



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: July 8, 2011

RE: Union Electric Steel / 127-30217-00121

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

Notice of Decision: Approval - Registration

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 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

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, Suite N 501E, 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
FN-REGIS.dot 1/2/08



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REGISTRATION OFFICE OF AIR QUALITY

**Union Electric Steel
3702 Montdale Park Drive
Valparaiso, Indiana 46384-0029**

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

| | |
|--|-----------------------------|
| Registration No. 127-30217-00121 | |
| Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality | Issuance Date: July 8, 2011 |

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary machining and heat treating operation for steel rolls.

| | |
|------------------------------|--|
| Source Address: | 3702 Montdale Park Drive, Valparaiso, IN 46384-0029 |
| General Source Phone Number: | 219-464-1031 |
| SIC Code: | 3547 (Rolling Mill Machinery and Equipment) |
| County Location: | Porter |
| Source Location Status: | Nonattainment for PM _{2.5} standard Attainment for all other criteria pollutants |
| Source Status: | Registration |

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) Car Bottom Furnace, identified as 001, constructed in 1971, with a maximum capacity of 7.8 MMBtu/hr, heating a maximum capacity of 1,600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (b) One (1) Car Bottom Furnace, identified as 002, constructed in 1971, with a maximum capacity of 7.8 MMBtu/hr, heating a maximum capacity of 1,600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (c) One (1) Car Bottom Furnace, identified as 003, constructed in 1971, with a maximum capacity of 9.9 MMBtu/hr, heating a maximum capacity of 1,600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (d) One (1) Car Bottom Furnace, identified as 004, constructed in 1971, with a maximum capacity of 8.8 MMBtu/hr, heating a maximum capacity of 1,600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (e) Three (3) Vertical Anneal Furnaces, identified as 005 A, B, and C, constructed in 1971, with a maximum capacity of 6.0 MMBtu/hr each, heating a maximum capacity of 3,300 pounds of steel per hour each, using no control device and exhausting to the indoors.
- (f) One (1) Packaging Materials Line, identified as 006, constructed in 1971, applying coating with a brush or roller with a maximum capacity of 0.45 rolls per hour, using no control device and exhausting to the indoors.
- (g) One (1) natural gas-oxygen fired Flame Hardening heater, identified as 007, with a maximum capacity of 0.45 MMBtu/hr.
- (h) Hot water heater for personal use identified as 008.
- (i) Housekeeping and janitorial activities including rest rooms and associated cleanup operations and supplies and mobile floor sweepers and scrubbers identified as 009.

- (j) Office related activities including office supplies and equipment, photocopying equipment and associated supplies and paper shredding identified as 010.
- (k) Storage equipment and activities, identified as 011, including storage tanks, reservoirs and pumping and handling equipment of any size containing soap, wax, vegetable oil, grease, animal fat and nonvolatile aqueous solutions and portable containers used for the collection, storage and disposal of materials using appropriate lids and covers.
- (l) Eighty-four (84) natural gas fired space heaters for personal comfort, identified as 012, with a maximum capacity of 0.05 MMBtu/hr each.
- (m) Vessels storing hydraulic oils, lubricating oils, machining oils and machining fluids identified as 013.
- (n) One (1) non-contact cooling tower, identified as 014, using forced and induced draft cooling tower systems not regulated under a NESHAP.
- (o) Quenching Operations used with the heat treating process identified as 015.
- (p) One (1) conveyor, identified as 016, to move coils for processing
- (q) Blowdown for the cooling tower identified as 017.
- (r) Wet Roll machining and polishing identified as 018.

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration 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 2-1.1-1) shall prevail.

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

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 127-30217-00121 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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

Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
- (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
- (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

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

The Registrant shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 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 registration:

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

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) One (1) Packaging Materials Line, identified as 006, constructed in 1971, applying coating with a brush or roller with a maximum capacity of 0.45 rolls per hour, using no control device and exhausting to the indoors.

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

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Volatile Organic Compounds [326 IAC 8-2-4]

The volatile organic compound (VOC) input to the Packaging Material Line shall be limited to less than fifteen (15) pounds per day in order to render the requirements of 326 IAC 8-2-4 (Coil Coating Operations) not applicable.

