

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Chicago Heights Steel
Attn: Rich Gollner
Main and Birmingham Avenue
Chicago Heights, Illinois 60411

Application No.: 07080030

I.D. No.: 031045ABS

Applicant's Designation:

Date Received: August 15, 2007

Subject: Equipment Upgrades

Date Issued:

Location: Main and Birmingham Avenue, Chicago Heights

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission unit(s) and/or air pollution control equipment consisting of modification to the existing reheat furnace, paint line #2, metal fabrication, and rust inhibitor coating operations as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1.0 General Provisions

1.1 Description

Used steel rails and billets are heated in a natural gas-fired reheat furnace to sufficiently high temperatures for rolling into steel fence posts and other merchant products using rolling mills. This permit is for the installation of a recuperator heat recovery device and installing new ultra low NO_x burners on the reheat furnace. The replacement furnace burners will increase the firing rate of the reheat furnace from 90 mmBtu/hr to 95 mmBtu/hour with a maximum operating rate of 50 tons/hour. This permit also addresses modifications to paint line #2 including the replacement of the existing paint dip tank with a spray box and installation of a new gas-fired curing oven. The permit also addresses use of additional punch lubricant in fabrication operations and the coating of product with rust inhibitors.

1.2 Applicability of New Source Review

This permit is issued based on this project not constituting a major modification for PM subject to 40 CFR 52.21, Prevention of Significant Deterioration (PSD) or 35 IAC Part 203, Major Stationary Sources Construction and Modification(MSSCAM). The Permittee has addressed the applicability of PSD and MSSCAM demonstrating that this project will not result in a significant increase in emissions of PSD or MSSCAM pollutants, subject to the limitations and requirements in this permit. (See Attachments 1 and 2)

1.3 Compliance with Annual Limits

Compliance with annual limits shall be determined on a monthly basis from the sum of the data from the current month plus the preceding 11 months (running 12 month total).

1.4 Reporting Requirements

Unless otherwise specified in the CAAPP permit for the Source, if there is an exceedance of the requirements of this permit the Permittee shall submit a report to the Illinois EPA within 30 days after the exceedance. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall also include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

1.5 The Permittee is allowed to operate the affected units addressed by this construction permit under this permit until action is taken to address the units in a revision to or renewal of their CAAPP permit.

2.1 Natural Gas Fired Combustion Units

2.1.1 List of Emission Units

Emission Unit	Description
Reheat Furnace	Recuperative Furnace, rated 95 mmBtu/Hour
Curing Oven	Curing Oven for Paint Spray Booth, rated with 5 million Btu/hour

2.1.3 Applicability Provisions and Regulations

- a. The "affected units" for the purpose of these unit-specific conditions are natural gas fuel combustion units described in Conditions 1.1 and 2.1.1.
- b. The affected units are subject to 35 IAC 212.321(b)(1), which provides that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any existing process emission unit, either alone or in combination with the emission of particulate matter from all other similar new process emission units exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].
- c. The affected units shall not discharge more than 2000 ppm of SO₂ pursuant to 35 IAC 214.301.

2.1.4 Non-Applicability Provisions

- a. The affected units are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the units are not by definition a fuel combustion emission unit.

2.1.5 Operational and Production Limits

- a. Operation of the affected reheat furnace shall comply with the following limits:
 - i. The rated heat input capacity shall not exceed 95 mmBtu/hour;
 - ii. Natural gas shall be the only fuel fired in the furnace.
 - iii. Annual natural gas usage shall not exceed 832 million scf.
- b. Operation of affected curing oven shall not exceed the following limits:
 - i. The rated heat input capacity shall not exceed 5 mmBtu/hour;

2.1.6 Testing Requirements

- a. Upon request by the Illinois EPA, the Permittee shall have NO_x emissions from the affected reheat furnace measured at its expense by an approved testing service, during conditions representative of normal operation.
- b. The following testing methods and procedures shall be used for these measurements.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Nitrogen Oxides (NO _x)	USEPA Method 7E or 19

- c. The Permittee shall submit a written test plan to the Illinois EPA for review and approval for the initial testing and if a significant change in the procedures for this testing is planned from the procedures followed in the previous test. This plan shall be submitted at least 60 days prior to the actual date of testing and include the following information as a minimum:
 - i. A description of the planned test procedures.

