0	0	0	0	
Natural Gas Emergency Generator	0.005	0.01	0.01	0.0003	1.08	0.01	1.81	69.17	0.02	0.01	Formaldehyde
Total	121.47	125.27	125.27	7.95	79.27	36.02	64.43	92,063	1.43	1.34	Hexane

Limited Potential to Emit (tons/year)											
Process/Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Highest Single HAP	
Boiler, Installed in 1994	0.09	0.33	0.33	0.03	6.10	0.47	3.54	24,761	0.08	0.08	Hexane
Boiler, EP54	0.08	0.28	0.28	0.02	5.21	0.40	3.02		0.07	0.06	Hexane
Space Heaters	0.07	0.27	0.27	0.02	3.56	0.20	2.99		0.07	0.06	Hexane
Air Makeup Units	0.41	1.64	1.64	0.13	21.57	1.19	18.12		0.41	0.39	Hexane
Eight (8) Annealing Furnaces	0.42	1.68	1.68	0.13	22.05	1.21	18.53	26,623	0.42	0.40	Hexane
Four (4) Heat Treat Furnaces	0.36	1.44	1.44	0.11	18.96	1.04	15.93	22,885	0.36	0.34	Hexane
Sulfuric Acid Pickling Facility	6.92	6.92	6.92	6.92	0.00	0.00	0.00	0.00	0.00	0.00	
One (1) Nut Former	4.20	4.20	4.20	0.00	0.00	0.17	0.00	0.00	0.00	0.00	
Tumble Blaster	17.73	17.73	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bolt Formers Using Smog Hog Oil Mist	84.29	84.29	84.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bolt Formers Using Venturi Scrubbers	6.20	6.20	6.20	0.00	0.00	31.00	0.00	0.00	0.00	0.00	
Oil and Phosphate Line	0.11	0.11	0.11	0.11	0.00	0.19	0.00	0.00	0.00	0.00	
Parts Waxing Line	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	
Endothermic Generators	0.01	0.04	0.04	0.00	0.56	0.03	0.47	674	0.01	0.01	Hexane
Waste Oil Heaters	0.04	0.04	0.04	0.47	0.17	0.02	0.03	359	0.01	0.01	Lead
Cooling Towers	0.53	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Natural Gas Emergency Generator	0.00	0.01	0.01	0.00	1.08	0.01	1.81	69	0.02	0.01	Formaldehyde
Total	121.47	125.27	125.27	7.95	79.27	36.02	64.43	75,371	1.43	1.34	Hexane

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)
Boiler (1994)	9.81
Boiler (EP54)	8.37
Space Heaters	8.30
Air Makeup Units	50.23
Eight Annealing Furnaces	51.36
Four Heat Treat Furnaces	44.15
Endothermic Generators	1.30
Total	173.52

2. Combustion Emissions - Criteria Pollutants

NOx Burner Type	Fuel Heat Value (MMBtu/MMCF)	Emission Factor (lbs/MMCF)						
		PM*	PM10*	direct PM2.5	SO ₂	NOx**	VOC	CO
Ordinary Burners	1,020	1.9	7.6	7.6	0.6	100	5.5	84.0

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

** Emission factors for NOx: Uncontrolled = 100 lbs/MMCF, Low NOx Burners = 50 lbs/MMCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, and 1.4-2, SCC 1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03. (7/98)

Emission Unit ID	Potential Throughput (MMCF/yr)	Potential To Emit (tons/yr)						
		PM	PM10	direct PM2.5	SO ₂	NOx	VOC	CO
Boiler (1994)	84.22	0.08	0.32	0.32	0.03	4.21	0.23	3.54
Boiler (EP54)	71.88	0.07	0.27	0.27	0.022	3.59	0.20	3.02
Space Heaters	71.28	0.068	0.27	0.27	0.021	3.56	0.20	2.99
Air Makeup Units	431.39	0.41	1.64	1.64	0.13	21.57	1.19	18.12
Eight Annealing Furnaces	441.09	0.419	1.68	1.68	0.132	22.05	1.21	18.53
Four Heat Treat Furnaces	379.17	0.360	1.44	1.44	0.114	18.96	1.04	15.93
Endothermic Generators	11.16	0.011	0.04	0.04	0.003	0.56	0.03	0.47
Total	1,490.20	1.42	5.66	5.66	0.45	74.51	4.10	62.59

