

2 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

**GENERAL PERMIT CONDITIONS**

**TERMINATION OF PERMIT TO INSTALL**

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

**NOTICE OF INSPECTION**

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

**CONSTRUCTION OF NEW SOURCES**

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations.

3 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet applicable standards.

#### **PERMIT TO INSTALL FEE**

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

#### **PUBLIC DISCLOSURE**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

#### **APPLICABILITY**

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

4 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

**BEST AVAILABLE TECHNOLOGY**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

**PERMIT TO OPERATE APPLICATION**

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

**SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION**

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

Facility Name: **North American Refractories**Application Number: **14-4694**Date: **April 14, 1999**AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **North American Refractories** located in **Hamilton** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

<u>Ohio EPA Source Number</u>	<u>Source Identification Description</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P013	Kiln #3	The use of a thermal incinerator with at least an 85% control efficiency, emissions limitations and compliance with the Air Toxics Policy.	3745-15-07	See General Terms.
			3745-17-07	See Additional Special Term and Condition A.3.
			3745-17-11*	Less stringent than OAC rule 3745-31-05.
			3745-21-07 (G)(1)	At least an 85% overall control efficiency.
			3745-31-05	1.36 lbs/hour OC 5.96 TPY OC.
				0.052 lb/hour PM/PM <sub>10</sub>
				0.23 TPY PM/PM <sub>10</sub>
				0.4 lb/hour NO <sub>x</sub>
				1.8 TPY NO <sub>x</sub>
				0.12 lb/hour CO
				0.53 TPY CO

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

- \* The emission limitation established by this rule is less stringent than those established by OAC rule 3745-31-05(BAT).

SUMMARY  
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
Organic Compound	5.96
PM	0.23
NO <sub>x</sub>	1.8
CO	0.53
PM <sub>10</sub>	0.23

**REPORTING REQUIREMENTS**

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Hamilton County Dept of Env. Services, 250 William Howard Taft Road, Cincinnati, Ohio 45219-2660.**

**WASTE DISPOSAL**

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

**MAINTENANCE OF EQUIPMENT**

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

7 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

#### **MALFUNCTION/ABATEMENT**

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Hamilton County Dept of Env. Services, 250 William Howard Taft Road, Cincinnati, Ohio 45219-2660.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

#### **AIR POLLUTION NUISANCES PROHIBITED**

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

#### **CONSTRUCTION COMPLIANCE CERTIFICATION**

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

#### **ADDITIONAL SPECIAL TERMS AND CONDITIONS**

##### **A. Applicable Emissions Limitations and/or Control Requirements**

1. For pounds per day and annual emissions limitations for emissions unit P013, see the Air Emissions Summary page of this permit.
2. The hourly emission limitations outlined are based upon the emissions unit's PTE. Therefore, no hourly records are required to demonstrate compliance with these limits.

8 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

3. Visible particulate emissions from emissions unit P013 shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.

**B. Operational Restrictions**

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

**C. Monitoring and Recordkeeping Requirements**

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information for each day for the control equipment:
  - a. a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit; and,
  - b. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated that the emissions unit was in compliance.

9 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

2. The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:
  - a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and,
  - b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.
3. Each record of any monitoring data, testing data and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit. Such records may be maintained in computerized form.

#### **D. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified in T&C B.1.
2. The permittee shall submit required reports in the following manner:
  - a. reports of any required monitoring and/or record keeping information shall be submitted to the Hamilton County Dept of Env. Services; and,
  - b. except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational

10 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Hamilton County Dept of Env. Services. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 30, April 30, July 30, and October 30 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06).

**E. Compliance Methods/Testing Requirements**

1. Compliance with the OC emission limitations shall be demonstrated as follows:
  - a.  $\text{lbs/day from kiln} = 9.28 \text{ Lbs OC/ton (EF)} \times 4 \text{ Tons/cycle} \times 1 \text{ Cycle/5 hrs.} \times \text{Cycles/day} \times (1 - \text{Control eff.})$ ; and,
  - b.  $\text{tons/year from kiln} = \text{Lbs OC/day} \times \text{Days of operation/year} \times 1 \text{ Ton/2000 lbs.}$
2. Compliance with the visible particulate emission limitation in Section A.3. of these terms and conditions shall be determined in accordance with the following method: OAC rule 3745-17-03(B)(1).
3. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. the emission testing shall be conducted within 3 months after startup of the emissions unit;

11 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

- b. the emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for organic compounds;
- c. the following test method shall be employed to demonstrate compliance with the allowable mass emission rate: Method 25 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA; and,
- d. the test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Dept of Env. Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Dept of Env. Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Dept of Env. Services's refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Dept of Env. Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Dept of Env. Services within 30 days

12 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Hamilton County Dept of Env. Services.

#### **F. Miscellaneous Requirements**

1. This permit allows the use of materials (typically coatings and cleanup materials) specified by the permittee in the permit to install application for this emissions unit. To fulfill the best available technology requirements of (OAC) rule 3745-31-05 and to ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), the emission limitation(s) specified in this permit was (were) established using the Ohio EPA's "Air Toxic Policy" and is (are) based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for each pollutant using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for each pollutant:

Pollutant: Furfural

TLV (ug/m3): 7900

Maximum Hourly Emission Rate (lbs/hr): 0.30

Predicted 1-Hour Maximum Ground-Level

Concentration (ug/m3): 24

MAGLC (ug/m3): 188

OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":

13 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value specified in the above table;
- b. changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit], reduced exhaust gas flow rate, and decreased stack height);
- c. changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and,
- d. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.

The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:

- a. the change is not otherwise considered a "modification" under OAC Chapter 3745-31;
- b. the permittee can continue to comply with the allowable emission limitations specified in its permit to install; and,
- c. prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still

14 of 14 Pages

Facility Name: **North American Refractories**

Application Number: **14-4694**

Date: **April 14, 1999**

satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.