



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: May 24, 2006
RE: Nucor Steel / 107-21907-00038
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 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.

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) 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.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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May 24, 2006

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

Re: 107-21907-00038
First Minor Permit Modification to:
MSM permit No.: 107-21527-00038
Pertaining to:
PSD permit No.: PSD 107-12143-00038

Dear Mr. Sulc:

Nucor Steel was issued a minor source modification 107-21527-00038 on September 23, 2005, to their PSD operating permit PSD 107-12143-00038 for a steel mill located at 4537 South Nucor Road, Crawfordsville, IN, 47933. The Permittee filed a petition for adjudicatory hearing and administrative review of this permit (cause no. 04-A-J-3440) on September 28, 2004. Pursuant to the provisions of 326 IAC 2-7-12 a minor permit modification to this existing source modification is hereby approved as a resolution to this appeal as described in the attached Technical Support Document. The following emission units are included in this minor permit modification:

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 fuel limitation was changed as follows:

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~~ **501.3** 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~~ **5.22** 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~~ **0.208** lb NOx/MMBtu.

All other conditions of the source modification shall remain unchanged and in effect. For your convenience, the entire revised source modification will be provided upon approval.

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 Lawrence Stapf, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204, or call (800) 451-6027 and ask for Lawrence Stapf extension 2-8427, or directly dial (317) 232-8427.

Sincerely,

Original signed by

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

Attachments:
Technical Support Document

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



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PART 70 MINOR PERMIT MODIFICATION

OFFICE OF AIR QUALITY

Nucor Steel
4537 South Nucor Road
Crawfordsville, IN 47933

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

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.

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 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.

Table with 2 columns and 5 rows containing permit details: Operation Permit No., Issued by, Issuance Date, Expiration Date, Minor Source Modification, Minor Permit Modification, Original signed by.

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Emergency Occurrence Report

Quarterly Deviation And Compliance Monitoring Report

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 Road, Crawfordsville, IN 47933
Mailing Address:	4537 South Nucor Road, 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 46204-2251

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)]

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 46204-2251

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 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 46204-2251

- (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 (NO_x) [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 501.3 million cubic feet of natural gas per 12 consecutive month period, with compliance determined at the end of each month. NO_x emissions shall not exceed 0.098 lb NO_x/MMBtu.
- (b) For purposes of determining compliance with the fuel usage limit, 5.22 thousand gallons of propane (LPG) shall be equivalent to one million cubic feet of natural gas.
- (c) When combusting propane, NO_x emissions shall not exceed 0.208 lb NO_x/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) The Permittee shall keep records of the 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.
- (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 Road, Crawfordsville, IN 47933
Mailing Address: 4537 South Nucor Road, Crawfordsville, IN 47933
RR2, Box 311, Crawfordsville, IN 47933

<p>This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.</p> <p>Please check what document is being certified:</p> <p><input type="checkbox"/> Test Result (specify)</p> <p><input type="checkbox"/> Report (specify)</p> <p><input type="checkbox"/> Notification (specify)</p> <p><input type="checkbox"/> Affidavit (specify)</p> <p><input type="checkbox"/> Other (specify)</p>

<p>I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.</p>
<p>Signature:</p>
<p>Printed Name:</p>
<p>Title/Position:</p>
<p>Date:</p>

**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 Road, Crawfordsville, IN 47933
Mailing Address: 4537 South Nucor Road, 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:

Page 2 of 2 of the EMERGENCY OCCURRENCE REPORT

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 Road, Crawfordsville, IN 47933
Mailing Address: 4537 South Nucor Road, Crawfordsville, IN 47933
RR2, Box 311, Crawfordsville, IN 47933

Months: _____ to _____ Year: _____

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

Form Completed By:
Title/Position:
Date:
Telephone:

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document for a Minor Permit Modification

Source Name: Nucor Steel
Source Location: 4537 South Nucor Road, Crawfordsville, IN 47933
County: Montgomery
SIC Code: 3312
Operation Permit No.: 107-21907-00038
Permit Reviewer: L. Stapf

On February 6, 2006, the Office of Air Quality (OAQ) had a notice published in the Journal Review in Crawfordsville, Indiana, stating that Nucor Steel had applied for a source modification to their existing steel mill. The notice also stated that OAQ proposed to issue a permit 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 were received on the draft minor permit modification 107-21907-00038 from Nucor Steel in a letter dated February 24, 2006.