Methodology

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

Potential To Emit (tons/year) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Continued**

3. Combustion Emissions - HAP Pollutants

Emission Factor (lbs/MMCF)									
Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel
2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	1.1E-03	1.4E-03	3.8E-04	2.6E-04	2.1E-03

Potential To Emit (tons/yr)												
Emission Unit ID	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Cadmium	Chromium	Manganese	Mercury	Nickel	Total HAPs	Single HAP
Boiler (1994)	8.84E-05	5.05E-05	3.16E-03	7.58E-02	1.43E-04	4.63E-05	5.90E-05	1.60E-05	1.09E-05	8.84E-05	7.95E-02	7.58E-02
Boiler (EP54)	7.55E-05	4.31E-05	2.70E-03	6.47E-02	1.22E-04	3.95E-05	5.03E-05	1.37E-05	9.34E-06	7.55E-05	6.78E-02	6.47E-02
Space Heaters	7.48E-05	4.28E-05	2.67E-03	6.42E-02	1.21E-04	3.92E-05	4.99E-05	1.35E-05	9.27E-06	7.48E-05	6.73E-02	6.42E-02
Air Makeup Units	4.53E-04	2.59E-04	1.62E-02	3.88E-01	7.33E-04	2.37E-04	3.02E-04	8.20E-05	5.61E-05	4.53E-04	4.07E-01	3.88E-01
Eight Annealing Furnaces	4.63E-04	2.65E-04	1.65E-02	3.97E-01	7.50E-04	2.43E-04	3.09E-04	8.38E-05	5.73E-05	4.63E-04	4.16E-01	3.97E-01
Four Heat Treat Furnaces	3.98E-04	2.28E-04	1.42E-02	3.41E-01	6.45E-04	2.09E-04	2.65E-04	7.20E-05	4.93E-05	3.98E-04	3.58E-01	3.41E-01
Endothermic Generators	1.17E-05	6.70E-06	4.19E-04	1.00E-02	1.90E-05	6.14E-06	7.82E-06	2.12E-06	1.45E-06	1.17E-05	1.05E-02	1.00E-02
Total	1.56E-03	8.94E-04	5.59E-02	1.34E+00	2.53E-03	8.20E-04	1.04E-03	2.83E-04	1.94E-04	1.56E-03	1.41E+00	1.34E+00

HAP emission factors are from AP 42, Chapter 1.4, Tables 1.4-3 and 1.4-4. (7/98)

Hexane

Methodology

Potential To Emit (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

4. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/MMCF)		
CO2	CH4	N2O
120,000	2.3	2.2

Potential To Emit (tons/yr)				
Emission Unit ID	CO2	CH4	N2O	CO2e
Boiler (1994)	5,053.49	0.10	0.09	5,083.52
Boiler (EP54)	4,313.01	0.08	0.08	4,338.64
Space Heaters	4,276.94	0.082	0.078	4,302.36
Air Makeup Units	25,883.22	0.50	0.47	26,037.03
Eight Annealing Furnaces	26,465.51	0.507	0.485	26,622.78
Four Heat Treat Furnaces	22,750.24	0.436	0.417	22,885.43
Endothermic Generators	669.88	0.013	0.012	673.86
Total	89,412.29	1.71	1.64	89,269.76

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Limited Greenhouse Gas Emissions**

**Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams**

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Limited Throughput (MMCF/yr)
Boiler (1994)	9.81	84.22	391.83
Boiler (EP54)	8.37	71.88	
Space Heaters	8.30	71.28	
Air Makeup Units	50.23	431.39	

2. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/MMCF)			
Fuel Heat Value (MMBtu/MMCF)	CO2	CH4	N2O
1,020	120,000	2.3	2.2

Emission Unit ID	Limited Potential To Emit (tons/yr)			
	CO2	CH4	N2O	CO2e
Boiler (1994)	23,510	0.45	0.43	23,650
Boiler (EP54)				
Space Heaters				
Air Makeup Units				

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
LPG-Propane - Commercial Boilers
 (Heat input capacity: > 0.3 MMBtu/hr and < 10 MMBtu/hr)

Company Name: NUCOR Fastener
 Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
 Significant Permit Modification No: 033-34369-00027
 Permit Renewal No: T033-31290-00038
 Pit ID: 033-00038
 Permit Reviewer: Brian Williams

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)
Boiler	9.81
Boiler (EP54)	8.37
Total	18.18

SO2 Emission factor = 0.10 x S
 S = Sulfur Content =

0.00 grains/100ft³

2. Combustion Emissions - Criteria Pollutants

Emission Factor (lbs/kgal)						
PM*	PM10*	direct PM2.5**	SO ₂	NO _x **	VOC	CO
0.20	0.70	0.70	0.00 (0.10S)	13.00	1.00 ***TOC value	7.50

*PM emission factor is filterable PM only. PM emissions are stated to be all less than 10 microns in aerodynamic equivalent diameter, footnote in Table 1.5-1, therefore PM10 is based on the filterable and condensable PM emission factors.