Compliance Determination Requirements

D.1.2 Volatile Organic Compounds (VOC)[326 IAC 8-1-2] [326 IAC 8-1-4]

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

Record Keeping and Reporting Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.3 Volatile Organic Compounds

- (a) To document the compliance status with Condition D1.1, the Registrant shall maintain records of:
- (1) The amount and VOC content of each coating material and dilution solvent and cleanup solvent used for each day. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount of materials used.
 - (2) The total VOC usage for each day.
- (b) Records of all required monitoring data, reports and support information required by this registration 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 owner or operator of this source, the owner or operator of this source shall furnish the records to the Commissioner within a reasonable time.
- (c) Unless otherwise specified in this registration, all record keeping requirements not already legally required shall be implemented within ninety (90) days of approval date of this Registration.

- (d) Section C - General Record Keeping Requirements contains the Registrant's obligations with regard to the records required by this condition.

D.1.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.1.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Registrant does require a certification that meets the requirements of 326 IAC 2-7-6(1) by an authorized individual as defined by 326 IAC 2-7-1 (34).

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

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

| | |
|--------------------------|-----------------------------------|
| Company Name: | Union Electric Steel, Inc. |
| Address: | 3702 Montdale Park Drive |
| City: | Valparaiso, IN 46384-0029 |
| Phone Number: | 219-464-1031 |
| Registration No.: | 127-30217-00121 |

I hereby certify that Union Electric Steel Inc. is:

still in operation.

I hereby certify that Union Electric Steel Inc. is:

no longer in operation.

in compliance with the requirements of Registration No. 127-30217-00121.

not in compliance with the requirements of Registration No. 127-30217-00121.

| |
|---------------------------------------|
| Authorized Individual (typed): |
| Title: |
| Signature: |
| Phone Number: |
| Date: |

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

| |
|-----------------------|
| Noncompliance: |
| |
| |
| |
| |

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

Source Name: Union Electric Steel Corporation
Source Address: 1327 Montdale Drive, Valparaiso, IN 46384
Permit No.: 127-30217-00121
Facility: Packaging Materials Line
Parameter: VOC
Limit: Less than 15 pounds per day

Month: _____ Year: _____

| Day | | Day | |
|-----|--|-----|--|
| 1 | | 17 | |
| 2 | | 18 | |
| 3 | | 19 | |
| 4 | | 20 | |
| 5 | | 21 | |
| 6 | | 22 | |
| 7 | | 23 | |
| 8 | | 24 | |
| 9 | | 25 | |
| 10 | | 26 | |
| 11 | | 27 | |
| 12 | | 28 | |
| 13 | | 29 | |
| 14 | | 30 | |
| 15 | | 31 | |
| 16 | | | |

No deviation occurred in this month.

Deviation/s occurred in this month.
Deviation has been reported on _____

Submitted by: _____
Title/Position: _____
Signature: _____
Date: _____
Phone: _____

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for Registration

Source Description and Location

| | |
|--------------------------|---|
| Source Name: | Union Electric Steel Corporation |
| Source Location: | 3702 Montdale Park Drive, Valparaiso, IN 46384 |
| County: | Porter |
| SIC Code: | 3547 (Rolling Mill Machinery and Equipment) |
| Registration No.: | 127-30217-00121 |
| Permit Reviewer: | Deborah Cole |

On February 14, 2011, the Office of Air Quality (OAQ) received an application from Union Electric Steel Corporation related to the operation of an existing stationary source for machining and heat treating steel rolls.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Porter County.

| Pollutant | Designation |
|---|--|
| SO ₂ | Cannot be classified for the area bounded on the north by Lake Michigan; on the west by the Lake County and Porter County line; on the south by I-80 and I-90; and on the east by the LaPorte County and Porter County line. The remainder of Porter County is better than national standards. |
| CO | Unclassifiable or attainment effective November 15, 1990. |
| O ₃ | Attainment effective May 11, 2010, for the 8-hour ozone standard. ¹ |
| PM ₁₀ | Unclassifiable effective November 15, 1990. |
| NO ₂ | Cannot be classified or better than national standards. |
| Pb | Not designated. |
| <p>¹The U. S. EPA has acknowledged in both the proposed and final rulemaking for this redesignation that the anti-backsliding provisions for the 1-hour ozone standard no longer apply as a result of the redesignation under the 8-hour ozone standard. Therefore, permits in Porter County are no longer subject to review pursuant to Emission Offset, 326 IAC 2-3.</p> <p>Basic nonattainment designation effective federally April 5, 2005, for PM_{2.5}.</p> | |

- (a) **Ozone Standards**
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Porter County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM_{2.5}**
U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated

Porter County as nonattainment for PM_{2.5}. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a lawsuit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's New Source Review Rule for PM_{2.5} promulgated on May 8, 2008. These rules became effective on July 15, 2008. Therefore, direct PM_{2.5} and SO₂ emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

Porter County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

Background and Description of Emission Units

The Office of Air Quality (OAQ) has reviewed an application, submitted by Union Electric Steel Corporation on February 14, 2011, relating to the operation of an existing stationary source for machining, heat treating and coating steel rolls. No pickling or degreasing is done at this facility. The source has been operating since June 1, 1971 without the proper permit. The source is being issued a Registration based on calculations submitted which show their NO_x emissions are greater than ten (10) tons per year but less than twenty-five (25) tons per year. All other emissions are within Registration thresholds. Per the source, majority of the steel rolls are supplied by mills outside of Indiana.

The source consists of the following existing emission unit(s):

- (a) One (1) Car Bottom Furnace, identified as 001, constructed in 1971, with a maximum capacity of 7.8 MMBtu/hr, heating a maximum capacity of 1, 600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (b) One (1) Car Bottom Furnace, identified as 002, constructed in 1971, with a maximum capacity of 7.8 MMBtu/hr, heating a maximum capacity of 1, 600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (c) One (1) Car Bottom Furnace, identified as 003, constructed in 1971, with a maximum capacity of 9.9 MMBtu/hr, heating a maximum capacity of 1, 600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (d) One (1) Car Bottom Furnace, identified as 004, constructed in 1971, with a maximum capacity of 8.8 MMBtu/hr, heating a maximum capacity of 1, 600 pounds of steel per hour, using no control device and exhausting to the indoors.
- (e) Three (3) Vertical Anneal Furnaces, identified as 005 A, B, and C, constructed in 1971, with a maximum capacity of 6.0 MMBtu/hr each, heating a maximum capacity of 3,300 pounds of steel per hour each, using no control device and exhausting to the indoors.
- (f) One (1) Packaging Materials Line, identified as 006, constructed in 1971, applying coating with a brush or roller with maximum capacity of 0.45 rolls per hour, using no control device and exhausting to the indoors.
- (g) One (1) natural gas-oxygen fired Flame Hardening heater, identified as 007, with a maximum

capacity of 0.45 MMBtu/hr.

- (h) Hot water heater for personal use identified as 008.
- (i) Housekeeping and janitorial activities including rest rooms and associated cleanup operations and supplies and mobile floor sweepers and scrubbers identified as 009.
- (j) Office related activities including office supplies and equipment, photocopying equipment and associated supplies and paper shredding identified as 010.
- (k) Storage equipment and activities, identified as 011, including storage tanks, reservoirs and pumping and handling equipment of any size containing soap, wax, vegetable oil, grease, animal fat and nonvolatile aqueous solutions and portable containers used for the collection, storage and disposal of materials using appropriate lids and covers.
- (l) Eighty-four (84) natural gas fired space heaters for personal comfort, identified as 012, with a maximum capacity of 0.05 MMBtu/hr each.
- (m) Vessels storing hydraulic oils, lubricating oils, machining oils and machining fluids identified as 013.
- (n) One (1) non-contact cooling tower, identified as 014, using forced and induced draft cooling tower systems not regulated under a NESHAP.
- (o) Quenching Operations used with the heat treating process identified as 015.
- (p) One (1) conveyor, identified as 016, to move coils for processing
- (q) Blowdown for the cooling tower identified as 017.
- (r) Wet Roll machining and polishing identified as 018.

| |
|---------------------------|
| Enforcement Issues |
|---------------------------|

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules.

| |
|------------------------------|
| Emission Calculations |
|------------------------------|

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| Process/ Emission Unit | Potential To Emit of the Entire Source (tons/year) | | | | | | | | | |
|---|--|--------------------|----------------------|-----------------|--------------|-------------|--------------|------------------------------|-------------|--------------------|
| | PM | PM ₁₀ * | PM _{2.5} ** | SO ₂ | NOx | VOC | CO | GHGs as CO ₂ e*** | Total HAPs | Worst Single HAP |
| Furnaces and other heaters (Natural Gas Combustion)** | 0.37 | 1.48 | 1.11 | 0.12 | 19.49 | 1.07 | 16.37 | 23,531 | 0.06 | 0.06 (Hexane) |
| Packaging Materials Line | - | - | - | - | - | 5.16 | - | - | 0.02 | 0.01 (Naphthalene) |
| Wet Machining | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| Fugitive Emissions | 0.35 | 0.07 | 0.02 | - | - | - | - | - | - | - |
| Total PTE of Entire Source | 0.72 | 1.55 | 1.13 | 0.12 | 19.49 | 6.23 | 16.37 | 23,531 | 0.08 | - |
| Exemptions Levels** | 5 | 5 | 5 | 10 | 10 | 5 or 10 | 25 | 100,000 | 25 | 10 |
| Registration Levels** | 25 | 25 | 25 | 25 | 25 | 25 | 100 | 100,000 | 25 | 10 |

