



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant
DATE: September 23, 2005
RE: Nucor Steel / 107-21527-00038
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

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 enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this approval 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.

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, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar 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.

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.

Enclosures
FNPER-MOD.dot 1/10/05



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

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Indianapolis, Indiana 46204
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September 23, 2005

Mr. David Sulc
Nucor Steel
4537 South Nucor Road
Crawfordsville, IN 47933

Re: 107-21527-00038
Minor Source Modification to:
PSD permit No.: PSD 107-12143-00038

Dear Mr. Sulc:

An application to modify the source was received on July 7, 2005. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

Four (4) natural gas fueled annealing furnaces, using propane as a backup fuel. Each furnace has a nominal capacity of 14.505 million (MM) Btu/hour. Emissions exhaust inside the Hot Mill Building.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction, which may affect the potential to emit (PTE) of the proposed project, the Office of Air Quality (OAQ) must approve the change.
2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

The source may begin construction and operation when the minor source modification has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027 and ask for Lawrence Stapf extension 2-8427, or directly dial (317) 232-8427.

Sincerely,
Original signed by

Paul Dubenetzky, Assistant Commissioner
Office of Air Quality

Attachments:
Technical Support Document

LS
cc: File - Montgomery County
Montgomery County Health Department
Air Compliance Section Inspector: RTS
Compliance Data Section
Administrative and Development



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Thomas W. Easterly
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PART 70 MINOR SOURCE MODIFICATION

OFFICE OF AIR QUALITY

Nucor Steel 4537 South Nucor Street Crawfordsville, IN 47933

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

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

Minor Source Modification (MSM) No.: 107-21527-00038

Original signed by:

Paul Dubenetzky, Assistant Commissioner
Office of Air Quality

Issuance Date: **September 23, 2005**

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

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

The Permittee owns and operates a stationary steel mini-mill that produces all grades of carbon and stainless steel, all grades of alloy steel, all grades of ultra low and low carbon steel, flat rolled, hot rolled, cold rolled, galvanized, pickled and oiled steel (slabs, sheets) products.

Source Name:	Nucor Steel
Source Location:	4537 South Nucor Street, Crawfordsville, IN 47933
Mailing Address:	4537 South Nucor Street, Crawfordsville, IN 47933 RR2, Box 311, Crawfordsville, IN 47933
General Telephone Number:	765-364-1323
General Facsimile Number:	765-364-5311
Responsible Official:	General Manager
County Location:	Montgomery
SIC Code:	3312 (Steel Mill)
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Major Source, CAA Section 112

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

This stationary source is approved to construct, modify and operate the following emission units:

Four (4) natural gas fueled annealing furnaces, using propane as a backup fuel. Each furnace has a nominal capacity of 14.505 million (MM) Btu/hour. Emissions exhaust inside the Hot Mill Building.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1 (21) that have applicable requirements.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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

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

SECTION B GENERAL CONSTRUCTION CONDITIONS

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

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

B.2 Effective Date of the Permit [IC 13-15-5-3]

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

B.3 Revocation of Permits [326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-7-10.5(i), construction must commence within eighteen (18) months of the issuance of this modification approval.

SECTION C GENERAL OPERATION CONDITIONS

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

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

C.2 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
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

Any such application shall be certified by the responsible official as defined by 326 IAC 2-7-1(34).
- (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)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

C.3 Fugitive Dust Emissions [326 IAC 6-4]

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

326 IAC 6-4-2(4) is not federally enforceable.

C.4 Operation of Equipment [326 IAC 2-7-6(6)]

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

C.5 Opacity [326 IAC 5-1]

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

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

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

None

Compliance Requirements [326 IAC 2-1.1-11]

C.6 Compliance Requirements [326 IAC 2-1.1-11]

- (a) 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.
- (b) Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the US EPA.