** No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made.

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

Emission Unit ID	Potential Throughput (kgals/yr)	Potential To Emit (tons/yr)						
		PM	PM10	direct PM2.5	SO ₂	NO _x	VOC	CO
Boiler	938.90	0.09	0.33	0.33	0.00	6.10	0.47	3.52
Boiler (EP54)	801.32	0.080	0.28	0.28	0.000	5.21	0.40	3.00
Total	1,740.22	0.17	0.61	0.61	0.00	11.31	0.87	6.53

Methodology

1 gallon of LPG has a heating value of 94,000 Btu (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 (7/08), Table 1.5-1 (SCC #1-02-010-02)
 Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

3. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/kgal)		
CO ₂	CH ₄	N ₂ O
12,500	0.2	0.9

Emission Unit ID	Potential To Emit (tons/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Boiler	5,868.12	0.09	0.42	5,996.38
Boiler (EP54)	5,008.28	0.080	0.361	5,117.74
Total	10,876.40	0.17	0.78	11,114.12

Methodology

Emission Factors are from AP 42 (7/08),
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
 CO₂e (tons/yr) = CO₂ Potential Emission ton/yr x CO₂ GWP (1) + CH₄ Potential Emission ton/yr x CH₄ GWP (25) + N₂O Potential Emission ton/yr x N₂O GWP (298).

**Appendix A: Emission Calculations
LPG-Propane - Commercial Boilers
(Heat input capacity: > 0.3 MMBtu/hr and < 10 MMBtu/hr)
Limited Greenhouse Gas Emissions**

**Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams**

1. Process Description

Emission Unit ID	Heat Input Capacity (MMBtu/hr)	Potential Throughput (kgal/yr)	Limited Throughput (kgal/yr)
Boiler	9.81	938.9	174.02
Boiler (EP54)	8.37	801.3	
Total	18.18	1,740.22	

2. Combustion Emissions - Greenhouse Gas Emissions

Emission Factor (lbs/kgal)		
CO2	CH4	N2O
12,500	0.2	0.9

Emission Unit ID	Limited Potential To Emit (tons/yr)			
	CO2	CH4	N2O	CO2e
Boiler	1,087.64	0.02	0.08	1,111.41
Boiler (EP54)				

Methodology

Emission Factors are from AP 42 (7/08),

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Non-Combustion
Sulfuric Acid Pickling**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Sulfuric Acid Pickling Facility

Maximum Uncontrolled PM/PM10 (lb/hr)*	Maximum Uncontrolled PM/PM10 (ton/yr)	Capture Efficiency Fume Exhaust (%)	Control Efficiency Scrubber and Mist Eliminator (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (ton/yr)
1.58	6.92	70.0%	98.0%	0.50	2.17

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

Methodology

Maximum controlled emissions (lb/hr) = Maximum uncontrolled PM/PM10 (lb/hr) * (1-Capture Efficiency) + Maximum uncontrolled PM/PM10 (lb/hr) * Capture Efficiency * (1-Control Efficiency)

*Since there is no applicable AP-42 emissions factor available, the pound per hour emission rate is based on 360 grams per hour, as supplied by the vendor.

