



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

August 23, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant
RE: Nucor Steel / 107-19385-00038
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires 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 of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from 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-AM.dot 9/16/03



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

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August 23, 2004

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

Re: **107-19385-00038**
Permit Amendment to PSD 107-18314-00038

Dear Mr. Sulc:

On May 27, 2004, Nucor Steel was issued a Prevention of Significant Deterioration permit (PSD 107-18314-00038) for the modification of the Castrrip Line. On July 23, 2004, the Office of Air Quality (OAQ) received a permit amendment request to revise the final permit.

Based on the information submitted by Nucor Steel and pursuant to 326 IAC 2-7-11(a), Conditions D.1.3 and D.1.8 of PSD permit 107-18314-00038 are hereby amended as follows:

D.1.3 Flare (12 MMBTU/hour) PSD BACT Limits [326 IAC 2-2]

Pursuant to 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

- (a) The 12 million British Thermal Unit per hour (MMBTU/hour) open flare burner shall use natural gas as primary fuel and propane as back up fuel.
- (b) The collateral nitrogen oxide (NO_x) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.10 pounds per MMBTU.
- (c) The collateral sulfur dioxide (SO₂) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.0006 pounds per MMBTU.
- (d) The collateral carbon monoxide (CO) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.084 pounds per MMBTU.
- (e) The collateral volatile organic compound (VOC) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.0055 pounds per MMBTU.
- (f) The collateral PM/PM₁₀ (filterable and condensable) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.0076 pounds per MMBTU.



D.1.8 Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP), and make available upon request to IDEM, OAQ and the US EPA.
- (c) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.

All other conditions of PSD permit 107-18314-00038 shall remain unchanged and in effect. This permit decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

If you have any questions regarding this amendment, please contact Ms. Iryn Calilung of my staff at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015 or by telephone at (317) 233-5692 or toll free at 1-800-451-6027 extension 3-5692 or by e-mail at icalilun@dem.state.in.us.

Sincerely,

Original signed by
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Enclosure: TSD of Permit Amendment 107-19385-00038

cc: File – Montgomery County
Montgomery County Health Department
Air Compliance Section Inspector – RS
Compliance Data Section - KA
Technical Support and Modeling - MB
Part 70 Operating Permit Reviewer – MG

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

**Technical Support Document (TSD)
Permit Amendment to a PSD Permit**

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
County Location:	Montgomery
SIC Code:	3312 (Steel Mill)
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Major Source, CAA Section 112
Permit Amendment:	107-19385-00038
Permit Writer:	Iryn Calilung 317/233-5692 icalilun@dem.state.in.us

Background

On May 27, 2004, the Office of Air Quality (OAQ) issued a PSD permit (107-18314-00038) to Nucor Steel, for the modification of the Castrip Line by constructing a vacuum degasser, with an open flare as emission control; a low NOx boiler; a natural gas fired ladle preheater; contact and non contact cooling towers; chemical storage tanks; and alloy unloading, storage, and feed systems.

Amendment Evaluation

On July 23, 2004, the Office of Air Quality (OAQ) received a request from Nucor Steel to amend the PSD Permit 107-18314-00038. The summary of the requests and corresponding OAQ evaluations are listed below:

- (1) Condition D.1.3(f) of PSD Permit 107-18314-00038
Condition D.1.3(f) of PSD Permit 107-18314-00038 specified the filterable PM limit for the flare at 0.0019 lbs/MMBTU. Nucor is requesting that this limit should be deleted and replaced with the total filterable/condensable limit of 0.0076 lbs/MMBTU. This is similar to how OAQ handled the particulate limit for the low NOx boiler.

OAQ Evaluation:

OAQ intended to combine the PM and PM₁₀ limits into one limit for the combustion units involved in the PSD Permit 107-18314-00038. However, the particulate limits for the open flare have been overlooked. Therefore, this amendment agrees with the request to correct the PM and PM₁₀ limits for the open flare. Condition D.1.3(f) has been revised as follows (changes are shown in bold and strikeout for emphasis):

D.1.3 Flare (12 MMBTU/hour) PSD BACT Limits [326 IAC 2-2]
Pursuant to 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

- (f) ~~The collateral PM_(filterable) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.0019 pounds per MMBTU.~~
- (g) The collateral **PM/PM₁₀** (filterable and condensable) emissions from the 12 MMBTU/hour flare burner shall not exceed 0.0076 pounds per MMBTU.

(2) Condition D.1.8(b) of PSD Permit 107-18314-00038

Condition D.1.8(b) is a requirement to maintain records of the operating temperature of the flare. Nucor Steel points out that this should be deleted because there is no requirement to monitor the temperature of the flare in the permit, therefore, there should be no requirement to keep such records.

OAQ Evaluation:

OAQ agrees to delete the requirement. Subsequent portion the condition has been renumbered (changes are shown in bold and strike out for emphasis).

D.1.8 Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- ~~(b) The Permittee shall maintain records of the operating temperature of the flare, and make available upon request to IDEM, OAQ and the US EPA.~~
- (b e)** The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP), and make available upon request to IDEM, OAQ and the US EPA.
- (c d)** Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (d e)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.