negl. = negligible

*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

** PM2.5 listed is direct PM_{2.5}.

*** The 100,000 CO₂e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of NOx and VOC is within the range listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated criteria pollutants is less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Metal Coil (40 CFR 63, Subpart SSSS) are not included in this permit because the source is not a major source for HAPs.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Iron and Steel Foundries (40 CFR 63, Subpart EEEEE) are not included in this permit because the source is not part of an iron and steel foundry that is (or part of) a major source of HAPs nor does it contain melting furnaces, scrap preheaters, pouring areas and stations.
- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Integrated Iron and Steel Manufacturing Plants (40 CFR 63, Subpart FFFFF) are not included in this permit because the source does not own or operate an integrated iron and steel manufacturing facility that is (or is part of) a major source of HAP emissions.
- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Iron and Steel Foundries Area Sources (40 CFR 63, Subpart ZZZZZ) are not included in this permit because the source does not own or operate an iron and steel foundry nor does it meet the definition of "foundry" as defined in § 63.10903 of Subpart ZZZZZ.
- (f) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources (40 CFR 63, Subpart HHHHH) are not included in this permit because the source does not perform paint stripping activities, auto body refinishing or use spray application of coatings containing target HAPs.
- (g) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Nine Metal Fabricating and Finishing Source Categories (40 CFR 63, Subpart XXXXXX) are not included in this permit because the source is not engaged in operation in one of the nine source categories listed in § 63.11514.
- (h) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (d) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.

- (b) **326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) **326 IAC 2-6 (Emission Reporting)**
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is located in Porter County, it has actual emissions of NO_x and VOC of less than twenty-five (25) tons per year, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) **326 IAC 5-1 (Opacity Limitations)**
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
- (1) 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.
 - (2) 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.
- (e) **326 IAC 6-4 (Fugitive Dust Emissions Limitations)**
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.
- (f) **326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)**
The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.

Natural Gas Combustion Sources

- (a) **326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)**
The requirements of 326 IAC 6-2 are not applicable to the natural gas-fired combustion units identified as 001 through 005 because these units are not a source of indirect heating.
- (b) **326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)**
The requirements of 326 IAC 6-3-1 are not applicable to the natural gas-fired combustion units identified as 001 through 005 each, do not meet the definition of a "manufacturing process", as defined in 326 IAC 6-3-1.5(2). Therefore, each of these units is exempt from 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).
- (c) **326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations: Applicability)**
The requirements of 326 IAC 7-1.1 are not applicable to the natural gas-fired combustion units identified as 001 through 005 because these units have the potential to emit less than twenty-five (25) tons per year and ten (10) pounds per hour respectively

Packaging Materials Line

- (d) 326 IAC 6-3-1 (Particulate Emission Limitations for Manufacturing Processes)
The requirements of 326 IAC 6-3-1 (Particulate Emission Limitations for Manufacturing Processes) are not applicable to the packaging materials line because the coating applied to the steel rolls is applied using a brush or roller.
- (e) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The requirements of 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) are not applicable to the packaging materials line because no particulate is emitted in this process.
- (f) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The requirements of 326 IAC 8-1-6 are not applicable to the packaging materials line because the unlimited potential emissions of VOC are less than twenty-five (25) tons per year.
- (g) 326 IAC 8-2-4 (Surface Coating Emissions Limitations - Coil Coating Operations - Packaging Materials Line)
Pursuant to 326 IAC 8-2-4, no owner or operator of a coil coating line may allow or permit the discharge of any volatile organic compounds in excess of 0.31 kilograms per liter of coating (2.6 pounds per gallon) excluding water.

The source was in existence as of July 1, 1990, is located in Porter County and the potential to emit of the packaging materials line is greater than fifteen (15) pounds per day, but the source has opted to limit the VOC input to less than fifteen (15) pounds per day in order to render the requirements of 326 IAC 8-2-4 not applicable. Therefore, the owner or operator of this source shall comply with the following:

- (A) The VOC usage for the packaging materials line shall be less than 15.0 pounds per day.