**Appendix A: Emission Calculations
Nut Former
Miscellaneous Operations**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

One (1) Nut Former

Facility	Material	Potential Usage (lb/yr)	VOC Content (%)	PM Content (%)	Potential VOC Emissions Before Controls (ton/yr)	Potential PM Emissions Before Controls (lb/hr)	Potential PM Emissions Before Controls (ton/yr)	Control Efficiency (%)	Potential PM Emissions After Controls (lb/hr)	Potential PM Emissions After Controls (ton/yr)
One (1) Nut Former	Cooling Oil	84,000	0.40%	10.00%	0.17	0.96	4.20	0.00	0.96	4.20

Total Emissions (tons/yr): **VOC = 0.17** **PM = 4.20** **PM Controlled = 4.20**

**Appendix A: Emission Calculations
Tumble Blaster
Miscellaneous Operations**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Tumble Blaster

Baghouse Collection Rate* (ton/yr)	Potential Baghouse Collection Rate (ton/yr)	Control Efficiency (%)	Potential PM** Emissions (ton/yr)	Potential PM Emissions (lb/hr)	PM Emissions After Controls (ton/yr)	PM Emissions After Controls (lb/hr)
11.7	17.55	99.0%	17.73	4.05	0.18	0.04

*Based on the information supplied by the applicant, the collection rate for the tumble blast dust collector is 11.7 tons of PM per year.

**PM=PM10

Methodology

Potential Baghouse Collection Rate = Collection Rate * 1.5

The Collection Rate is multiplied by a factor of 1.5 to account for annual variability.

Emissions (ton/yr) = Potential Baghouse Collection Rate / Control Efficiency

Emissions (lb/hr) = Emissions (ton/yr) * 2000 lb/ton / 8760 hrs/yr

Emissions After Controls = Potential Emissions * (1 - Control Efficiency)

**Appendix A: Emissions Calculations
Waste Oil Combustion
Space Heater-Vaporizing Burner**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	A = Weight % Ash =	1.00
0.50	31.51	L = Weight % Lead =	1.00
		S = Weight % Sulfur =	0.30

Emission Factor in lb/kgal	Pollutant							
	PM*	PM10*	PM2.5*	SO2	NOx	TOC	CO	Pb
	2.8 (2.8A)	0.00 (ND)	0.00 (ND)	30.0 (100S)	11.0	1.0	1.7	0.41 (0.41L)
Potential Emission in tons/yr	0.04	0.04	0.04	0.47	0.17	0.02	0.03	0.01

*No information was given in AP-42 regarding whether the PM emission factor included filterable and condensable PM.
No Emission factor listed for PM10 or PM2.5. Assumes PM10/PM2.5 = PM

HAPs - Metals					
Emission Factor in lb/kgal	Arsenic	Chromium	Cobalt	Nickel	Phosphorus
	2.5E-03	1.9E-01	5.7E-03	5.0E-02	3.6E-02
Potential Emission in tons/yr	3.94E-05	2.99E-03	8.98E-05	7.88E-04	5.67E-04

HAPs - Organics					
Emission Factor in lb/kgal	Naphthalene	Phenanthrene/ anthracene	Pyrene	Benz(a)anthracene/c hrysene	Benzo(a) pyrene
	1.3E-02	1.1E-02	7.1E-03	4.0E-03	4.0E-03
Potential Emission in tons/yr	2.05E-04	1.73E-04	1.12E-04	6.30E-05	6.30E-05

Total HAPs =	0.01
Single HAP =	0.006 Pb

Greenhouse Gas			
Emission Factor in kg/mmBtu from 40 CFR 98	CO2	CH4	N2O
	74	0.003	0.0006
Potential Emission in tons/yr	357	0.0	0.0
Summed Potential Emissions in tons/yr	357		
CO2e Total in tons/yr	359		

Methodology

Emission Factor Units are lb/1000 gal
 ND = No data was available for the PM10 emission factor.
 A = weight% ash in fuel, L = weight% lead in fuel, S = weight % sulfur in fuel
 Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 kgal per 1000 gallon x 1 gal per 0.139 MM Btu
 Emission Factors from AP-42, Chapter 1.11, SCC 1-05-001-14 (Supplement B 10/96)
 Emission (tons/yr) = Throughput kgals per year x Emission Factor (lb/kgal)/2,000 lb/ton
 The five metal and five organic HAPs with the highest emission factors are presented above.
 Additional emission factors for additional HAPs with smaller emission factors are available in AP-42, 5th edition (Supplement B 10/96).
 Greenhouse Gas Emission Factor Units are in kg/mmBtu.
 Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C. Waste oil is called Used oil in 40 CFR 98.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (kg/mmBtu) x 2.20462 lb/kg x 8760 hrs/yr /2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Parts Waxing Line and Phosphate and Oil Line
Miscellaneous Operations**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams

Parts Waxing Line

Unit	Capacity (gal/yr)	Wax Density (lb/gal)	VOC Content (wt. %)	PTE VOC (lb/yr)	PTE VOC (ton/yr)
Parts Waxing Line	2250	8.42	1.0%	189.45	0.1

