

217/782-2113

CONSTRUCTION PERMIT -- REVISED

PERMITTEE

Laclede Steel Company
Attn: David Fulbright, Mgr. Environmental Affairs
5 Cut Street
Alton, Illinois 62002

Application No.: 00010015

I.D. No.: 119010AAE

Applicant's Designation: #7 EAF Mod.

Date Received: July 17, 2000

Subject: Electric Arc Furnace No. 7

Date Issued: August 24, 2000

Location: 5 Cut Street, Alton

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a modification to electric arc furnaces No.7 as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1. Description

Laclede Steel Company is a steel production facility. This permit authorizes increase throughput for the modified electric arc furnace No. 7 and limits the operation of electric arc furnace No. 8 to a stand-by unit. Modifications to Electric arc furnace No. 7 include: replacement of capacitor bank, and replacement of oxyfuel burners with direct oxygen injection and a post combustion system. The modifications to furnace 7 increase its efficiency and potential emissions, a netting analysis included in attachment one summarizes the potential net increase in emissions related to this modification.

2. List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Electric Arc Furnace No. 7	Main Production Furnace	Baghouse
Electric Arc Furnace No. 8	Standby Furnace	Baghouse

3. Applicability Provisions

- a. The Affected furnaces@ for the purpose of this permit are modified electric arc furnace No.7 and standby unit No. 8, as described in condition 2 and the permit application unless otherwise stated in the following conditions.

4. Emission Standards

- a. The total particulate emissions from the affected furnace including meltdown and refining, charging, tapping, slagging, electrode port leakage and ladle lancing shall not exceed the allowable emission rate specified by 35 IAC 212.321. [35 IAC 212.448]. Accordingly, the emissions of particulate matter into the atmosphere from each affected furnace in any one hour period shall not exceed the allowable emission rate specified by the following equation:

$$E = A(P)^B$$

Where:

P = Process weight rate; and,
E = Allowable emission rate; and,

- i. For process weight rates up to 408 MG/hr (450 T/hr):

A 2.54
B 0.534

- b. For process weight rates in excess of (450 T/hr):

A 24.8
B 0.16

- i. Notwithstanding the above, pursuant to 35 IAC 201.149, the Permittee may continue operation of the affected furnaces during a malfunction or breakdown with particulate matter emissions in excess of the above limit as necessary to prevent injury to person or severe damage to equipment, provided that the Permittee takes reasonable measures to prevent such events and minimize excess emissions. For example: the furnaces and their control system are properly maintained and operation of the furnace is only continued to allow the furnace to be emptied of molten steel. Note: additional provisions addressing malfunction and breakdown may be established in subsequent permits for the affected furnaces.

- c. The emissions of sulfur dioxide into the atmosphere from the affected furnaces shall not exceed 2000 PPM, [35 IAC 214.301].

5. Non-Applicability of Regulations of Concern

- a. This permit is issued based on the modification of the affected furnaces not constituting a major modification subject to 40 CFR

52.21, Prevention of Significant Deterioration, PSD. The Permittee has addressed the applicability of PSD, demonstrating that the increase in throughput will not result in a significant increase in emissions, subject to the limitations in conditions 6 and 7.

- b. This permit is issued based on the affected furnaces not being subject to 35 IAC 215.301, because their organic material emissions do not qualify as photochemically reactive material.
- c. This permit is issued based on the affected furnaces not being subject to 40 CFR 60, Subparts A and AAa, because the capital expenditure for this project does not qualify it as a modification as defined therein.

6. Operational and Production Limitations

- a. Steel production of the affected furnaces shall not exceed 88 tons/hour and 769,600 tons/year. Compliance with this limitation shall be determined from a running total of 12 months of data.
- b. If furnace 7 will be out of service for an extended outage, the Permittee may resume operation of furnace 8 provided that :
 - i. The Permittee notifies the Illinois EPA prior to furnace 8 startup.
 - ii. The combination of furnace 7 and 8 shall comply with the production limit in part (a) of this condition and the emission limits in condition 7.
- c. For this purpose, an extended outage shall be an outage that is anticipated to be at least two weeks in length and shall not include routine outages of furnace 7 for maintenance and repair.

7. Emission Limitations

- a. Emissions from the affected furnaces shall not exceed the following limits:

Affected Furnaces No. 7 and 8	Lb/Hour	Tons/Year
PM	19.88	82.18
PM ₁₀	15.11	66.18
CO	170.80	1,044.11
NO _x	48.85	456.38
VOM	13.15	63.10
SO ₂	17.12	77.54

Lead	0.25	0.95
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These limits are based on the usage limits in Condition 6, and information supplied in the permit application.

