

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- REVISED

PERMITTEE

Alsey Refractories Company
Attn: Jim Jensen
Post Office Box 20, Highway 106
Alsey, Illinois 62610

Application No.: 72111267
Applicant's Designation:
Subject: Refractory Plant
Date Issued: August 21, 2007
Location: Highway 106, Alsey

I.D. No.: 171005AAA
Date Received: May 18, 2006
Expiration Date: April 29, 2008

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of:

Mortar and Castable Manufacturing Line Comprised of:

A Pneumatic Conveyor;
Five Storage Bins, Weight Hopper, Mixer and Product Bagger, All
Controlled by Baghouse; and
Eight Conveyors

Refractory Product Manufacturing Line Comprised of:

A Clay Grinder;
Returns Crusher;
Rotary Dryer, Six Storage Bins, Dry Pan Crusher and Two Screens, All
Controlled by Baghouse;
Two Brick Curing Dryers;
Tunnel Kiln; and
Twenty-Two Conveyors

pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), 100 tons/year for carbon monoxide (CO), 10 tons/year for any single hazardous air pollutant (HAP), and 25 tons/year for combination HAPs). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.

- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
 - c. This permit supersedes all operating permits issued for this location.
2. Operations of the plant and PM emission shall not exceed the following limits:

a. Mortar and Castable Line

Mortar Production: 500 tons/month, 5,000 tons/year

Pneumatic Conveyor Throughput: 300 tons/month, 2,500 tons/year

Product Bagger Throughput: 300 tons/month, 3,000 tons/year

b. Refractories Line

Raw Materials Throughput: 4,000 tons/month, 40,000 tons/year

Returns Crusher Throughput: 800 tons/month, 8,000 tons/year

Rotary Dryer Throughput: 30 tons/month, 300 tons/year

<u>Emission Units</u>	<u>Emission Factor</u> (Lbs/Ton)		<u>E M I S S I O N S</u>			
	<u>PM</u>	<u>PM₁₀</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Pneumatic Conveyer (SCC 30501107)	0.72	0.46	0.1	0.9	0.07	0.6
Clay Grinder (SCC 30500302)	4.30	0.27	8.6	86.0	0.5	5.4
Returns Crusher (SCC 30500302)	4.30	0.27	1.7	17.2	0.1	1.1
Dry Pan Grinder/ Screens* (SCC 30500302)	4.30	0.27	0.1	0.9	0.03	0.3
Curing Dryers (SCC 30500504)	0.20	0.10	0.4	4.0	0.2	2.0
Tunnel Kiln (SCC 30500311)	0.96	0.87	1.9	19.2	1.7	17.4
				Totals	128.2	26.8

* Controlled with baghouse 99 percent efficiency for PM and 95 percent for PM₁₀.

These limits are based on the maximum production capacity and standard emission factors for raw materials moisture content above 8 percent. 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.

3. This permit is issued based on negligible emissions of particulate matter from the storage bins, weight hopper, mixer, product bagger and rotary dryer. For this purpose emissions from each emission unit or group of emission units, shall not exceed nominal emission rates of 0.1 lbs/hour and 0.44 tons/year.

4a. Emissions and operation of the tunnel kiln shall not exceed the following limits:

Throughput		Pollutant	Emission Factor (Lbs/Ton)	Emissions	
(Tons/Mo)	(Tons/Yr)			(Tons/Mo)	(Tons/Yr)
4,000	40,000	NO _x	0.35	0.7	7.0
		VOM	0.024	0.05	0.5
		CO	1.20	2.4	24.0
		SO ₂	0.67	1.4	13.4
		HF	0.37	0.8	7.4
		HCL	0.17	0.4	3.4
		Fluorides	0.59	1.2	11.8

b. Emissions and operation of the brick dryers shall not exceed the following limits:

Throughput		Pollutant	Emission Factor (Lbs/Ton)	Emissions	
(Tons/Mo)	(Tons/Yr)			(Tons/Mo)	(Tons/Yr)
4,000	40,000	NO _x	0.098	0.2	2.0
		VOM	0.03	0.06	0.6
		CO	0.31	0.7	6.2

c. Emissions and operation of the rotary dryer shall not exceed the following limits:

Material	Usage		Pollutant	Emission Factor (Lb/1000 Gal)	Emissions	
	(10 ³ Gal/Mo)	(10 ³ Gal/Yr)			(Ton/Mo)	(Ton/Yr)
No. 2 Fuel	9	90	NO _x	20.0	0.10	0.9
			CO	5.0	0.03	0.23
Oil			SO ₂	39.7	0.18	1.8

d. This permit is issued based on the use of diesel fuel or fuel oil No. 2 with sulfur content 0.28 percent or less in the rotary dryer. Use of any other fuel will require a revised permit.

e. These limits are based on maximum material usage and standard emission factors (SCC 30500311, -51, 10200502). Compliance with annual limits shall be determined from a running total of 12 months of data.