Methodology

- Wax density and VOC Content values were provided by the Permittee.
- PTE VOC (lb/yr) = Capacity (gal/yr) * Density (lb/gal) * VOC Content (lb VOC/lb Wax)
- PTE VOC (ton/yr) = PTE VOC (lb/yr) * (1 ton / 2000 lb)

Phosphate and Oil Line

Tank #	Chemical in Tank	Tank Capacity (gal)	Tank Concentration (%)	Chemical Usage Rate (gal/yr)	Density (lb/gal)	VOC Content (wt. %)	PM EF (lb PM/ton H ₂ SO ₄)	PTE VOC (ton/yr)	PTE PM / PM ₁₀ / SO ₂ * (ton/yr)
1	Degreaser (NST)	250	5%	600		--	--	--	--
2	Rinse Water	250	100%			--	--	--	--
3	Rinse Water	250	100%			--	--	--	--
4	Rinse Water	250	100%			--	--	--	--
5	De-phosphate (GC 390)	250	13%	1560		--	--	--	--
6	Sulfuric Acid	600	12%	7000	15.3	--	4.14	--	0.11
7	Rinse Water	250	100%			--	--	--	--
8	Rinse Water	250	100%			--	--	--	--
9	Activator GL V 651	250	10%	1200		--	--	--	--
10	Zinc Phosphate (GB Z 3190)	600	12%	3456		--	--	--	--
11	Zinc Phosphate (GB Z 3190)	250	12%	1440		--	--	--	--
12	Rinse Water	250	100%			--	--	--	--
13	Rinse Water	250	100%			--	--	--	--
14	Neutralizer (GL V 651)	250	12%	1440		--	--	--	--
15	Dry Oil (RP 4106)	250	11%	1320		--	--	--	--
16	Wet Oil (398LT)	250	15%	1800	8.5	2.5%	--	0.19	--
Total								0.19	0.11

Methodology

- Chemical Rate Usage, Density, and VOC content were provided by the Permittee.
- The PM EF is based on the uncontrolled emissions from the present pickle line: (0.79 lb PM/hr) * (8760 hr/yr) / (1669.9 tons H₂SO₄/yr) = 4.14 lb PM/ton H₂SO₄
- The PTE of PM₁₀ is assumed to equal the PTE of PM.
- PTE VOC (ton/yr) = Chemical Rate Usage (gal/yr) * Density (lb/gal) * VOC Content (lb VOC/lb Chemical) * (1 ton/2000 lb)
- PTE PM/PM₁₀/SO₂ (ton/yr) = H₂SO₄ Usage (gal/yr) * H₂SO₄ Density (lb/gal) * (1 ton / 2000 lb) * PM EF (lb PM/ton H₂SO₄) * (1 ton / 2000 lb)
- *Since the emissions are sulfuric acid mist, the PTE to emit SO₂ is conservatively equal to PM PTE.

**Appendix A: Emission Calculation:
Bolt-Former Machines**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46781
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian William

Bolt Formers Using Smog Hog Oil Mist Collectors for Particulate Control

Machine #	Rate of Units Processed (ton/hr)	Cooling Oil Usage (gal/yr)	Density of Cooling Oil (lb/gal)	PM Emitted (lb PM/lb Cooling Oil)	Uncontrolled PTE PM/PM ₁₀ /PM _{2.5}		Control Efficiency (%)	Controlled PTE PM/PM ₁₀ /PM _{2.5}		Total Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Emissions (lb/hr)
					(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		
5 (Moved from Venturi Units)	1.92	7,594.94	7.59	0.5	3.29	14.41	90.0%	0.33	1.44	1.923	6.35
6 (Moved from Venturi Units)	2.21	8,742.09	7.59	0.5	3.79	16.59	90.0%	0.38	1.66	2.214	6.98
20	0.62	2,452.53	7.59	0.5	1.06	4.65	90.0%	0.11	0.47	0.621	2.98
26	1.78	7,041.14	7.59	0.5	3.05	13.36	90.0%	0.31	1.34	1.783	6.04
27	1.73	6,843.35	7.59	0.5	2.96	12.99	90.0%	0.30	1.30	1.733	5.93
28	0.92	3,639.24	7.59	0.5	1.58	6.91	90.0%	0.16	0.69	0.922	3.88
29*	0.30	1,186.71	7.59	0.5	0.51	2.25	90.0%	0.05	0.23	0.301	N/A - exempt
31	1.75	6,922.47	7.59	0.5	3.00	13.14	90.0%	0.30	1.31	1.753	5.97
Total		44,422.47			19.24	84.29		1.92	8.43		32.16 lb/hr or 140.9 tpy

*This is an Insignificant Activity as defined in 326 IAC 2-7-1(21).