Changes to the permit are shown in **bold** while items removed are shown in highlighted ~~strikethrough~~.

Permit Comments

There were several Nucor comments concerning Section C of the draft minor permit modification:

Nucor Comment to Condition C.10(c):

Nucor proposes that IDEM, OAQ revise this paragraph in light of the case New York vs. EPA, 413 F.3d 3 (D.C. Cir. 2005). Specifically, Nucor proposes removal of the language "other than projects at a Clean Unit." The federal court vacated the Clean Unit provisions in the federal NSR rule. Although Indiana has yet to remove its Clean Unit regulations, they are subject to this challenge. Consequently, reference to them should be removed in the permit.

IDEM Response:

IDEM's rules still include the Clean Unit provisions; therefore, the language in C.10(c) is still applicable. No changes were made as a result of this comment.

Nucor Comment to Condition C.11(f):

Nucor proposes IDEM clarify that the reporting requirements of condition C.11(f) only apply to those facilities that must maintain records pursuant to condition C.10(c). Consequently, Nucor proposes that the first sentence of this condition be revised to read: "If the Permittee is required to comply with the recordkeeping provision of (c) in Section C.10 General Recordkeeping Requirements...".

Nucor also proposes that IDEM remove the language "other than Electric Utility Steam Generating Unit" for this condition. This language is inapplicable to Nucor's operations.

IDEM Response:

Condition C.11(f) only applies if records are necessary pursuant to Condition C.10(c). In addition, the language referencing electric utility steam generating units is intended to clarify that this condition does not apply to electric utility steam generating units. No changes were made as a result of these comments.

Technical Support Document Comments

IDEM does not amend the Technical Support Document (TSD). The TSD is maintained to document the original review. This addendum to the TSD (ATSD) is used to document responses to comments and changes made from the time the permit was drafted until a final decision is made.

There were several Nucor comments concerning the Technical Support Document:

Nucor Comment 1:

The address should be "South Nucor Road" instead of "South Nucor Street".

IDEM Response:

These changes are reflected here in the ATSD and were made throughout the permit.

Nucor Comment 2:

In the first sentence after "Existing Approvals", "no" should be changed to "not".

IDEM Response:

The phrase "no limited to" was changed to read "not limited to". This change is reflected here in the ATSD.

Appendix A: Emission Calculations Comments

There were several Nucor comments concerning the emission calculations in Appendix A of the Technical Support Document:

Nucor Comment 1:

In each table "eighteen batch annealing furnaces" should be changed to "four batch annealing furnaces".

IDEM Response:

IDEM recognizes that this was a typographical error. Appendix A has been revised and is included as Appendix A of this ATSD. This change was made as requested.

Nucor Comment 2:

In the top "Propane Combustion" table, the "Basis" for the NO_x emission factor is listed as "BACT – Low NO_x Burners". This emission factor is actually from AP-42, Table 15.1.

IDEM Response:

IDEM recognizes that this was a typographical error; therefore, the change was made as requested. Appendix A has been revised and is included on page 1 of 2 in Appendix A of this ATSD.

Nucor Comment 3:

In the propane table, the emissions capacity is listed as 14.505 MMBtu/hr. The correct value is 75.716 gallons/hr. This also affects the hourly emissions. The corrected emissions are: NO_x 1.44 lb/hr, VOC 0.038 lb/hr, PM₁₀ 0.045 lb/hr, TSP 0.045 lb/hr, CO 0.242 lb/hr, benzene 1.56x10⁻⁷, formaldehyde 5.6x10⁻⁶, hexane 1.33x10⁻⁴, naphthalene 4.5x10⁻⁸, and toluene 2.52x10⁻⁷.

