



# 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](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: June 1, 2012

RE: Union Electric Steel Corporation / 127-31948-00121

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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.dot12/3/07



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Neil Selman  
Union Electric Steel Corporation  
PO Box 29, 3702 Montdale Park Dr.  
Valparaiso, Indiana, 46384

June 1, 2012

Re: 127-31948-00121  
First Registration Notice-Only Change to  
R127-30217-00121

Dear Mr. Selman:

Union Electric Steel Corporation was issued a Registration No. R127-30217-00121 on July 8<sup>th</sup>, 2011 for a stationary machining and heat treating operation for steel rolls located at 3702 Montdale Park Dr., Valparaiso, Indiana. On May 29<sup>th</sup>, 2012, the Office of Air Quality (OAQ) received an application from the source requesting that the registration be updated to indicate a change in responsible official and notifying IDEM that the Car Bottom Furnace 004 was dismantled on May 1<sup>st</sup>, 2012 and removed from the plant (see attached revised Appendix A with the removal of the furnace). This change to the registration is considered a notice-only changes pursuant to 326 IAC 2-5.5-6(d)(2). Minor administrative changes such as a change in name, address, or telephone number of any person identified in a permit or a change in descriptive information concerning the source or emissions unit or units.

IDEM no longer identifies the Responsible Official in the permits, but will retain the updated Responsible Official name in OAQ's permit tracking system.

Pursuant to 326 IAC 2-5.5-6, the registration is hereby revised as follows, with deleted language as ~~strikeouts~~ and new language **bolded**:

## A.2 Emission Units and Pollution Control Equipment Summary

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

\*\*\*

- (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.~~

\*\*\*

All subsequent emission units have been reordered.

### PTE of the Entire Source After Issuance of the Notice-Only Change

The table below summarizes the potential to emit of the entire source, with updated emissions shown as **bold** values and previous emissions shown as ~~strikethrough~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub> **	SO <sub>2</sub>	NOx	VOC	CO	GHGs as CO <sub>2</sub> e***	Total HAPs	Worst Single HAP
Furnaces and other heaters (Natural Gas Combustion)**	0.37 <b>0.3</b>	1.48 <b>1.2</b>	1.11 <b>0.9</b>	0.12 <b>0.09</b>	19.49 <b>15.64</b>	4.07 <b>0.86</b>	16.37 <b>13.13</b>	23,531 <b>18,878.11</b>	0.38 <b>0.30</b>	0.35 <b>0.28</b> (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 <b>0.64</b>	1.55 <b>1.26</b>	1.13 <b>0.91</b>	0.12 <b>0.09</b>	19.49 <b>15.64</b>	6.23 <b>6.02</b>	16.37 <b>13.13</b>	23,531 <b>18,878.11</b>	0.4 <b>0.32</b>	-
Exemptions Levels**	5	5	5	10	10	10	25	100,000	25	10
Registration Levels**	25	25	25	25	25	25	100	100,000	25	10

\*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 PM2.5.  
 \*\*\* The 100,000 CO<sub>2</sub>e 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.

The table below summarizes the potential to emit of the entire source after issuance of this notice-only change. (Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted)

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub> **	SO <sub>2</sub>	NOx	VOC	CO	GHGs as CO <sub>2</sub> e***	Total HAPs	Worst Single HAP
Furnaces and other heaters (Natural Gas Combustion)**	0.3	1.2	0.9	0.09	15.64	0.86	13.13	18,878.11	0.30	0.28 (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	0.64	1.26	0.91	0.09	15.64	6.02	13.13	18,878.11	0.32	-
Exemptions Levels**	5	5	5	10	10	10	25	100,000	25	10
Registration Levels**	25	25	25	25	25	25	100	100,000	25	10

\*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 PM2.5.  
 \*\*\* The 100,000 CO<sub>2</sub>e 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.