- ii. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - iii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions.
 - iv. The specific points at which samples will be taken for a pollutant.
- d. The Permittee shall notify the Illinois EPA prior to conducting these measurements to enable the Illinois EPA to observe testing. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may accept shorter advance notice if it does not interfere with the Illinois EPA's ability to observe testing.
- e. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 30 days after the test results are compiled and finalized. These reports shall include as a minimum:
- i. General information, i.e., date of test, names of testing personnel, and names of Illinois EPA observers.
 - ii. A summary of results, e.g. NO_x emissions, lbs/mmBtu.
 - iii. Detailed description of operating conditions of the reheat furnace.
 - iv. Data and calculations.
 - v. Conclusions.

2.1.7 Emission Limits

- a. The NO_x emissions of the affected reheat furnace shall not exceed 0.124 lb/mmBtu or 11.78 lbs/hour, 24 hour average.
- b. The monthly and annual emissions of the affected units shall not exceed the applicable emission rates in Attachment 1.

2.1.8 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units:

- a. Reheat furnace:
 - i. A file with burner documentation, which at a minimum includes manufacturer's specifications for the capacity of the burner and emission rates.
 - ii. Natural gas usage by the furnace in standard cubic feet or mmBtu (monthly and annual);
 - iii. Engineering calculation for maximum operating rate and associated emissions.
 - iv. Emissions of NO_x, CO, PM, and VOM, with supporting calculations (tons/month and tons/year).
- b. Paint line #2 curing oven:
 - i. A file with burner documentation, which at a minimum includes manufacturer's specifications for the capacity of the burner and emission rates.
 - ii. Natural gas usage by the curing oven in standard cubic feet or mmBtu (monthly and annual);
 - iii. Emissions of NO_x (tons/month and tons/year), with supporting calculations.

2.2 Paint Line 2-Usage of Coatings

2.2.1 Description

Paint line #2 will be reconfigured to handle larger metal parts. This will include the removal of the existing paint dip tank and replacing it with a paint spray box. It also includes replacement of the curing oven.

In addition to reconfiguring paint line #2, rust inhibitors will begin to be employed at various points at the plant to protect products from rust during storage and shipment.

2.2.2 Applicable Provisions and Regulations

- a. The "affected coating units" for the purpose of these unit-specific conditions are the paint line #2 and rust inhibitor coating operations as described in Conditions 1.1 and 2.2.1

- b. The affected coating units are subject to 35 IAC 218.204(j)(2), which provides that for the application of the extreme performance coating to miscellaneous metal parts that no owner or operator of the affected coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations. The following emission limitation is expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied by the affected coating line:

	<u>(Kg/Liter)</u>	<u>(Lbs/Gallon)</u>
Air Dried	0.42	3.5
Baked	0.40	3.3

- i. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water"

2.2.3 Nonapplicability Provisions

- a. The affected coating units are not subject to 35 IAC 218.301 pursuant to 35 IAC 218.209 which provides that no owner or operator of a coating line subject to the limitations of Section 218.204 is required to meet the limitations of Sections 218.301 or 218.302.

2.2.4 Operational and Production Limits

- a. Operation of paint line #2 shall not exceed the following limits:

VOM content of paint and clean up solvents combined used on paint line #2 shall not exceed 17,820 pounds per year. This VOM usage limitation is equivalent to a VOM mass emission rate of 8.91 tons/year.
- b. Use of VOM in rust inhibitors shall not exceed 36,820 pounds per year.

2.2.5 Emission Limits

- a. The monthly and annual emissions of the affected units shall not exceed the applicable emission rates in Attachment 1.

2.2.6 Testing Requirements

- a. The VOM content of each coating shall be determined by the applicable test methods and procedures specified in 35 IAC 218.105. [35 IAC 218.211(a)]

2.2.7 Recordkeeping Requirements

- a. The Permittee shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years: [35 IAC 218.211(c)(2)]
 - i. The name and identification number of each coating as applied on each coating line; and
 - ii. The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
- b. The Permittee shall also maintain and record the following items:
 - i. The usage of each coating and cleaning solvent (gallons/month and gallons/year).
 - ii. VOM emissions with supporting calculations (tons/month and tons/year).