IDEM Response:

The limit in the permit converts to 74.69 gallons of propane per hour per unit. This is equivalent to an emissions limitation for all four units of 5.68 pounds NO_x per hour and 24.9 tons NO_x per year. This

limitation of NOx was necessary in order for the modification to qualify as a minor source modification. No changes were made as a result of this comment.

IDEM Review of Documents:

Upon further review, IDEM has made the following changes:

Appendix A: Emission Calculations Comments

IDEM has noted an error in the calculations sheet for propane. The annual emission limitations do not change and are not affected by this correction. However, the hourly (pounds per hour) emissions column was incorrect and has been revised. The error affected hourly emission estimates for all criteria pollutants and HAPs. Note that the error does not affect the source modification directly since emission limitations are not based on an hourly limit.

The reference in the propane table (previously referenced natural gas) was changed to: "AP-42, Table 1.5-1 (lb/MMscf = lb/1000 gal * gal/91,500 Btu * 1,000,000 Btu/MMBtu)"

The corrected calculations and changes to the propane calculation sheet for propane are shown on page 2 of 2 in Appendix A of the ATSD.

Source Modification to Permit

IDEM has decided to remove (d) concerning nonroad engines from C.2 Permit Amendment or Modification. 40 CFR 89, Appendix A specifically indicates that states are not precluded from regulating the use and operation of nonroad engines, such as regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel; nor are permits regulating such operations precluded, once the engine is no longer new.

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 46204-2251
- 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.~~

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

Technical Support Document (TSD)
Part 70 Minor Permit Modification (MPM)

Source Background and Description

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
MPM No.:	107-21907-00038
Permit Writer:	L. Stapf 317/232-8427 LStapf@idem.in.gov

Description of the Proposed Modification

On October 11, 2005, the Office of Air Quality (OAQ) received a letter from Nucor Steel to modify the fuel limitation for 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.

This revision request is part of a Petition for Adjudicatory Hearing and Administrative Review (Cause No. 05-A-J-3607).

History

On January 31, 2005, IDEM issued the source a minor source modification under 107-21527-00038 for four (4) annealing furnaces. On October 11, 2005, Nucor Steel filed a Petition for Adjudicatory Hearing and Administrative Review and Request for Stay of Certain Contested Provisions with the Indiana Office of Environmental Adjudication (Cause No. 05-A-J-3607). This Minor Permit Modification 107-21907-00038 is hereby approved as resolution to this petition.

Justification for the Revision

The Minor Source Modification (MSM) 107-21527-00038 is being modified through a Minor Permit Modification (MPM) 107-21907-00038. This permit modification is being performed pursuant to 326 IAC 2-7-12(b) because the changes do not meet any of the options under an administrative amendment.

Existing Approvals

The source has been operating under previous approvals including, but no limited to, the following:

- (a) Minor Source Modification No. 107-21527-00038, issued on September 23, 2005.

All conditions from previous approvals were incorporated into this permit.

Enforcement Issues

There are no open enforcement cases for this source.

Recommendations

- (a) 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 MPM 107-21907-00038 be approved.
- (b) 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 October 11, 2005.
- (c) The applicant has provided a copy of the application in the Crawfordsville Public Library, 222 South Washington, Crawfordsville, IN 47933, Telephone: 765-362-2242.
- (d) 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.
- (e) A copy of the findings is available on the Internet at:
www.IN.gov/idem/air/permits/Air-Permits-Online.
- (f) The construction and operation of this proposed modification shall be subject to the conditions of the attached MPM No. 107-21907-00038.

Conclusions

This permit modification shall be added to the conditions of the Minor Source Modification No. 107-21527-00038 as Minor Permit Modification No. 107-21907-00038.