5. No person shall cause or allow any visible emissions of fugitive particulate matter from any process, including any material handling or

storage activity beyond the property line of the emission source, pursuant to 35 Ill. Adm. Code 212.301.

- 6a. The Permittee shall maintain operating and maintenance logs for the plant's control system, including inspection for leaks in duct work and any visible emissions of particulate matter.
- b. The Permittee shall maintain monthly records of the following items:
 - i. Brick production rate (tons/month and tons/year);
 - ii. Rotary dryer throughput (tons/month and tons/year);
 - iii. Mortar and castable line throughput (tons/month and tons/year);
 - vi. Fuel oil usage for the rotary dryer (gallons/month and gallons/year); and
 - v. Detailed calculations of PM, CO, HF, and HCL emissions (tons/month and tons/year).
- 7a. Within 180 days of the receipt of these permit emissions of sulfur dioxide (SO₂), hydrogen chloride (HCl) and hydrogen fluoride (HF) from tunnel kiln shall be measured by an approved testing service, during conditions which are representative of the maximum performance.
- b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA. Refer to 40 CFR 60, Appendix A, and 40 CFR 61, Appendix B, for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Sulfur Dioxide (SO ₂)	USEPA Method 6
Hydrogen Chloride (HCl)	USEPA Method 26 or 26A
Hydrogen Fluoride (HF)	USEPA Method 26 or 26A

- c. At least 30 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:
 - i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum operating rate, the levels of operating parameters at or within which compliance is intended to be shown, if applicable,

and the means by which the operating parameters for the process and any control equipment will be determined.

- d. The Illinois EPA shall be notified prior to this test to enable the Illinois EPA to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the tests. The Illinois EPA may, at its discretion, accept notification with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the testing.
8. The Final Report(s) for all tests shall be submitted within 30 days after the date of the test. The Final Report shall include as a minimum:
 - a. General information describing the test, including the name and identification of the emission source which was tested, date of test, names of personnel performing the tests, and Illinois EPA observers, if any;
 - b. A summary of results;
 - c. Description of test procedures, including description of sampling points, test equipment, and test schedule;
 - d. Detailed description of test conditions, including:
 - i. Process information, i.e., process rate, raw materials type, including sulfur, chlorine and fluoride content, fuel type, etc; and
 - ii. Control equipment information, i.e., equipment condition and operating parameters during testing.
 - e. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 9. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
 10. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance

Section in Springfield, Illinois within 30 days after the exceedance/deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.

11. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

and one (1) copy of any documents relating to emissions performance testing shall be sent to the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Source Monitoring Unit
9511 West Harrison
Des Plaines, Illinois 60016

It should be noted that this permit has been revised to include operations of two storage silos and replacement of one clay grinder.

If you have any questions on this, please call Valeriy Brodsky at 217/782-2113.

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

Date Signed: _____

ECB:VJB:psj

cc: Illinois EPA, FOS Region 2
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from refractory plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, e.g., 100 tons per year of particulate matter-10 (PM₁₀), 100 tons per year for carbon monoxide (CO), 10 tons per year for any single hazardous air pollutant (HAP), and 25 tons per year for combination of HAPs) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	E M S S I O N S							Single HAP		<u>Total HAP</u>
	<u>PM</u>	<u>PM₁₀</u>	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>VOM</u>	<u>HF</u>	<u>HCl</u>		
<u>Mortar Line</u>										
Pneumatic										
Conveyor	0.9	0.6								
Weight Hopper	0.4	0.4								
Mixer	0.4	0.4								
Bagger	0.4	0.4								
Conveyors	0.4	0.4								
<u>Refractories Line</u>										
Clay Grinder	86.0	5.4								
Returns Crusher	17.2	1.1								
Rotary Dryer	0.4	0.4	0.9	0.2	1.8					
Storage Bins	0.4	0.4								
Dry Grinder/ Screens	0.9	0.3								
Brick Dryers	4.0	2.0	2.0	6.2		0.6				
Tunnel Kiln	19.2	17.4	7.0	24.0	13.4	0.5	7.4	3.4		
Conveyors	0.4	0.4								
Totals	130.6	29.6	9.9	30.4	15.2	1.1	<10	<10		<25

VJB:psj