2.3 Metal Fabrication Process Lubricants

2.3.1 Description and Process Units

Punch lubricants are used to facilitate fabricated operations and protect equipment from ware and tare. The organic constituents contained in these fluids are primarily petroleum distillates. Since some or all of these organic constituents could be considered volatile, they are conservatively assumed to be completely emitted as VOM.

2.3.2 Applicable Provisions and Regulations

- a. The "affected units" for the purpose of these unit-specific conditions are the operation in which punch lubricants and or metal fabrication process lubricants are applied as described in Conditions 1.1 and 2.3.1.
- b. The affected units are subject to 35 IAC 218.301 which provides that no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from a unit using organic material except as provided in 35 IAC 218.302, 218.303, or 218.304 and the following exemption: If no odor nuisance exists the limitation of 35 IAC 215 Subpart G shall only apply to photochemically reactive material.

2.3.3 Operational and Production Limits

Use of VOM in solvent borne equipment lubricants shall not exceed 21,336 lbs/year.

2.3.4 Emission Limits

- a. The monthly and annual emissions of the affected units shall not exceed the applicable emission rates in Attachment1.

2.3.5 Recordkeeping Requirements

- a. The Permittee shall collect and record all of the following information each day for each lubricant and maintain the information at the source for a period of three years
 - i. The total usage, type and amount, of each lubricant (gallons/month and gallons/year).
 - ii. The weight of VOM per volume of each lubricant (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day.
 - iii. VOM emissions with supporting calculations (tons/month and tons/year).

If you have any questions on this, please call Kevin Smith at 217/782-2113

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:KLS:psj

cc: Region 1

Attachment 1

Summary of Project Emissions

Emission Unit		Emission Limits								
		NO _x		CO		PM/PM ₁₀			VOM	
		T/Mo	T/Yr	T/Mo	T/Yr	Lb/hr	T/Mo	T/Yr	T/Mo	T/Yr
Reheat Furnace		5.2	51.60	3.4	34.3	0.71	3.1	3.10	0.23	2.24
Paint Line #2		---	---	---	---	---	---	---	---	8.91
Curing Oven*		0.2	2.15	0.2	1.80	0.01	0.16	---	0.01	0.12
Lubes	Solvent	---	---	---	---	---	---	---	2.5	10.67
	Water	---	---	---	---	---	---	---	0.1	0.42
Rust Inhibitors		---	---	---	---	---	---	---	2.1	18.41
Total		5.2	53.75	3.6	36.1	0.72	3.3	3.26	5.0	40.77

* Emissions from combustion of natural gas.

Attachment 2

Summary of Emission Changes

Table 1: Past Actual Emissions (2005-2006)

Emission Units	Criteria Pollutants (Tons/Year)				
	NO _x	CO	PM	SO ₂	VOM
Reheat Furnace	18.62	11.80	1.07	0.08	0.77
Paint Lines	---	---	---	---	1.93
Total	18.62	11.80	1.07	0.08	2.70

Table 2: Future Potential emissions

Emission Units		Criteria Pollutants (Tons/Year)				
		NO _x	CO	PM	SO ₂	VOM
Reheat Furnace		51.60	34.3	3.10	0.240	2.24
Paint Line #2		---	---	---	---	8.91
Curing Oven		2.15	1.8	0.16	0.013	0.12
Metal Fabrication Lubricants	Oil Base	---	---	---	---	10.67
	Water Borne	---	---	---	---	0.42
Rust Inhibitor Coating		---	---	---	---	18.41
Total		53.75	36.1	3.26	0.253	40.77

Table 3: Net Change in Emissions

Emissions	Criteria Pollutants (Tons/Year)				
	NO _x	CO	PM	SO ₂	VOM
Table 1	18.62	11.8	1.07	0.08	2.70
Table 2	53.75	36.1	3.26	0.253	40.77
Net Increase	35.13	24.3	2.20	0.173	38.07

KLS:psj