Compliance with this limit renders the requirements of 326 IAC 8-2-4 (Coil Coating Operations) not applicable.
- (B) To document compliance with this limit, the owner or operator of this source shall maintain records for the total VOC usage for the packaging materials line each day. These records shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limit for the packaging materials line:
 - (1) The amount and VOC content of each coating material, dilution solvent, and cleanup solvent used for each day. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount of materials used.
 - (2) The total VOC usage for each day.
- (C) Records of all required monitoring data, reports and support information required by this Registration 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 owner or operator of this source, the owner or operator of this source shall furnish the records to the

Commissioner within a reasonable time.

- (D) Unless otherwise specified in this Registration, all record keeping requirements not already legally required shall be implemented within ninety (90) days of approval date of this Registration.

Conclusion and Recommendation

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 February 14, 2011.

The operation of this source shall be subject to the conditions of the attached proposed Registration No. 127-30217-00121. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Deborah Cole at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5377 or toll free at 1-800-451-6027 extension 4-5377.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem

Appendix A: Emissions Calculations

Emissions Summary

Company Name: Union Electric Steel Corporation
Address City IN Zip: 3702 Montdale Park Drive, Valparaiso, IN 46384
Permit Number: 127-30217-00121
Reviewer: Deborah Cole
Date: May 20, 2011

UNCONTROLLED POTENTIAL TO EMIT IN TONS PER YEAR - Criteria Pollutants

| Emission Units | PM | PM10 | PM2.5 | SO₂ | NO_x | VOC | CO | GHG | Single HAP | Combined HAP |
|--|-------------|-------------|--------------|-----------------------|-----------------------|-------------|--------------|------------------|-------------------|---------------------|
| Natural Gas Combustion | 0.37 | 1.48 | 1.11 | 0.12 | 19.49 | 1.07 | 16.37 | 23,531.54 | 0.35 | 0.37 |
| Packaging Materials Line | - | - | - | - | - | 5.16 | - | - | 0.01 | 0.02 |
| Wet Machining * | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - | 0.00 | 0.00 |
| Fugitive Emissions (Paved Roads-unmitigated) | 0.35 | 0.07 | 0.02 | - | - | - | - | - | - | - |
| TOTAL | 0.72 | 1.55 | 1.13 | 0.12 | 19.49 | 6.23 | 16.37 | 23,531.54 | | 0.39 |

* Machining is a wet process that does not generate any significant emissions.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Company Name: Union Electric Steel Corporation
Address City IN Zip: 3702 Montdale Park Drive, Valparaiso, IN 46384
Permit Number: 127-30217-00121
Reviewer: Deborah Cole
Date: May 20, 2011

| | Heat Input Capacity MMBtu/hr | HHV | Potential Throughput |
|---------------------------------------|---------------------------------|----------------|----------------------|
| | | mmBtu mmscf | MMCF/yr |
| Car Bottom Furnace (001) | 7.80 | 1000 | 68.3 |
| Car Bottom Furnace (002) | 7.80 | 1000 | 68.3 |
| Car Bottom Furnace (003) | 9.90 | 1000 | 86.7 |
| Car Bottom Furnace (004) | 8.80 | 1000 | 77.1 |
| Vertical Anneal Furnaces (005A, B, C) | 6.00 | 1000 | 52.6 |
| Space Heaters | 4.20 | 1000 | 36.8 |
| TOTAL | 44.50 | | 389.82 |

There are no process emissions determined from these furnaces, only combustion emissions.

| Emission Factor in lb/MMCF | Pollutant | | | | | | |
|-------------------------------|-----------|-------|-------|-----|---------------------------|-----|------|
| | PM* | PM10* | PM2.5 | SO2 | NOx 100 **see below | VOC | CO |
| Potential Emission in tons/yr | 0.4 | 1.5 | 1.1 | 0.1 | 19.5 | 1.1 | 16.4 |

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

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

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

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

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

See page 2 for HAPs emissions calculations.