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

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

Except as otherwise provided in Section D, all monitoring and record keeping requirements, as required in Section D, shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.8 Monitoring Methods [326 IAC 3] [40 CFR Part 60] [40 CFR Part 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR Part 60, Appendix A, 40 CFR Part 60 Appendix B, 40 CFR Part 63, or other approved methods as specified in this permit.

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

C.9 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:
 - (i) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (ii) The permitted facility was at the time being properly operated;

- (iii) 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;
- (iv) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, 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 Section), or

Telephone Number: 317-233-5674 (ask for Compliance Section)

Facsimile Number: 317-233-5967

- (v) 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 Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

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

- (vi) 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) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) 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.
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

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

C.10 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2]

- (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. 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, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.
- (c) If there is a reasonable possibility that a “project” (as defined in 326 IAC 2-2-1 (qq)) at an existing emissions unit, other than projects at a Clean Unit which is not part of a “major modification” (as defined in 326 IAC 2-2-1 (ee)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1 (rr)), the Permittee shall comply with following:
 - (1) Prior to commencing the construction of the “project” (as defined in 326 IAC 2-2-1 (qq)) at an existing emissions unit, document and maintain the following records:
 - (A) A description of the project.
 - (B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
 - (C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:
 - (i) Baseline actual emissions;
 - (ii) Projected actual emissions;
 - (iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii); and
 - (iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.
 - (2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and
 - (3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity

of or the potential to emit that regulated NSR pollutant at the emissions unit.

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

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:
- Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.
- (f) If the Permittee is required to comply with the recordkeeping provisions of (c) in Section C- General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq)) at an existing emissions unit other than Electric Utility Steam Generating Unit and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:
- (1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx), for that regulated NSR pollutant, and
- (2) The emissions differ from the preconstruction projection as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(ii).
- (g) The report for project at an existing emissions unit other than Electric Utility Steam Generating Unit shall be submitted within sixty (60) days after the end of the year and contain the following:
- (1) The name, address, and telephone number of the major stationary source.

- (2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C- General Record Keeping Requirements.
- (3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) .
- (4) Any other information that the Permittee deems fit to include in this report.

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Air Compliance Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

- (h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

SECTION D FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	Hot Mill
Four (4) natural gas fueled annealing furnaces, using propane as a backup fuel. Each furnace has a nominal capacity of 14.505 million (MM) Btu/hour. Emissions exhaust inside the Hot Mill Building.	
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1 Nitrogen Oxides (NOx) [326 IAC 2-7-5]

- (a) Pursuant to 326 IAC 2-7-5, the input of the natural gas to the annealing furnaces shall be limited to less than 484 million cubic feet of natural gas per 12 consecutive month period, with compliance determined at the end of each month. NOx emissions shall not exceed 0.098 lb NOx/MMBtu.
- (b) For purposes of determining compliance with the fuel usage limit, 5.42 thousand gallons of propane (LPG) shall be equivalent to one million cubic feet of natural gas.
- (c) When combusting propane, NOx emissions shall not exceed 0.202 lb NOx/MMBtu.

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

None

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

None

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

D.2 Record Keeping Requirements

- (a) Actual type and quantity of fuel used (including gallons of propane, cubic feet of natural gas, and equivalent thousand gallons of propane LPG as million cubic feet of natural gas), since the last compliance determination period; and
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarterly period being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-1.1-1(1).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY**

**PART 70 OPERATING PERMIT
CERTIFICATION**

Source Name: Nucor Steel
Source Location: 4537 South Nucor Street, Crawfordsville, IN 47933
Mailing Address: 4537 South Nucor Street, Crawfordsville, IN 47933
RR2, Box 311, Crawfordsville, IN 47933

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

Please check what document is being certified:

- Test Result (specify)
- Report (specify)
- Notification (specify)
- 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:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY, COMPLIANCE BRANCH**

**PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT**

Source Name: Nucor Steel
Source Location: 4537 South Nucor Street, Crawfordsville, IN 47933
Mailing Address: 4537 South Nucor Street, Crawfordsville, IN 47933
RR2, Box 311, Crawfordsville, IN 47933

This is an emergency as defined in 326 IAC 2-7-1(12)

The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and

The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.