IDEM, OAQ has decided to make additional revisions to the registration as described below. The registration has been revised as follows with deleted language as ~~strikeouts~~ and new language **bolded**:

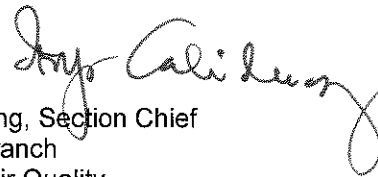
1. Section A.1 has been revised to indicate that Porter County is now in attainment for PM<sub>2.5</sub> standard. Section A.1 is updated as follows:

Source Location Status:                    ~~Nonattainment for PM<sub>2.5</sub> standard~~  
   **Attainment for all other criteria pollutants**

The source shall continue to operate according to 326 IAC 2-5.5. Please find enclosed the revised registration. A copy of the registration is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Emily Adamson, at (800) 451-6027, press 0 and ask for Emily Adamson or extension 3-0871, or dial (317) 233-0871.

Sincerely,



Iryn Calilung, Section Chief  
Permits Branch  
Office of Air Quality

IC/EA

Attachment: Revised Registration and Calculations

cc:     File - Porter County  
          Porter County Health Department  
          Compliance and Enforcement Branch  
          Billing, Licensing and Training Section



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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

First Registration Notice-Only Change No. 127-31948-00121

Issued by:

  
Iryn Calilung, Section Chief  
Permits Branch  
Office of Air Quality

Issuance Date:

June 1, 2012

## 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

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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:	Attainment for all criteria pollutants
Source Status:	Registration

### A.2 Emission Units and Pollution Control Equipment Summary

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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) 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.
- (e) 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.
- (f) One (1) natural gas-oxygen fired Flame Hardening heater, identified as 007, with a maximum capacity of 0.45 MMBtu/hr.
- (g) Hot water heater for personal use identified as 008.
- (h) Housekeeping and janitorial activities including rest rooms and associated cleanup operations and supplies and mobile floor sweepers and scrubbers identified as 009.
- (i) Office related activities including office supplies and equipment, photocopying equipment and associated supplies and paper shredding identified as 010.
- (j) 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.

- (k) Eighty-four (84) natural gas fired space heaters for personal comfort, identified as 012, with a maximum capacity of 0.05 MMBtu/hr each.
- (l) Vessels storing hydraulic oils, lubricating oils, machining oils and machining fluids identified as 013.
- (m) One (1) non-contact cooling tower, identified as 014, using forced and induced draft cooling tower systems not regulated under a NESHAP.
- (n) Quenching Operations used with the heat treating process identified as 015.
- (o) One (1) conveyor, identified as 016, to move coils for processing
- (p) Blowdown for the cooling tower identified as 017.
- (q) Wet Roll machining and polishing identified as 018.

## SECTION B

## GENERAL CONDITIONS

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

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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]

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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]

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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]

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- (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)]

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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)]**

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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)]**

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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]**

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- (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

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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).

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

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.

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Phone Number:</b>
<b>Date:</b>

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.

<b>Noncompliance:</b>

**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: \_\_\_\_\_

**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: 127-31948-00121**  
**Reviewer: Emily Adamson**

**UNCONTROLLED POTENTIAL TO EMIT IN TONS PER YEAR - Criteria Pollutants**

<b>Emission Units</b>	<b>PM</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>VOC</b>	<b>CO</b>	<b>GHG</b>	<b>Single HAP</b>	<b>Combined HAP</b>
Natural Gas Combustion	0.30	1.19	0.89	0.09	15.64	0.86	13.13	18,878.11	0.28	0.30
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	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>0.64</b>	<b>1.26</b>	<b>0.91</b>	<b>0.09</b>	<b>15.64</b>	<b>6.02</b>	<b>13.13</b>	<b>18,878.11</b>		<b>0.32</b>

\* 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: 127-31948-00121**

**Reviewer: Emily Adamson**

**Date: June 1, 2012**

	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	
		HHV mmBtu mmscf	
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
Vertical Anneal Furnaces (005A, B, C)	6.00	1000	52.6
Space Heaters	4.20	1000	36.8
<b>TOTAL</b>	<b>35.70</b>		<b>312.73</b>

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	0.3	1.2	0.9	0.1	15.6	0.9	13.1

\*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.



