



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL MODIFICATION
CUYAHOGA COUNTY**

CERTIFIED MAIL

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 13-03910

Fac ID: 1318558216

DATE: 12/2/2004

GE Advanced Ceramics
James Maskil
22557 West Lunn Road
Cleveland, OH 44101-4924

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

CLAA



Permit To Install
Terms and Conditions

Issue Date: 12/2/2004
Effective Date: 12/2/2004

FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 13-03910

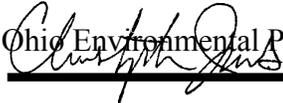
Application Number: 13-03910
Facility ID: 1318558216
Permit Fee: **\$200**
Name of Facility: GE Advanced Ceramics
Person to Contact: James Maskil
Address: 22557 West Lunn Road
Cleveland, OH 44101-4924

Location of proposed air contaminant source(s) [emissions unit(s)]:
22557 West Lunn Road
Strongsville, Ohio

Description of proposed emissions unit(s):
Change the description of the furnace units in the CVD Process for PBN Manufacturing, clarification of terms and conditions, and amend (decrease) emission limitations.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.


Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- 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 restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping 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 appropriate Ohio EPA District Office or local air agency. 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 31, April 30, July 31, and October 31 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.)

3. Records Retention Requirements

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 be 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.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized

representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. 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.

9. Construction of New Sources(s)

The proposed emissions unit(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

GE Advanced Ceramics
PTI Application: 13-03910
Modification Issued: 12/2/2004

Facility ID: 1318558216

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 cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(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 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. 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 the requirements of this permit or cannot meet applicable standards.

10. 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.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. 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.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of

GE Advanced Ceramics

PTI Application: 13-03910

Modification Issued: 12/2/2004

Facility ID: 1318558216

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, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

GE Advanced Ceramics
 PTI Application: 13-03910
 Modification Issued: 12/2/2004

Facility ID: 1318558216

14. 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.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

**SUMMARY (for informational purposes only)
 TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
HCL	0.9
PM	2.41

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P016 - Two (2) Pyrolytic Boron Nitride (PBN) furnace units with dry vacuum pump systems all connected by ductwork to a packed tower wet scrubber Modified The terms and conditions of this permit supercede the terms and conditions in PTI #13-03910 issued on 12/06/2001.	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-11(B) OAC rule 3745-17-07(A)(1)	Particulate Emissions (PE): 2.41 tpy HCl: 0.20 lb/hr, 0.9 tpy Visible emissions from any stack servicing this emissions unit shall not exceed 5% percent opacity, as a six minute average. 0.551 lb PE/hr The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The hourly emission limitation for this emissions unit was established to reflect the potential to emit. This potential is based on a maximum production rate of this batch process. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with the hourly emission limits.

B. Operational Restrictions

Emissions Unit ID: **P016**

1. The permittee shall operate a wet scrubber for the control of hydrochloric acid and particulate emissions while the emissions unit is in operation.
2. The blow-down scrubber flow rate shall be continuously maintained at a value not less than 30 gallons per hour (hourly average of 0.5 gallons per minute) or otherwise in accordance to the manufacturer's recommendation, while the emissions unit is in operation.
3. The recirculation scrubber water flow rate shall be continuously maintained at a value not less than 22 gallons per minute or otherwise in accordance to the manufacturer's recommendation, while the emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to monitor the scrubber water recirculation and blow-down flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day while the emissions unit is in operation:

- a. the blow-down scrubber water flow rate, in gallons per hour, on a daily basis;
 - b. the scrubber water recirculation flow rate, in gallons per minute, on a daily basis; and
 - c. the time and duration of all times the emissions unit was in operation and the scrubber was not operating and the corrective actions that were taken to resume operation of the control device.
2. The recirculation sump float switch for make-up scrubber water additions is equipped with an alert system to indicate if the recirculation water level is below three inches of the lowest travel position of the float arm switch. The permittee shall monitor and record days when an alarm sounds on the recirculation sump float switch for make-up water additions.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. the blow-down scrubber water flow rate;
 - b. the scrubber water recirculation flow rate; and

Modification Issued: 12/2/2004

- c. the days when the alarm on the recirculation sump float switch for make-up scrubber water additions sounds.

The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the emissions unit was in operation and the scrubber was not operating.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:

0.551 lb PE/hr

0.20 lb HCl/hr

Applicable Compliance Method:

Compliance with emission limitation shall be determined through procedures established in Section E.1.d of the terms and conditions of this permit.

- b. Emission Limitation:

2.41 tpy PE

0.9 tpy HCl

Applicable Compliance Method:

The ton per year limitations were developed by multiplying the pound per hour limitations by the maximum operating schedule of 8760 hrs/yr, and dividing by 2000 lbs/ton. Therefore, a compliance demonstration with the hourly limits (Section E.1.d below) shall also be a demonstration of compliance with the annual limits.

- c. Emission Limitation:

Visible emissions not exceed 5% percent opacity, as a six minute average

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1), if required by Ohio EPA or Cleveland Division of Air Quality (DAQ).

- d. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- i. the emission testing shall be conducted approximately 6 months after permit issuance (The emissions testing requirement for this section was fulfilled on August 29, 2002. Therefore no additional testing is required after the issuance of this permit unless required by Ohio EPA or Cleveland DAQ);
 - ii. the emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for particulate emissions, HCl, and visible particulate emissions;
 - iii. the following test method(s) shall be employed to demonstrate compliance with the allowable emission rate(s):
 - iv. for particulates, Methods 1 through 5 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA
 - v. for hydrochloric acid (HCl), Method 26A of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA
 - vi. for opacity, Method 9 of 40 CFR Part 60, Appendix A.

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 Cleveland DAQ.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Cleveland DAQ. 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 Cleveland's DAQ's refusal to accept the results of the emission test(s).

Personnel from the Cleveland DAQ 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 Cleveland DAQ within 30 days 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 Cleveland DAQ.

F. Miscellaneous Requirements

The emissions unit is equipped with an alert system to indicate if the control equipment is inoperable.