Address: 100 North Senate Avenue, Indianapolis, Indiana 46204

This EMERGENCY OCCURRENCE REPORT consists of 2 pages.

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:

Date/Time Emergency started:

Date/Time Emergency was corrected:

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Was the facility being properly operated at the time of the emergency? Y N

Describe:

Type of Pollutants Emitted: TSP, PM₁₀, SO₂, VOC, NO_x, CO, Pb, other:

Estimated amount of pollutant(s) emitted during emergency:

Describe the steps taken to mitigate the problem:

Describe the corrective actions/ reasonable response steps taken:

Describe the measures taken to minimize emissions:

If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is NOT required for this report.

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

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

Source Name: Nucor Steel
Source Location: 4537 South Nucor Street, Crawfordsville, IN 47933
Mailing Address: 4537 South Nucor Street, Crawfordsville, IN 47933
RR2, Box 311, Crawfordsville, IN 47933

Months: _____ to _____ Year: _____

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

NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

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:

Form Completed By:

Title/Position:

Date:

Telephone:

Attach a signed certification to complete this report.

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

Technical Support Document (TSD)
Part 70 Minor Source Modification (MSM)

Source Background and Description
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Source Name:	Nucor Steel
Source Location:	4537 South Nucor Street, Crawfordsville, IN 47933
Mailing Address:	4537 South Nucor Street, Crawfordsville, IN 47933 RR2, Box 311, Crawfordsville, IN 47933
General Telephone Number:	765-364-2323
General Facsimile Number:	765-364-5311
Responsible Official:	General Manager
County Location:	Montgomery
SIC Code:	3312 (Steel Mill)
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Major Source, CAA Section 112
MSM No.:	107-21527-00038
Permit Writer:	L. Stapf 317/232-8427 LStapf@idem.in.gov

Description of the Proposed Modification

On July 7, 2005, the Office of Air Quality (OAQ) received an application from Nucor Steel to construct and operate the following emission units in the Hot Mill:

Four (4) natural gas fueled annealing furnaces, using propane as a backup fuel. Each furnace has a nominal capacity of 14.505 million (MM) Btu/hour. Emissions exhaust inside the Hot Mill Building.

History

On January 31, 2005, IDEM issued the source a minor source modification under 107-20510-00038 for four (4) annealing furnaces. The units were to be located at the Crawfordsville facility. The units were not large enough to fulfill their intended purpose so Nucor requested approval to construct four larger units in lieu of the four annealing furnaces approved by MSM 107-20510-00038. This source modification approves the construction of these four larger units. Since the original four units permitted under MSM 107-20510-00038 were never constructed, MSM 107-20510-00038 is being revoked.

Emission Calculations

As a condition of this source modification, the source is not required to stack test these units because Nucor recently conducted stack testing of similar units as detailed in the following table of test results:

Table 1

Date of Test	Unit Tested	Emissions (lb NOx / MMBtu)	Notes
June 6, 2001	Annealing furnace #1	0.0821	Natural gas; low NOx burners
June 6, 2001	Annealing furnace #9	0.0932	Natural gas; low NOx burners
June 6, 2001	Annealing furnace #13	0.0687	Natural gas; low NOx burners
June 6, 2001	Annealing furnace #15	0.0846	Natural gas; low NOx burners
May 16, 2002	Annealing furnace #1	0.0682	Natural gas; low NOx burners
May 16, 2002	Annealing furnace #9	0.0824	Natural gas; low NOx burners
May 16, 2002	Annealing furnace #13	0.0741	Natural gas; low NOx burners
May 16, 2002	Annealing furnace #15	0.0694	Natural gas; low NOx burners

The emissions calculations shall be based on the following information:

- (1) Nominal capacity of each annealing furnace = 14.505 MMBtu/hour
- (2) Total nominal capacity of the 4 furnaces = (14.505 MMBtu/hour)*(4 units) = 58.0 MMBtu/hour
- (3) Emissions from the annealing furnaces are due to combustion of natural gas fuel as the primary fuel and propane as a backup fuel.
- (4) All emission factors are based on normal firing. 1MMBtu = 1,000,000 Btu
- (5) Emission factor for natural gas of 0.098 based on conservative number after actual stack testing of similar units ranging from 0.0682 to 0.0932 lb NOx / MMBtu, as represented above.
- (6) $PTE = (Total\ Nominal\ Capacity\ MMBtu/hour) * (EF\ lbs/MMBtu) * (8760\ hours/year) * (1\ ton/2000\ lbs)$
 = tons pollutant/year

Table 2 - - - Four (4) Annealing Furnaces (14.505 MMBtu/hr each) on Natural Gas		
Pollutant	Emission Factor (EF) (lbs/MMBtu)	PTE (tons/year)
SO ₂	0.0006	0.15
NO _x	0.098	24.9
VOC	0.0055	1.4
CO	0.084	21.3
PM/PM ₁₀	0.0076	1.9
Lead	0.0005	0.127

- (7) Emission factor from AP42 for liquid propane gas (LPG) provides:
 $(EF\ lbs/1000\ gal) * (gal/ 94,000\ Btu) * (1,000,000\ Btu/MMBtu) = EF\ lbs/MMBtu$
 NOx example:
 $(19\ lbs\ NOx/1000\ gal) * (gal/ 94,000\ Btu) * (1,000,000\ Btu/MMBtu) = 0.202\ lbs\ NOx/MMBtu$
- (8) $PTE\ (LPG) = (Tot\ Capacity\ MMBtu/hour) * (EF\ lbs/MMBtu) * (8760\ hours/year) * (1\ ton/2000\ lbs)$
 = tons/year

NOx example:

$$\text{PTE (lp)} = (4 * 14.505 \text{ MMBtu/hour}) * (0.202 \text{ lbs/MMBtu}) * (8760 \text{ hours/year}) * (1 \text{ ton}/2000 \text{ lbs})$$

$$= 51.3 \text{ tons NOx /year}$$

Pollutant	Emission Factor (EF) (lbs/1000 gal)	PTE (tons/year)
SO ₂	negligible	negligible
NO _x	19	51.37
VOC	Not available	Not available
CO	3.2	8.6
PM/PM ₁₀	0.6	1.6
Lead	Not available	Not available

- (9) In terms of propane (LPG), the equivalence of one (1) million cubic feet of natural gas is:

$$\frac{10^6 \text{ CF}}{\text{MMCF}} * \frac{1050 \text{ Btu}}{\text{CF NG}} * \frac{0.098 \text{ lbNOx NG}}{\text{MMBtu}} * \frac{\text{MMBtu}}{0.202 \text{ lbNOx LPG}} * \frac{\text{gal LPG}}{94000 \text{ Btu}} = 5.42 \frac{\text{thousand gal LPG}}{\text{million CF NG}}$$

Potential To Emit (PTE) of Modification

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

PTE Before Control = PTE After Control because there are no add-on control devices.
 There will be no need to limit natural gas usage so the PTE is based on 8760 hours per year.

Pollutant	PTE Before Control (tons/year)	PTE After Control (tons/year)
SO ₂	0.15	0.15
NO _x	24.9	24.9
VOC	1.4	1.4
CO	21.3	21.3
PM/ PM ₁₀	1.9	1.9
Lead	0.127	0.127

Propane will require a usage limitation.
 Limited PTE Before Control = Limited PTE After Control because there are no add-on control devices for NOx emissions.