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: 127-31948-00121

Reviewer: Emily Adamson

Date: June 1, 2012

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	0.0003284	0.0001876	0.0117275	0.2814588	0.0005316	0.2942339

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	0.000078	0.000172	0.000219	0.000059	0.000328	0.000857

Methodology is the same as page 1.

**Total HAPs: 0.2950908**

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:** 127-31948-00121  
**Reviewer:** Emily Adamson  
**Date:** June 1, 2012

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	18763.92	0.3596418	0.3440052
Summed Potential Emissions in tons/yr	18,764.62		
CO2e Total in tons/yr	18,878.11		

**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: 127-31948-00121  
Reviewer: Emily Adamson  
Date: June 1, 2012**

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%
									<b>1.18</b>	<b>28.26</b>	<b>5.16</b>				

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:** 127-31948-00121  
**Reviewer:** Emily Adamson  
**Date:** June 1, 2012

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
<b>Total PTE of HAP (tons/year)</b>			<b>0.01</b>	<b>0.01</b>	<b>0.00</b>

**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:** 127-31948-00121  
**Reviewer:** Emily Adamson  
**Date:** June 1, 2012

**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
<b>Total</b>			<b>12.0</b>		<b>270.0</b>			<b>0.9</b>	<b>331.8</b>

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 <sup>2</sup> = 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,  $E_{ext} = E * [1 - (p/4N)]$  (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
	<b>0.35</b>	<b>0.07</b>	<b>0.02</b>	<b>0.32</b>	<b>0.06</b>	<b>0.02</b>	<b>0.32</b>	<b>0.06</b>	<b>0.02</b>

**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**

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://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  
P.O. Box 29  
Valparaiso, IN 46384

**DATE:** June 1, 2012

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

**SUBJECT:** Final Decision  
Registration Notice-Only Change  
127-31948-00121

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:  
Bernard Kelly Jr. (Director – Engineering)  
Melissa Polk (SE Technologies)  
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](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07


# Mail Code 61-53

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2		Bernard V Kelly Jr Dir - Engineering Union Electric Steel Corporation 726 Bell Ave, PO Box 465 Carnegie PA 15106-0465 (RO CAATS)										
3		Porter County Board of Commissioners 155 Indiana Ave, Ste 205 Valparaiso IN 46383 (Local Official)										
4		Porter County Health Department 155 Indiana Ave, Suite 104 Valparaiso IN 46383-5502 (Health Department)										
5		Shawn Sobocinski 3229 E. Atlanta Court Portage IN 46368 (Affected Party)										
6		Mr. Ed Dybel 2440 Schrage Avenue Whiting IN 46394 (Affected Party)										
7		Ms. Carolyn Marsh Lake Michigan Calumet Advisory Council 1804 Oliver St Whiting IN 46394-1725 (Affected Party)										
8		Mr. Dee Morse National Park Service 12795 W Alameda Pky, P.O. Box 25287 Denver CO 80225-0287 (Affected Party)										
9		Valparaiso City Council and Mayors Office 166 Lincolnway Valparaiso IN 46383-5524 (Local Official)										
10		Mr. Joseph Virgil 128 Kinsale Avenue Valparaiso IN 46385 (Affected Party)										
11		Mark Coleman 107 Diana Road Portage IN 46368 (Affected Party)										
12		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party)										
13		Eric & Sharon Haussman 57 Shore Drive Ogden Dunes IN 46368 (Affected Party)										
14		Joseph Hero 11723 S Oakridge Drive St. John IN 46373 (Affected Party)										
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1		Melissa Polk SE Technologies 98 Vanadium Rd, Bldg D, Ste 200 Bridgeville pa 15017 (Consultant)										
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