Methodology

- Cooling Oil Usage is based on a total potential usage of 37,500 gal/yr for all the bolt formers using Smog Hog oil mist collection systems for particulate control. The Permittee estimates that the rate of oil to each individual bolt former will be approximately proportionate to rate of units processed by each machine.
- Density of Cooling Oil, PM Emitted, and Control Efficiency values are based off of calculations performed in Appendix A to the TSD of Part 70 Operating Permit No. T033-20219-00038.
- The PTE of PM₁₀/PM_{2.5} is assumed to equal the PTE of PM.
- Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Cooling Oil Usage (gal/yr) * Density of Cooling Oil (lb/gal) * PM Emitted (lb PM/lb Cooling Oil) * (1 yr / 8760 hr)
- Controlled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) * (1 - Control Efficiency)
- PTE (ton/yr) = PTE (lb/hr) * (8760 hr/yr) * (1 ton / 2000 lb)
- Total Process Weight Rate (ton/hr) = Rate of Units Processed (ton/hr) + [Cooling Oil Rate (gal/yr) * Density of Cooling Oil (lb/gal) * (1 yr/8760 hr) * (1 ton / 2000 lb)]
- 326 IAC 6-3-2 Allowable PM Emissions (lb/hr) = 4.10 * [Process Weight Rate (ton/hr)]^{0.87}
- Pursuant to 326 IAC 6-3-1(b)(14), manufacturing processes with potential emissions less than 0.551 pounds per hour are exempt from 326 IAC 6-3.

Bolt Formers Using the Venturi Scrubber Systems for Particulate Control

Machine #	Rate of Units Processed (tons/hr)	Cooling Oil Usage (lb/yr)	VOC Content (lb VOC/lb Cooling Oil)	PM Emitted (lb PM/lb Cooling Oil)	PTE VOC (ton/yr)	Uncontrolled PTE PM/PM ₁₀ /PM _{2.5}		Control Efficiency (%)	Controlled PTE PM/PM ₁₀ /PM _{2.5}		Total Process Weight Rate (ton/hr)	326 IAC 6-3-2 Allowable PM Emissions (lb/hr)
						(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		
1	6.33	18174	0.5	0.1	4.543	0.207	0.909	98.0%	0.00415	0.0182	6.33	N/A - exempt
2*	1.49	4278	0.5	0.1	1.069	0.049	0.214	98.0%	0.00098	0.0043	1.49	N/A - exempt
3*	1.53	4393	0.5	0.1	1.098	0.050	0.220	98.0%	0.00100	0.0044	1.53	N/A - exempt
4*	3.42	9819	0.5	0.1	2.455	0.112	0.491	98.0%	0.00224	0.0098	3.42	N/A - exempt
7	4.38	12575	0.5	0.1	3.144	0.144	0.629	98.0%	0.00287	0.0126	4.38	N/A - exempt
8*	1.85	5311	0.5	0.1	1.328	0.061	0.266	98.0%	0.00121	0.0053	1.85	N/A - exempt
9*	1.19	3417	0.5	0.1	0.854	0.039	0.171	98.0%	0.00078	0.0034	1.19	N/A - exempt
10 (new)	4.38	12575	0.5	0.1	3.144	0.144	0.629	98.0%	0.00287	0.0126	4.38	N/A - exempt
11	4.02	11542	0.5	0.1	2.885	0.132	0.577	98.0%	0.00264	0.0115	4.02	N/A - exempt
12*	1.52	4364	0.5	0.1	1.091	0.050	0.218	98.0%	0.00100	0.0044	1.52	N/A - exempt
13*	0.59	1694	0.5	0.1	0.423	0.019	0.085	98.0%	0.00039	0.0017	0.59	N/A - exempt
14*	0.51	1464	0.5	0.1	0.366	0.017	0.073	98.0%	0.00033	0.0015	0.51	N/A - exempt
15*	0.77	2211	0.5	0.1	0.553	0.025	0.111	98.0%	0.00050	0.0022	0.77	N/A - exempt
16*	0.84	2412	0.5	0.1	0.603	0.028	0.121	98.0%	0.00055	0.0024	0.84	N/A - exempt
17*	0.54	1550	0.5	0.1	0.388	0.018	0.078	98.0%	0.00035	0.0016	0.54	N/A - exempt
19*	0.30	861	0.5	0.1	0.215	0.010	0.043	98.0%	0.00020	0.0009	0.30	N/A - exempt
21*	0.22	632	0.5	0.1	0.158	0.007	0.032	98.0%	0.00014	0.0006	0.22	N/A - exempt
22*	0.35	1005	0.5	0.1	0.251	0.011	0.050	98.0%	0.00023	0.0010	0.35	N/A - exempt
23*	0.13	373	0.5	0.1	0.093	0.004	0.019	98.0%	0.00009	0.0004	0.13	N/A - exempt
24*	2.44	7005	0.5	0.1	1.751	0.080	0.350	98.0%	0.00180	0.0070	2.44	N/A - exempt
25	4.64	13322	0.5	0.1	3.330	0.152	0.666	98.0%	0.00304	0.0133	4.64	N/A - exempt
30	1.75	5024	0.5	0.1	1.256	0.057	0.251	98.0%	0.00115	0.0050	1.75	N/A - exempt
Total		124000			31.00	1.42	6.20		0.03	0.12		