Emissions from burning propane (LPG) shall be limited to less than 25.0 tons NOx per year:
 Limited PTE (lp) = (24.9 ton NOx/yr)*(2000 lb/ton)*(MMBtu/ 0.202 lb)*(10⁶ Btu/MMBtu)*(gal / 94000 Btu)
 = 2,620 thousand gallons of propane per 365 consecutive day period

where the equivalence of one (1) cubic foot of natural gas is:

$$\frac{10^6 \text{ CF}}{\text{MMCF}} * \frac{1050 \text{ Btu}}{\text{CF NG}} * \frac{0.098 \text{ lbNO}_x \text{ NG}}{\text{MMBtu}} * \frac{\text{MMBtu}}{0.202 \text{ lbNO}_x \text{ LPG}} * \frac{\text{gal LPG}}{94000 \text{ Btu}} = 5.42 \frac{\text{thousand gal LPG}}{\text{million CF NG}}$$

Table 5 - Limited PTE Four (4) Annealing Furnaces (14.505 MMBtu/hr each) on liquid propane gas		
Pollutant	Emission Factor (EF) (lbs/1000 gal)	PTE (tons/year)
SO ₂	negligible	negligible
NO _x	19	24.9
VOC	Not available	Not available
CO	3.2	4.17
PM/PM ₁₀	0.6	0.78
Lead	Not available	Not available

Permitting Level Determination

- (1) Minor Source Modification (MSM) [326 IAC 2-7-10.5(d)(3)(B)(ii)]
 Pursuant to 326 IAC 2-7-10.5(d)(3)(B)(ii), this modification is considered a minor source modification to an existing Part 70 source because the NO_x potential to emit is less than 25 tons/year and greater than 10 tons/year.

Source Status

- (1) PSD Major Source
 Nucor Steel is an existing PSD major stationary source because at least one attainment regulated pollutant is emitted at a rate of 100 tons per year or greater.
- (2) 1 of 28 Listed Source Categories
 Nucor Steel is considered one of the 28 listed source categories (326 IAC 2-2-1(gg)).
- (3) Part 70 Source
 - (a) Nucor Steel submitted their Part 70 permit application on November 14, 1996.
 - (b) A notice of completeness was mailed to Nucor Steel on December 10, 1996.
 - (c) The Part 70 application is still under review by the OAQ.

County Attainment Status

- (1) Montgomery County
 Nucor Steel is located in Montgomery County. The table below shows the attainment status of Montgomery County.

Table 6 - - - Montgomery County	
Pollutant	Status
PM ₁₀	Attainment
SO ₂	Attainment
NO ₂	Attainment
1-Hour Ozone	Attainment
8-Hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (2) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx)
 VOC and NOx are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Montgomery County has been designated as attainment or unclassifiable for the 1-hour ozone standard and 8-hour ozone standard. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD) 326 IAC 2-2.
- (3) Criteria Pollutants
 Montgomery County has been classified as attainment or unclassifiable for all the other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Federal Rule Applicability Determination

- (1) New Source Performance Standards (NSPS)
 There are no NSPS 40 CFR Part 60 included in the permit for this proposed modification.
- (2) National Emission Standards for Hazardous Air Pollutants (NESHAPs)
 There are no NESHAPs 40 CFR Part 63 included in the permit for this proposed modification.
- (3) Section 112(j) of the Clean Air Act (CAA)
 Nucor Steel submitted their Part 1 application on May 15, 2002. This source requested for a CAA section 112(j) application determination on some processes of the plant.
- (4) 40 CFR Part 64 (Compliance Assurance Monitoring)
 The requirements of 40 CFR Part 64 do not apply to this proposed modification because the potential to emit of the new units are less than 100 tons/year and there are no add-on control devices.

State Rule Applicability Determination

- (1) 326 IAC 1-6-3 (Preventive Maintenance Plan (PMP))
 Preventive Maintenance Plans will not be required for the four (4) annealing furnaces.

- (2) 326 IAC 1-7-1 (Stack Height Requirements)
 This rule does not apply because each furnace does not emit PM or SO₂ emissions greater than 25 tons/year. (See Table 1)
- (3) 326 IAC 2-2 (PSD) and 326 IAC 2-7-10.5 (Source Modifications)
 This proposed modification is a minor modification to an existing major source because the potential to emit of the proposed modification is less than the PSD significant levels and less than the significant source modification levels. There are no expected increases at existing emissions units of the Hot Mill due to the addition of the annealing furnaces.