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

8. Testing Requirements

- a. Within 60 days after achieving the maximum production rate at which the affected furnaces will be operated, following improvements, but not later than 180 days after initial startup of such electric arc furnaces and at such other times as may be required by the Illinois EPA under section 114 of the Act, the Permittee shall have performance test(s) conducted and furnish the Illinois EPA a written report of the results of such performance test(s).

- b. i. The following methods and procedures shall be used for testing of particulate matter emissions and opacity:

- A. Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Methods 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.0 dscm(160 dscf) and, when a single EAF or AOD vessel is sampled, the sampling time shall include an integral number of heats.

- ii. The following methods and procedures shall be used for testing emissions of pollutants other than particulate matter. Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location of Sample Points	USEPA Method 1
Sulfur Dioxide	USEPA Method 6
Nitrogen Oxides	USEPA Method 7
Carbon Monoxide	USEPA Method 10

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review and approval. This plan shall describe the specific procedures for testing including as a minimum:

- i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum emissions, the levels of operating parameters at or within which compliance is intended to be shown, if parameters for the process and any control equipment will be determined.
 - iii. The specific determination of emissions and operations which are intended to be made, including sampling and monitoring locations.
 - iv. The test methods which will be used, with the specific analysis method.
 - v. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - vi. A statement that the testing will be performed by a qualified independent testing service.
- d. Prior to carrying out these test, the Illinois EPA shall be notified a minimum of thirty (30) days prior to the scheduled date of these tests with the exact date, time and place of these tests, to enable the Illinois EPA to witness these tests.
- e. If the scheduled date for the test is changed the Permittee shall inform the Illinois EPA within five (5) working days of the scheduled test date and must specify the date of the rescheduled test.
- f. A copy of the Final Reports for these tests and compliance status shall be submitted to the Illinois EPA within fourteen days after the test results are compiled and finalized, prior to or accompanying the operating permit application. Satisfactory completion of these tests and compliance with the limitations of this permit shall be prerequisite to the issuance of an operating permit.
9. Monitoring Requirements
- N/A
10. Recordkeeping Requirements

- a. The Permittee shall maintain records of the following items for each affected furnace.
 - i. Furnace Status
 - ii. Operational log for furnace 8 including as a minimum: throughput, duration of operation, and reasons for shutdown of furnace 7.
 - b. The Permittee shall maintain records of the following items related to emissions.
 - i. Material Throughput (tons/day and tons/month)
 - ii. Emissions of: PM, PM₁₀, SO_x, NO_x, VOM, CO, and Lead in lb/hour and tons/year
11. Reporting Requirements
- a.
 - i. The Permittee shall submit a written report of excess emissions to the Illinois EPA semi-annually.
 - ii. The Permittee shall promptly notify the Illinois EPA, Compliance Section of any other exceedance with the emission limitation in the permit of the affected furnaces with the permit requirements. These reports shall be submitted within 30 days of the exceedance and shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.
 - b. The Permittee shall notify the Illinois EPA prior to bringing affected furnace 8 into service. This notification shall be submitted at least 7 days in advance, unless due to unexpected outage of affected furnace 7, in which case notice shall be provided as soon as practicable prior to operation of affected furnace 8. This notice shall include as explanation of the reasons for operation, and the expected duration of operation.
12. Two copies of required reports and notifications concerning equipment operation or repairs, performance testing or continuous monitoring systems shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
Springfield, Illinois 62794-9276

and one copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

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Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

Please note, this permit has been revised to remove non-applicable conditions.

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

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:psj

cc: Region 3

Attachment 1

PSD Applicability

Table I B Future Potential Emissions Tons/Year

<u>VOM</u>	<u>NO_x</u>	<u>PM</u>	<u>PM₁₀</u>	<u>CO</u>	<u>SO₂</u>	<u>PB</u>
63.10	456.38	82.18	66.18	1044.11	77.54	0.95

Table II B Past Actual Emissions Tons/Year

<u>VOM</u>	<u>NO_x</u>	<u>PM</u>	<u>PM₁₀</u>	<u>CO</u>	<u>SO₂</u>	<u>PB</u>
57.06	419.11	74.84	58.45	944.23	70.01	0.86

Table III B Net Emissions Change (Tons/Year)

	<u>VOM</u>	<u>NO_x</u>	<u>PM</u>	<u>PM₁₀</u>	<u>CO</u>	<u>SO₂</u>	<u>PB</u>
Table I	63.10	456.38	82.18	66.18	1044.11	77.54	
0.95							
<u>Table II</u>	<u>57.06</u>	<u>419.11</u>	<u>74.84</u>	<u>58.45</u>	<u>944.23</u>	<u>70.01</u>	
<u>0.86</u>							
Totals	6.04	37.27	7.34	7.73	99.88	7.53	
0.09							

KLS:psj