*Insignificant Activity as defined in 326 IAC 2-7-1(21).

Methodology

- Cooling Oil Usage is based on a total potential usage of 124,000 lb/yr for all the bolt formers using the Venturi scrubbers for particulate control. This usage represents an increase in total potential usage from 78,770 pounds per year. The Permittee estimates that rate of oil to each individual bolt former will be approximately proportional to the rate of units processed by each machine.
- VOC Content, PM Emitted, and Control Efficiency values are based off of calculations performed in Appendix A to the TSD of Part 70 Operating Permit No. T033-20219-00038.
- PTE VOC (ton/yr) = Cooling Oil Usage (lb/yr) * VOC Content (lb VOC/lb Cooling Oil) * (1 ton / 2000 lb)
- The PTE of PM₁₀/PM_{2.5} is assumed to equal the PTE of PM.
- Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Cooling Oil Usage (lb/yr) * PM Emitted (lb PM/lb Cooling Oil) * (1 yr / 8760 hr)
- Controlled PTE PM/PM₁₀/PM_{2.5} (lb/hr) = Uncontrolled PTE PM/PM₁₀/PM_{2.5} (lb/hr) * (1 - Control Efficiency)
- PTE (ton/yr) = PTE (lb/hr) * (8760 hr/yr) * (1 ton / 2000 lb)
- Total Process Weight Rate (ton/hr) = Rate of Units Processed (ton/hr) + [Cooling Oil Rate (lb/yr) * (1 yr/8760 hr) * (1 ton / 2000 lb)]
- Pursuant to 326 IAC 6-3-1(b)(14), manufacturing processes with potential emissions less than 0.551 pounds per hour are exempt from 326 IAC 6-3.

**Appendix A: Emission Calculations
Cooling Towers**

**Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Pit ID: 033-00038
Permit Reviewer: Brian Williams**

One (1) Cooling Tower at the concrete pond (1,950 gpm)

Estimated max total dissolved solids concentration of 1,250 ppm

Drift loss rate of 0.005%

$$\text{PM} = 1,950 \text{ (gal/min)} * (1,250/1,000,000) * (8.345 \text{ lb/gal}) * 0.00005 * 60 = 0.06 \text{ lb/hr}$$

$$\text{PM} = 0.061 * 8760 / 2000 = 0.27 \text{ tpy}$$

Assume 16% of PM is PM10. Assume PM2.5 = PM10

$$\text{PM10/PM2.5} = 0.16 * 0.2673 \text{ tpy} = 0.04 \text{ tpy}$$

Two (2) Cooling Towers at the Holcroft belt heat reat furnace (each 975 gpm)