The appeal issues and responses are as follows:

Appeal Issue No. 1: Condition D.1

The Petitioner claims that the heating value of 1,050 Btu/scf used for natural gas in the calculation

of the emission limitation is not accurate. The Petitioner supplied actual records of the fuels heating value which had a minimum monthly average of 1,013 Btu/scf natural gas.

The Petitioner proposed the following changes to Conditions D.1 (**bold** to show additions and ~~strikeout~~ to show deletions):

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.~~
- (a) Pursuant to 326 IAC 2-7-5, the annealing furnaces shall burn natural gas with propane as a backup.**
- ~~(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.~~
- (b) NOx emissions shall not exceed 0.098 lb NOx/MMBtu while combusting natural gas.**
- ~~(c) When combusting propane, NOx emissions shall not exceed 0.202 lb NOx/MMBtu.~~
- (c) Propane input to the annealing furnaces shall be limited to less than 501.3 million cubic feet of gas per 12 consecutive month period, with compliance determined at the end of each month. NOx emissions shall not exceed 0.208 lb NOx/MMBtu while combusting propane.**

Response:

IDEM, Office of Air Quality, recalculated the emissions based on the new heating value of the fuel as attached in Appendix A. IDEM, OAQ revised the calculations and proposed the rewrite of the fuel limitation condition for the annealing furnaces as follows (**bold** to show additions and ~~strikeout~~ to show deletions):

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.~~
- (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 **501.3** 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.~~
- (b) For purposes of determining compliance with the fuel usage limit, 5.42 **5.22** 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.~~
- (c) When combusting propane, NOx emissions shall not exceed 0.202 **0.208** lb NOx/MMBtu.**

IDEM Contact

Questions regarding this minor permit 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.

Appendix A: Emission Calculations

Company Name: Nucor Steel
 Address: Crawfordsville, Indiana 46933
 Permit No: 107-21907
 Pit ID: 107-00038
 Reviewer: L. Stapf
 Date: April 3, 2006

Natural Gas Combustion

ATSD App A page 1 of 2

Pollutant	Fuel	Emission Factor	Basis
Four Batch Annealing Furnaces, 14.505 MMBtu/hour each			
SO ₂	Natural Gas	5.92E-04 lb/MMBtu	AP-42, Table 1.4-2 (lb/MMscf value divided by NG HHV of 1013 Btu/scf)
NOx	Natural Gas	9.80E-02 lb/MMBtu	Highest actual stack test result
VOC	Natural Gas	5.43E-03 lb/MMBtu	AP-42, Table 1.4-2 (lb/MMscf value divided by NG HHV of 1013 Btu/scf)
PM ₁₀	Natural Gas	5.60E-03 lb/MMBtu	AP-42, Table 1.4-2 Condensable Particulate (lb/MMscf value divided by NG HHV of 1013 Btu/scf)
TSP	Natural Gas	1.90E-03 lb/MMBtu	AP-42, Table 1.4-2 Filterable Particulate (lb/MMscf value divided by NG HHV of 1013 Btu/scf)
CO	Natural Gas	8.29E-02 lb/MMBtu	AP-42, Table 1.4-2 (lb/MMscf value divided by natural gas HHV of 1013 Btu/scf)
Pb	Natural Gas	5.00E-07 lb/MMBtu	AP-42, Table 1.4-2 (lb/MMscf value divided by natural gas HHV of 1013 Btu/scf)
HAPs	Natural Gas		AP-42, Tables 1.4-3 and 1.4-4 (lb/MMscf value divided by natural gas HHV of 1013 Btu/scf)