(3) Page 26 of 35 of TSD Addendum of PSD Permit 107-18314-00038

The Addendum to the Technical Support Document (TSD) of the PSD Permit 107-18314-00038 did not reflect the change in the NOx BACT Limit for the Ladle Preheater from 0.05 to 0.1 lbs/MMBTU made for the final permit:

OAQ Evaluation:

Page 26 of 35 of the TSD Addendum has the following statement as part of OAQ's response to comments. This statement is incorrect because the NOx BACT limit for the ladle preheater has been changed from 0.05 to 0.1 lbs/MMBTU. Therefore, this statement is deleted.

~~(b) There is no change in the NO_x PSD BACT limit for the ladle preheater, therefore there is no need to change the NO_x potential to emit.~~

It is noted that the revised potential to emit in Table 3 (Natural Gas Ladle Preheater) Page 33 of 35 of the TSD Addendum was correct and used the revised emission factor.

This clarification did cause any revision to the final permit.

(4) Page 32 of 35 of TSD Addendum of PSD Permit 107-18314-00038
 Nucor Steel requests that word “violation” be deleted and replace with “exceedance” in the following statement: The modeling showed no violations of the impact levels for CO.”

OAQ Evaluation:

This request has been addressed in the TSD Addendum. OAQ indicated that the change in the word from “violation” to “exceedance” does not change the intent of the statement.

The modeling showed no **exceedance** of the impact levels for CO.”

As also indicated in the TSD addendum, this clarification did not cause any revision to the final permit.

(5) Tables 8 and 9 of Page 35 of 35 of TSD Addendum of PSD Permit 107-18314-00038
 Tables 8 and 9 incorrectly calculated the SO₂, NO_x and CO potential to emit and emission increases by omitting to divide by 2000.

OAQ Evaluation:

OAQ agrees with the change. The following tables show the corrected values.

Table 8 Emissions Due to Increase Utilization				
Pollutant	Emission Factor (lbs/ton)	PTE (tons/year)	Past Actual (tons/year)	Increase Emissions (PTE- Past Actual)
SO ₂	0.03	17.74	1.32	16.42
NO _x	0.007	4.14	0.31	3.83
VOC *	- -	less than 40	less than 40	- -
CO	0.04	23.65	1.75	21.9
PM	0.0003 gr/dscf	39 **	6.5 ***	32.5
PM ₁₀	0.0003 gr/dscf	39 **	6.5 ***	32.5

Maximum Capacity = 135 tons/hour
 Average Actual Steel Throughput = 87,810 tons/year
 The emission factors are based on the stack tests performed by Nucor Steel in January 2003.
 * There was no VOC limit specified for the Castrip under PSD permit 107-12143-00038, issued on January 19, 2001 because the VOC net emissions are less than the PSD Significant level of 40 tons/year.
 ** The PM and PM₁₀ PTE were derived from the PSD permit 107-12143-00038, issued on January 19, 2001.
 *** The PM and PM₁₀ actual emissions are estimates based on the actual tested grain loading.
 PTE = (Emission Factor lbs/ton)*(135 tons/hour)*(8760 hours/year)*(1 ton/2000 lbs) = tons/year
 Actual Emissions = (Emission Factor lbs/ton)*(87,810 tons/year)*(1 ton/2000 lbs) = tons/year
 Increase Emissions = (PTE) - (Actual Emissions) = tons/year

Table 9 PSD Evaluation of the Modification					
Pollutant	New units (tons/year) (Table 7)	Increase Utilization of Castrip Line (tons/year) (Table 8)	Total	PSD Significant Levels (tons/year)	PSD (Yes or No)
SO ₂	12.08	16.42	28.5	40	No
NO _x	24.41	3.83	28.24	40	No
VOC	4.35	less than 40	less than 40	40	No
CO	72.2	21.9	94.1	100	No
PM	13.88	32.5	46.38	25	Yes
PM ₁₀	13.88	32.5	46.38	15	Yes
Pb		--		0.6	No
Mercury		--		0.1	No
Beryllium		--		0.0004	No
Asbestos		--		0.007	No
Vinyl Chloride		--		1.0	No
Fluorides		--		3.0	No
Sulfuric Acid Mist		--		7.0	No
Hydrogen Sulfide		--		10	No
Total Reduced Sulfur		--		10	No

Recommendations and Conclusion

- (1) Based on the facts, conditions and evaluations made, the Office of Air Quality (OAQ) staff recommends to the Indiana Department of Environmental Management (IDEM) Commissioner that the findings in the Permit Amendment 107-19385-00038 be issued.
- (2) Unless otherwise stated, information used in this review was derived from the letter submitted on July 23, 2004 by Nucor Steel.
- (3) A copy of the amendment is available on the Internet at: www.IN.gov/idem/air/permits/Air-Permits-Online.

IDEM Contact

Questions regarding this amendment can be directed to Iryn Calilung at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015 or by telephone at (317) 233-5692 or toll free at 1-800-451-6027 extension 3-5692 or by e-mail at icalilun@dem.state.in.us.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.IN.gov/idem/guides.