Estimated max total dissolved solids concentration of 1,250 ppm

Drift loss rate of 0.005%

$$\text{PM} = 975 \text{ (gal/min)} * (1,250/1,000,000) * (8.345 \text{ lb/gal}) * 0.00005 * 60 = 0.031 \text{ lb/hr}$$

$$\text{PM} = 0.031 * 8760 / 2000 = 0.13 \text{ tpy}$$

$$\text{PM for 2 cooling towers} = 0.27 \text{ tpy}$$

Assume 16% of PM is PM10. Assume PM2.5 = PM10

$$\text{PM10/PM2.5} = 0.16 * 0.2673 \text{ tpy} = 0.04 \text{ tpy}$$

**Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Rich-Burn (4SRB) Engines**

Company Name: NUCOR Fastener
Address City IN Zip: 6730 County Road 60, St. Joe, Indiana 46785
Significant Permit Modification No: 033-34369-00027
Permit Renewal No: T033-31290-00038
Plt ID: 033-00038
Permit Reviewer: Brian Williams

Maximum Heat Input Capacity (MMBtu/hr)	1.95
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	975
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.96

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	9.50E-03	1.94E-02	1.94E-02	5.88E-04	2.21E+00	2.96E-02	3.72E+00
Potential Emissions (tons/yr)	0.0046	0.01	0.01	0.0003	1.08	0.01	1.81

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	2.79E-03	0.001
Acrolein	2.63E-03	0.001
Benzene	1.58E-03	0.001
1,3-Butadiene	6.63E-04	0.000
Formaldehyde	2.05E-02	0.010
Methanol	3.06E-03	0.001
Total PAH**	1.41E-04	0.000
Toluene	5.58E-04	0.000
Xylene	1.95E-04	0.000
Total		0.02

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-3.
**PAH = Polycyclic Aromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-3
Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]
Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	
Emission Factor in lb/MMcf**			2.2
Potential Emission in tons/yr	53.63	0.61	0.00
Summed Potential Emissions in tons/yr	54.24		
CO2e Total in tons/yr	69.17		

Methodology

*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Abbreviations

PM = Particulate Matter	NOx = Nitrous Oxides	CO2 = Carbon Dioxide
PM10 = Particulate Matter (<10 um)	VOC = Volatile Organic Compounds	CH4 = Methane
SO2 = Sulfur Dioxide	CO = Carbon Monoxide	N2O = Nitrous Oxide
		CO2e = CO2 equivalent emissions



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Tim Jones
Nucor Vulcraft – St. Joe Division
PO Box 1000
St. Joe, IN 46785

DATE: August 12, 2014

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Significant Permit Modification
033-34369-00027

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Shannon Phillips – VP/GM
Erin Surinak – Environmental Resources Management (ERM)
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013



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Governor

Thomas W. Easterly
Commissioner

August 12, 2014

TO: Eckhart Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Nucor Vulcraft Group – St. Joe Division
Permit Number: 033-34369-00027

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

Mail Code 61-53

IDEM Staff	GHOTOPP 8/12/2014 Nucor Vulcraft - St Joe Division 033-34369-00027 Final		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

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1		Tim Jones Nucor Vulcraft - St Joe Division PO Box 1000 St. Joe IN 46785 (Source CAATS) via confirmed delivery										
2		Shannon Phillips VP/GM Nucor Vulcraft - St Joe Division PO Box 1000 St. Joe IN 46785 (RO CAATS)										
3		Mr. Steve Christman NISWMD 2320 W 800 S, P.O. Box 370 Ashley IN 46705 (Affected Party)										
4		DeKalb County Commissioners 100 South Main Street Auburn IN 46706 (Local Official)										
5		Ms. Diane Leroy 303 N. Jackson St. Auburn IN 46706 (Affected Party)										
6		Mr. Barry Fordanish R#3 1480 CR 66 Auburn IN 46706 (Affected Party)										
7		DeKalb County Health Department 220 E 7th St #110 Auburn IN 46706 (Health Department)										
8		Daniel & Sandy Trimmer 15021 Yellow River Road Columbia City IN 46725 (Affected Party)										
9		Brown & Sons Fuel Co. P.O. Box 665 Kendallville IN 46755 (Affected Party)										
10		Mr. Marty K. McCurdy 2550 County Road 27 Waterloo IN 46793 (Affected Party)										
11		St. Joe Town Council P.O. Box 293 St. Joe IN 46785 (Local Official)										
12		Erin Surinak Environmental Resources Management (ERM) 11350 N Meridian Street Suite 320 Carmel IN 46032 (Consultant)										
13		Eckhart Public Library 603 South Jackson Street Auburn IN 46706 (Library)										
14												
15												

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