updated 12/10

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

HAPs Emissions

Company Name: Union Electric Steel Corporation

Address City IN Zip: 3702 Montdale Park Drive, Valparaiso, IN 46384

Permit Number: 127-30217-00121

Reviewer: Deborah Cole

Date: May 20, 2011

| HAPs - Organics | | | | | | |
|-------------------------------|--------------------|----------------------------|-------------------------|-------------------|--------------------|-----------|
| Emission Factor in lb/MMcf | Benzene 2.1E-03 | Dichlorobenzene 1.2E-03 | Formaldehyde 7.5E-02 | Hexane 1.8E+00 | Toluene 3.4E-03 | Total |
| Potential Emission in tons/yr | 0.0004093 | 0.0002339 | 0.0146183 | 0.3508380 | 0.0006627 | 0.3667621 |

| HAPs - Metals | | | | | | |
|-------------------------------|-----------------|--------------------|---------------------|----------------------|-------------------|----------|
| Emission Factor in lb/MMcf | Lead 5.0E-04 | Cadmium 1.1E-03 | Chromium 1.4E-03 | Manganese 3.8E-04 | Nickel 2.1E-03 | Total |
| Potential Emission in tons/yr | 0.000097 | 0.000214 | 0.000273 | 0.000074 | 0.000409 | 0.001068 |

Methodology is the same as page 1.

Total HAPs: 0.3678303

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

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Greenhouse Gas Emissions

Company Name: Union Electric Steel Corporation
Address City IN Zip: 3702 Montdale Park Drive, Valparaiso, IN 46384
Permit Number: 127-30217-00121
Reviewer: Deborah Cole
Date: May 20, 2011

| Emission Factor in lb/MMcf | Greenhouse Gas | | |
|---------------------------------------|----------------|----------|----------|
| | CO2 | CH4 | N2O |
| | 120,000 | 2.3 | 2.2 |
| Potential Emission in tons/yr | 23389.2 | 0.448293 | 0.428802 |
| Summed Potential Emissions in tons/yr | 23,390.08 | | |
| CO2e Total in tons/yr | 23,531.54 | | |

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential

**Appendix A: Emissions Calculations
VOC and Particulate
Packaging Materials Line**

**Company Name: Union Electric Steel Corporation
Address City IN Zip: 3702 Montdale Park Drive, Valparaiso, IN 46384
Permit Number: 127-30217-00121
Reviewer: Deborah Cole
Date: May 20, 2011**

| Material | Density (Lb/Gal) | Weight % Volatile (H2O & Organics) | Weight % Water | Weight % Organics | Volume % Water | Volume % Non-Volatiles (solids) | Gal of Mat. (per hour) | Pounds VOC per gallon of coating less water | Pounds VOC per gallon of coating | Potential VOC pounds per hour | Potential VOC pounds per day | Potential VOC tons per year | Particulate Potential (ton/yr) | lb VOC/gal solids | Transfer Efficiency |
|----------------|------------------|------------------------------------|----------------|-------------------|----------------|---------------------------------|------------------------|---|----------------------------------|-------------------------------|------------------------------|-----------------------------|--------------------------------|-------------------|---------------------|
| Ferrocote #673 | 7.14 | 64.20% | 0.0% | 64.2% | 0.0% | 34.80% | 0.20 | 4.70 | 4.70 | 0.94 | 22.56 | 4.12 | 0.00 | 13.17 | 100% |
| Tectyl #511 | 7.31 | 30.00% | 0.0% | 30.0% | 0.0% | 70.00% | 0.06 | 2.80 | 2.80 | 0.17 | 4.03 | 0.74 | 0.00 | 3.13 | 100% |
| Tectyl #506 | 7.31 | 54.00% | 0.0% | 54.0% | 0.0% | 46.00% | 0.02 | 3.48 | 3.48 | 0.07 | 1.67 | 0.30 | 0.00 | 8.58 | 100% |
| | | | | | | | | | 1.18 | 28.26 | 5.16 | | | | |

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

Company Name: Union Electric Steel Corporation
Address City IN Zip: 3702 Montdale Park Drive, Valparaiso, IN 46384
Permit Number: 127-30217-00121
Reviewer: Deborah Cole
Date: May 20, 2011

| Material | Density (lbs/gal) | Maximum Usage* (gals/year) | Weight % Toluene | Weight % Naphthalene | Weight % Xylene |
|----------------|-------------------|----------------------------|------------------|----------------------|-----------------|
| Ferrocote #673 | 7.14 | 540 | 0.7% | 0.3% | 0.0% |
| Tectyl #511 | 7.31 | 165 | 0.0% | 0.0% | 0.3% |
| Tectyl #506 | 7.31 | 55 | 0.0% | 0.0% | 0.3% |

| Potential to Emit of HAPs (tons/year) | | | | | |
|---------------------------------------|-------------------|----------------------------|-------------|-------------|-------------|
| Material | Density (lbs/gal) | Maximum Usage* (gals/year) | Toluene | Naphthalene | Xylene |
| Ferrocote #673 | 7.14 | 540 | 0.013 | 0.01 | 0.00 |
| Tectyl #511 | 7.31 | 165 | 0.000 | 0.00 | 0.00 |
| Tectyl #506 | 7.31 | 55 | 0.000 | 0.00 | 0.00 |
| Total PTE of HAP (tons/year) | | | 0.01 | 0.01 | 0.00 |