Table 7 - - - Significance Applicability Determination			
Pollutant	PTE (tons/year)	Significant Source Modification Level (tons/year)	PSD Significant Level (tons/year)
SO ₂	0.15	25	40
NO _x	24.9	25	40
VOC	1.4	25	40
CO	21.3	Not available	100
PM/ PM ₁₀	1.9	25/25	25/15
Lead	0.127	Not available	0.6

- (4) 326 IAC 2-6-1 (Emission Reporting)
 Even prior to this proposed modification, Nucor Steel is already subject to this requirement because it has total PTE of greater than 100 tons per year.
- (5) 326 IAC 2-7 (Part 70 Program)
 Nucor Steel submitted their Part 70 permit application on November 14, 1996.

 The Part 70 permit has not yet been issued and is still under review by the OAQ.
- (6) 326 IAC 5-1 (Opacity Limitations)
 The opacity from the annealing furnaces shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4. Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (7) 326 IAC 6-1 (PM Nonattainment Limitation)
 This rule does not apply to Nucor Steel because it is not located in any of the counties or areas specified in 326 IAC 6-1-7.
- (8) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
 This rule does not apply to the annealing furnaces because they are not boilers.
- (9) 326 IAC 7-1.1 (SO₂ Limitation)
 The annealing furnaces are not subject to this rule because they emit less than 25 tons per year and 10 pounds per hour of SO₂ emissions.
- (10) 326 IAC 8 (VOC)

The annealing furnaces are not subject to this rule because they emit less than 25 tons per year and 15 pounds per day of VOC emissions.

- (11) 326 IAC 9 (CO Emission Rules)
This rule does not apply because there are no applicable requirements specified for annealing furnaces.
- (12) 326 IAC 10 (NO_x Rules)
This rule does not apply to Nucor Steel because this rule applies only to sources located in Clark or Floyd Counties. Nucor Steel is located in Montgomery County.
- (13) 326 IAC 11 (Source Specific Limitations)
Steel Mill is not one of the operation listed in this rule.
- (14) 326 IAC 12 (NSPS)
Compliance with this rule has been addressed under the Federal Rules Applicability of this supporting document.
- (15) 326 IAC 14 (HAPs Emission)
This rule incorporates by reference the 40 CFR Part 61.
There are no 40 CFR Part 61 requirements included in the permit for this proposed modification.
- (16) 326 IAC 20 (NESHAP)
This rule incorporates by reference the 40 CFR Part 63.
There are no 40 CFR Part 63 requirements included in the permit for this proposed modification.

Recommendations and Conclusion

- (1) Based on the facts, conditions and evaluations made, the Office of Air Quality (OAQ) recommends to the Indiana Department of Environmental Management (IDEM) Commissioner that the preliminary findings in the MSM 107-21527-00038 be approved.
- (2) Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on July 7, 2005.
- (3) The applicant has provided a copy of the application in the Crawfordsville Public Library, 222 South Washington, Crawfordsville, IN 47933, Telephone: 765-362-2242.
- (4) The following officials will be notified of this proposed modification:
 - (a) County Commissioner, 100 East Main Street, Crawfordsville, IN 47933 and
 - (b) Mayor, 300 East Pike Street, Crawfordsville, IN 47933.
- (5) A copy of the findings is available on the Internet at: www.IN.gov/idem/air/permits/Air-Permits-Online.
- (6) The construction and operation of this proposed modification shall be subject to the conditions of the attached MSM No. 107-21527-00038.

IDEM Contact

Questions regarding this minor source modification can be directed to Lawrence Stapf at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204 or by telephone at (317) 232-8427 or toll free at 1-800-451-6027 extension 2-8427 or by e-mail at LStapf@idem.in.gov.