1013 BTU per cubic foot natural gas.

Pollutant	Calculations									
Four Batch Annealing Furnaces, 14.505 MMBtu/hour each										
					lbs/hr				tons/yr/unit	tons/yr
SO ₂	14.505 MMBtu/hr	*	5.92E-04 lb/MMBtu	=	0.009	*	8760 hrs/yr / 2000 lbs/ton	=	0.038	* 4 units = 1.51E-01
NOx	14.505 MMBtu/hr	*	9.80E-02 lb/MMBtu	=	1.42	*	8760 hrs/yr / 2000 lbs/ton	=	6.23	* 4 units = 2.49E+01
VOC	14.505 MMBtu/hr	*	5.43E-03 lb/MMBtu	=	0.08	*	8760 hrs/yr / 2000 lbs/ton	=	0.34	* 4 units = 1.38E+00
PM ₁₀	14.505 MMBtu/hr	*	5.60E-03 lb/MMBtu	=	0.081	*	8760 hrs/yr / 2000 lbs/ton	=	0.356	* 4 units = 1.42E+00
TSP	14.505 MMBtu/hr	*	1.90E-03 lb/MMBtu	=	0.028	*	8760 hrs/yr / 2000 lbs/ton	=	0.121	* 4 units = 4.83E-01
CO	14.505 MMBtu/hr	*	8.29E-02 lb/MMBtu	=	1.203	*	8760 hrs/yr / 2000 lbs/ton	=	5.26819	* 4 units = 2.11E+01
Pb	14.505 MMBtu/hr	*	5.00E-07 lb/MMBtu	=	0.000007	*	8760 hrs/yr / 2000 lbs/ton	=	3.2E-05	* 4 units = 1.27E-04
HAPs:					lb/hr				tons/yr/unit	tons/yr
Benzene	14.505 MMBtu/hr	*	2.06E-06 lb/MMBtu	=	2.99E-05	*	8760 hrs/yr / 2000 lbs/ton	=	1.31E-04	* 4 units = 5.24E-04
Formadehyde	14.505 MMBtu/hr	*	7.40E-05 lb/MMBtu	=	1.07E-03	*	8760 hrs/yr / 2000 lbs/ton	=	4.70E-03	* 4 units = 1.88E-02
Hexane	14.505 MMBtu/hr	*	1.76E-03 lb/MMBtu	=	2.55E-02	*	8760 hrs/yr / 2000 lbs/ton	=	1.12E-01	* 4 units = 4.47E-01
Naphthalene	14.505 MMBtu/hr	*	5.98E-07 lb/MMBtu	=	8.67E-06	*	8760 hrs/yr / 2000 lbs/ton	=	3.80E-05	* 4 units = 1.52E-04
Toluene	14.505 MMBtu/hr	*	3.33E-06 lb/MMBtu	=	4.83E-05	*	8760 hrs/yr / 2000 lbs/ton	=	2.12E-04	* 4 units = 8.46E-04

Appendix A: Emission Calculations

Company Name: Nucor Steel
 Address: Crawfordsville, Indiana 46933
 Permit No: 107-21907
 Pit ID: 107-00038
 Reviewer: L. Stapf
 Date: April 3, 2006

Propane Combustion

ATSD App A page 2 of 2

Pollutant	Fuel	Emission Factor	Basis
Four Batch Annealing Furnaces, 14.505 MMBtu/hour each			
SO ₂	Propane	0.00E+00 lb/Mgal	AP-42, Table 1.5-1, industrial boiler
NOx	Propane	1.90E+01 lb/Mgal	AP-42, Table 1.5-1, industrial boiler
VOC	Propane	5.00E-01 lb/Mgal	AP-42, Table 1.5-1 (lb/MMscf = lb/1000 gal * gal/91,500 Btu * 1,000,000 Btu/MMBtu)
PM ₁₀	Propane	6.00E-01 lb/Mgal	AP-42, Table 1.5-1 (lb/MMscf = lb/1000 gal * gal/91,500 Btu * 1,000,000 Btu/MMBtu)
TSP	Propane	6.00E-01 lb/Mgal	AP-42, Table 1.5-1 (lb/MMscf = lb/1000 gal * gal/91,500 Btu * 1,000,000 Btu/MMBtu)
CO	Propane	3.20E+00 lb/Mgal	AP-42, Table 1.5-1 (lb/MMscf = lb/1000 gal * gal/91,500 Btu * 1,000,000 Btu/MMBtu)
Pb	Propane	lb/Mgal	Not available
HAPs	Propane	lb/Mgal	Not available