METHODOLOGY

PTE of HAPS (tons/year) = Density (lbs/gal) x Maximum Usage (gals/year) x Weight % HAP x 1 ton/2000 lbs

**Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads**

Company Name: Union Electric Steel Corporation
Source Address: 3702 Montdale Park Drive, Valparaiso, IN 46384
Permit Number: 127-30217-00121
Reviewer: Deborah Cole
Date: May 20, 2011

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

| Type | Maximum number of vehicles per day | Number of one-way trips per day per vehicle | Maximum trips per day (trip/day) | Maximum Weight Loaded (tons/trip) | Total Weight driven per day (ton/day) | Maximum one-way distance (feet/trip) | Maximum one-way distance (mi/trip) | Maximum one-way miles (miles/day) | Maximum one-way miles (miles/yr) |
|---|------------------------------------|---|----------------------------------|-----------------------------------|---------------------------------------|--------------------------------------|------------------------------------|-----------------------------------|----------------------------------|
| Vehicle (entering plant) (one-way trip) | 6.0 | 1.0 | 6.0 | 22.5 | 135.0 | 400 | 0.076 | 0.5 | 165.9 |
| Vehicle (leaving plant) (one-way trip) | 6.0 | 1.0 | 6.0 | 22.5 | 135.0 | 400 | 0.076 | 0.5 | 165.9 |
| | 0.0 | 1.0 | 0.0 | 1.0 | 0.0 | 10000 | 1.894 | 0.0 | 0.0 |
| | 0.0 | 1.0 | 0.0 | 1.0 | 0.0 | 10000 | 1.894 | 0.0 | 0.0 |
| Total | | | 12.0 | | 270.0 | | | 0.9 | 331.8 |

Average Vehicle Weight Per Trip = tons/trip
 Average Miles Per Trip = miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

| | PM | PM10 | PM2.5 | |
|-----------|-------|--------|---------|---|
| where k = | 0.011 | 0.0022 | 0.00054 | lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1) |
| W = | 22.5 | 22.5 | 22.5 | tons = average vehicle weight (provided by source) |
| sL = | 9.7 | 9.7 | 9.7 | g/m ² = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3) |

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$ (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$
 where p = days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = days per year

| | PM | PM10 | PM2.5 | |
|--|-------|-------|--------|---------|
| Unmitigated Emission Factor, $E_f =$ | 2.082 | 0.416 | 0.1022 | lb/mile |
| Mitigated Emission Factor, $E_{ext} =$ | 1.904 | 0.381 | 0.0935 | lb/mile |
| Dust Control Efficiency = | | | | |

| Process | Unmitigated PTE of PM (tons/yr) | Unmitigated PTE of PM10 (tons/yr) | Unmitigated PTE of PM2.5 (tons/yr) | Mitigated PTE of PM (tons/yr) | Mitigated PTE of PM10 (tons/yr) | Mitigated PTE of PM2.5 (tons/yr) | Controlled PTE of PM (tons/yr) | Controlled PTE of PM10 (tons/yr) | Controlled PTE of PM2.5 (tons/yr) |
|---|---------------------------------|-----------------------------------|------------------------------------|-------------------------------|---------------------------------|----------------------------------|--------------------------------|----------------------------------|-----------------------------------|
| Vehicle (entering plant) (one-way trip) | 0.17 | 0.03 | 0.01 | 0.16 | 0.03 | 0.01 | 0.16 | 0.03 | 0.01 |
| Vehicle (leaving plant) (one-way trip) | 0.17 | 0.03 | 0.01 | 0.16 | 0.03 | 0.01 | 0.16 | 0.03 | 0.01 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 0.35 | 0.07 | 0.02 | 0.32 | 0.06 | 0.02 | 0.32 | 0.06 | 0.02 |

