State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL **CERTIFIED MAIL**
CUYAHOGA COUNTY

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: 13-04172

DATE: 6/26/2003

GE Advanced Ceramics
James Maskil
22557 West Lunn Road
Strongsville, OH 44149

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

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

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA **CLAA**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install	**Issue Date: 6/26/2003**
Terms and Conditions	**Effective Date: 6/26/2003**

FINAL PERMIT TO INSTALL 13-04172

Application Number:	13-04172
APS Premise Number:	1318558216
Permit Fee:	**$200**
Name of Facility:	GE Advanced Ceramics
Person to Contact:	James Maskil
Address:	22557 West Lunn Road Strongsville, OH 44149

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

Description of proposed emissions unit(s):
Titanium Diboride manufacturing using 680 KW electric furnace and baghouse – P001.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit 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 emissions unit(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 and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

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 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 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.

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

Pollutant	Tons Per Year
PE	2.26
CO	4.10

Emissions Unit ID: **P017**

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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P017 - 680 KW Electric Furnace producing titanium diboride.	OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) shall not exceed 0.515 lb/hr and 2.26 tpy. Carbon monoxide (CO) emissions shall not exceed 0.936 lb/hr and 4.10 tpy. Visible emissions from the exhaust of the baghouse shall not exceed 10 percent opacity, as a six-minute average, during any sixty-minute observation period.
	OAC rule 3745-17-07(A)	The emission limitation established by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(A)(2)	The emission limitation established by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None.

B. Operational Restrictions

1. The pressure drop across the baghouse shall be maintained within the range of 1.0 to 5.0 inches of water while this emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.

2. The permittee shall inspect the baghouse for leaks and visible particulate emissions at least once a month during operation periods. Records of such inspections shall include at a minimum the date the inspection was conducted, any and all results obtained, any problems discovered, and any corrective action taken.

3. The permit to install for this emissions unit P017 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application of SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Boron Oxide
   TLV (mg/m3): 10.0
   Maximum Hourly Emission Rate (lb/hr): 0.515
   Predicted 1-hour Maximum Ground-Level Concentration (ug/m3): 6.805
   MAGLC (ug/m3): 238.1

4. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied, the permittee will not make the change. Changes that can affect the parameters used

in applying the "Air Toxic Policy" include the following:

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 emissions 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 previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

5. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the changes(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

6. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emission unit will still satisfy the "Air Toxic Policy."

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

D. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the baghouse had any leaks or visible particulate emissions.

E. Testing Requirements

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

   a. Emission Limitation:
   PE shall not exceed 0.515 lb/hr.

   Applicable Compliance Method(s):
   Compliance may be determined by multiplying an uncontrolled particulate emission factor of 47.1 pounds PE/ton (based on emission testing conducted in June, 1998 at the Lakewood, OH Advanced Ceramics facility) by the maximum process weight of the emissions unit (0.039 ton/hr), and then multiply by (1 - 0.72). The baghouse has a 72% control efficiency.

   If required, compliance with the lb/hr emission limitation shall be demonstrated through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

   b. Emission Limitation:
   PE shall not exceed 2.26 tpy.

   Applicable Compliance Method(s):
   The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

   c. Emission Limitation:
   CO shall not exceed 0.933 lb/hr.

   Applicable Compliance Method:
   Compliance may be determined by multiplying an uncontrolled carbon monoxide emission factor of 24 pounds CO/ton (based on emission testing conducted in June, 1998 at the Lakewood, OH Advanced Ceramics facility) by the maximum process weight of the emissions unit (0.039 ton/hr).

   If required, compliance with the lb/hr emission limitation shall be demonstrated through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 10 and the procedures specified in OAC rule 3745-17-03(B)(10).

d. Emission Limitation:
CO shall not exceed 4.09 tpy.

Applicable Compliance Method;
The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

c. Emission Limitation:
Visible emissions from the exhaust of the baghouse shall not exceed 10 percent opacity, as a six-minute average, during any sixty-minute observation period.

Applicable Compliance Method(s):
If required, compliance shall be determined by visible emission observations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

F. Miscellaneous Requirements

None.