Pollutant	Calculations														
Four Batch Annealing Furnaces, 14.505 MMBtu/hour each															
					lbs/hr	Each Unit Restriction			tons/yr/unit	tons/yr					
SO ₂	14.505 MMBtu/hr	*	0.00E+00 lb/Mgal	=	0.00E+00	*	654.25 Mgal/yr	/	2000 lbs/ton	=	0.00E+00	*	4 units	=	0.00E+00
NOx	14.505 MMBtu/hr	*	1.90E+01 lb/Mgal	=	1.42E+00	*	654.25 Mgal/yr	/	2000 lbs/ton	=	6.22E+00	*	4 units	=	2.49E+01
VOC	14.505 MMBtu/hr	*	5.00E-01 lb/Mgal	=	3.73E-02	*	654.25 Mgal/yr	/	2000 lbs/ton	=	1.64E-01	*	4 units	=	6.54E-01
PM ₁₀	14.505 MMBtu/hr	*	6.00E-01 lb/Mgal	=	4.48E-02	*	654.25 Mgal/yr	/	2000 lbs/ton	=	1.96E-01	*	4 units	=	7.85E-01
TSP	14.505 MMBtu/hr	*	6.00E-01 lb/Mgal	=	4.48E-02	*	654.25 Mgal/yr	/	2000 lbs/ton	=	1.96E-01	*	4 units	=	7.85E-01
CO	14.505 MMBtu/hr	*	3.20E+00 lb/Mgal	=	2.39E-01	*	654.25 Mgal/yr	/	2000 lbs/ton	=	1.05E+00	*	4 units	=	4.19E+00
Pb	14.505 MMBtu/hr	*	0.00E+00 lb/Mgal	=	0.00E+00	*	654.25 Mgal/yr	/	2000 lbs/ton	=	0.00E+00	*	4 units	=	0.00E+00
HAPs:					lb/hr				tons/yr/unit	tons/yr					
Benzene	14.505 MMBtu/hr	*	2.06E-06 lb/Mgal	=	1.54E-07	*	654.25 Mgal/yr	/	2000 lbs/ton	=	6.74E-07	*	4 units	=	2.70E-06
Formaldehyde	14.505 MMBtu/hr	*	7.40E-05 lb/Mgal	=	5.53E-06	*	654.25 Mgal/yr	/	2000 lbs/ton	=	2.42E-05	*	4 units	=	9.68E-05
Hexane	14.505 MMBtu/hr	*	1.76E-03 lb/Mgal	=	1.31E-04	*	654.25 Mgal/yr	/	2000 lbs/ton	=	5.76E-04	*	4 units	=	2.30E-03
Naphthalene	14.505 MMBtu/hr	*	5.98E-07 lb/Mgal	=	4.47E-08	*	654.25 Mgal/yr	/	2000 lbs/ton	=	1.96E-07	*	4 units	=	7.82E-07
Toluene	14.505 MMBtu/hr	*	3.33E-06 lb/Mgal	=	2.49E-07	*	654.25 Mgal/yr	/	2000 lbs/ton	=	1.09E-06	*	4 units	=	4.36E-06

The hourly emissions are (lb/Mgal) * (Mgal/91.5 MMBtu) * (MMBtu/hour)
 Use the same HAPs as natural gas.
 2617 thousand gallons LPG (Mgal) per year operation restriction
 1013 BTU per cubic foot natural gas.
 0 Wt. percent sulfur in LPG.
 501.3 MMCF/yr nat gas limit
 501.7 MMCF/yr nat gas PTE, full usage