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particle Matter (<2.5 um)
 PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Neil Selman
Union Electric Steel Corporation
3702 Montdale Park Dr, PO Box 29
Valparaiso, IN 46384-0029

DATE: July 8, 2011

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Registration
127-30217-00121

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

| | | | | |
|----------------------------|---|---|---|--|
| IDEM Staff | CDENNY 7/8/2011 Union Electric Steel Corporation 127-30217-00121 (final) | | Type of Mail: CERTIFICATE OF MAILING ONLY | AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING |
| Name and address of Sender |  | Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204 | | |

| Line | Article Number | Name, Address, Street and Post Office Address | Postage | Handing Charges | Act. Value (If Registered) | Insured Value | Due Send if COD | R.R. Fee | S.D. Fee | S.H. Fee | Rest. Del. Fee | Remarks |
|------|----------------|---|---------|-----------------|----------------------------|---------------|-----------------|----------|----------|----------|----------------|---------|
| 1 | | Neil Selman Union Electric Steel Corporation 3702 Montdale Park Dr, PO Box 29 Valparaiso IN 46384-0029 (Source CAATS) | | | | | | | | | | |
| 2 | | Ken Uzar Dir - HR Union Electric Steel Corporation 726 Bell Ave, PO Box 465 Carnegie PA 15106-0465 (RO CAATS) | | | | | | | | | | |
| 3 | | Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party) | | | | | | | | | | |
| 4 | | Porter County Board of Commissioners 155 Indiana Ave, Ste 205 Valparaiso IN 46383 (Local Official) | | | | | | | | | | |
| 5 | | Porter County Health Department 155 Indiana Ave, Suite 104 Valparaiso IN 46383-5502 (Health Department) | | | | | | | | | | |
| 6 | | Shawn Sobocinski 3229 E. Atlanta Court Portage IN 46368 (Affected Party) | | | | | | | | | | |
| 7 | | Mr. Ed Dybel 2440 Schrage Avenue Whiting IN 46394 (Affected Party) | | | | | | | | | | |
| 8 | | Ms. Carolyn Marsh Lake Michigan Calumet Advisory Council 1804 Oliver St Whiting IN 46394-1725 (Affected Party) | | | | | | | | | | |
| 9 | | Mr. Dee Morse National Park Service 12795 W Alameda Pky, P.O. Box 25287 Denver CO 80225-0287 (Affected Party) | | | | | | | | | | |
| 10 | | Valparaiso City Council and Mayors Office 166 Lincolnway Valparaiso IN 46383-5524 (Local Official) | | | | | | | | | | |
| 11 | | Mr. Joseph Virgil 128 Kinsale Avenue Valparaiso IN 46385 (Affected Party) | | | | | | | | | | |
| 12 | | Mark Coleman 9 Locust Place Ogden Dunes IN 46368 (Affected Party) | | | | | | | | | | |
| 13 | | Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party) | | | | | | | | | | |
| 14 | | Eric & Sharon Haussman 57 Shore Drive Ogden Dunes IN 46368 (Affected Party) | | | | | | | | | | |
| 15 | | Joseph Hero 11723 S Oakridge Drive St. John IN 46373 (Affected Party) | | | | | | | | | | |

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| Total number of pieces Listed by Sender | Total number of Pieces Received at Post Office | Postmaster, Per (Name of Receiving employee) | The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels. |
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| IDEM Staff | CDENNY 7/8/2011 Union Electric Steel Corporation 127-30217-00121 (final) | | | AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING |
| Name and address of Sender | ▶ | Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204 | Type of Mail: CERTIFICATE OF MAILING ONLY | |

| Line | Article Number | Name, Address, Street and Post Office Address | Postage | Handling Charges | Act. Value (If Registered) | Insured Value | Due Send if COD | R.R. Fee | S.D. Fee | S.H. Fee | Rest. Del. Fee Remarks |
|------|----------------|--|---------|------------------|----------------------------|---------------|-----------------|----------|----------|----------|---------------------------|
| 1 | | Gitte Post Tribune 1433 E. 83rd Ave Merrillville IN 46410 (Affected Party) | | | | | | | | | |
| 2 | | Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 (Affected Party) | | | | | | | | | |
| 3 | | Roger Dhonau SE Technologies, LLC 98 Vanadium Road, Bldg D, Suite200 Bridgeville PA 15017 (Consultant) | | | | | | | | | |
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| Total number of pieces Listed by Sender | Total number of Pieces Received at Post Office | Postmaster, Per (Name of Receiving employee) | The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels. |
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