

Synthetic Minor Determination and/or Netting Determination

Permit To Install : 01-08818

A. Source Description

The emissions unit affected by this permit are four(4) arc fusion machines - P010, P011, P012 and P035, two (2) high purity crucible machines - P009 and P025 and twenty (20) lathes - B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P014, P015, P021, P032 and P036.

B. Facility Emissions and Attainment Status

The General Electric Newark Quartz Plant (GE) is located in Licking County. The facility manufactures fused quartz crucibles and glass tubing. The source is located at the following address:

GE Quartz, Inc.
Newark Quartz Plant
611 O'Neill Drive SE
Hebron, Ohio 43025

No templates currently exist for this operation. The terms and conditions were assembled from applicable rules, current guidance, and existing permit to install (PTI No. 01-08046) and draft Title V.

In the summer of 1996, GE made the Central District Office aware of noncompliance issues concerning nitrogen oxide emissions from it's arc fusion machines. Later on in the same year, GE performed stack tests which disclosed noncompliance with SIP allowables for particulate matter emissions from the arc fusion machines. In 1997, testing of the lathes proved that nitrogen oxide emissions are not just generated in the process of burning natural gas, but also, in the tube shaping process. These nitrogen oxide emissions are significant. Testing demonstrated that the facility is Title V for nitrogen oxide based on actuals. To reduce nitrogen oxide emissions below the PSD threshold, GE is installing a Selective Catalytic Reduction (SCR) unit on the arc fusion machines and lathes.

To meet the SIP allowable and the requirements of PTI No. 01-08046, GE installed a dry electrostatic precipitator on the arc fusion machines.

Facility emissions are 3544.6 tpy for uncontrolled nitrogen oxide, 569.33 tpy for unrestricted nitrogen oxide and 228.8 tpy for restricted nitrogen oxide.

C. Source Emissions

The federally enforceable limitations for all emissions units involved restrict nitrogen oxide emissions below PSD levels. Three groups of emissions units will be limited.

Group 1, high purity crucible machines will be limited based on crucible production. There are three high purity crucible machines - P008, P009 and P025. P008 received federally enforceable limits in PTI 01-08151. P009 and P025 in conjunction with nitrogen oxide emissions from emissions units P008, will not exceed a requested annual limit of 18.1 tons per year. The crucible production limit and nitrogen oxide emission limitation is enforced through a cumulative, monthly usage table for the 12 months

following the issuance of this permit. After the initial 12 months, compliance will be shown by a monthly, 12 month summation of the crucible production and nitrogen oxide emission totals. The emissions shall not exceed 18.1 tons per year per 12 month summation if the crucible production limitation in conjunction with the nitrogen oxide emission limitation are not exceeded.

Group 2, twenty lathes, and Group 3, four arc fusion machines, will be limited via a SCR unit. Nitrogen oxide emissions from the twenty-six emissions units will be limited to 210.7 tpy. This nitrogen oxide emission limitation is enforced through a cumulative, monthly allowable, emission table for the 12 months following the issuance of this permit. After the initial 12 months, compliance will be shown by a monthly, 12 month summation of the nitrogen oxide emission totals. Compliance with this limit will be demonstrated by the use of a continuous emissions monitor (CEM).

To meet the SIP allowable in Table 1 of OAC rule 3745-17-11(B)(1), a dry ESP is being put on the arc fusion machines - P010, P011, P012 and P035. Like the NO_x emissions for all emissions units, this measure is retroactive based on the fact that GE was unaware of the PM emissions due to the novelty of arc fusion technology.

D. Conclusion

This Chapter 31 modification of synthetic minor PTI (No. 01-08046) will effectively restrict the nitrogen oxide emissions below the PSD significance level for nitrogen oxide. The combination of the crucible production limitations for the high purity crucible machines and careful maintenance and monitoring of the CEM as well as monthly nitrogen oxide emissions limits, recordkeeping and reporting incorporated into the terms and conditions shall ensure that compliance with this permit is achieved.

BAT for the glass lathes and arc fusion machines for the production of crucibles; is compliance with all regulations and emission limitations. Monitoring, recordkeeping, and reporting is required to ensure ongoing compliance.



State of Ohio Environmental Protection Agency

RE: DRAFT PERMIT TO INSTALL CERTIFIED MAIL
LICKING COUNTY

Street Address:

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

Mailing Address:

Lazarus Gov.
Center

Application No: 01-08818

DATE: 6/22/2004

G E Quartz Inc
Bill Daniels
611 ONeill Dr SE
Hebron, OH 43025

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$4800** will be due. Please do not submit any payment now.

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. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Very truly yours,

Michael W. Ahern

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

CC: USEPA

CDO

PUBLIC NOTICE
ISSUANCE OF DRAFT PERMIT TO INSTALL 01-08818 FOR AN AIR CONTAMINANT SOURCE FOR
G E QUARTZ INC

On 6/22/2004 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **G E Quartz Inc**, located at **611 ONeill Dr SE, Hebron, Ohio**.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 01-08818:

Crucible machine number 9.

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Isaac Robinson, Ohio EPA, Central District Office, 3232 Alum Creek Drive, Columbus, OH 43207-3417
[(614)728-3778]



**Permit To Install
Terms and
Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 01-08818

Application Number: 01-08818
APS Premise Number: 0145000213
Permit Fee: **To be entered upon final issuance**
Name of Facility: G E Quartz Inc
Person to Contact: Bill Daniels
Address: 611 O'Neill Dr SE
Hebron, OH 43025

Location of proposed air contaminant source(s) [emissions unit(s)]:
**611 O'Neill Dr SE
Hebron, Ohio**

Description of proposed emissions unit(s):
Crucible machine number 9.

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

G E Quartz Inc

Facility ID: 0145000213

PTI Application: 01-08818

Issued: To be entered upon final issuance

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - i. The date, place (as defined in the permit), and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions existing at the time of sampling or measurement.
- b. 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.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
 - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written 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. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
- iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

2. 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, i.e., upset, 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. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to 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 emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

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6. General Requirements

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. 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 request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. 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.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

- a. Any document (including reports) required to be submitted and required by a federally

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applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
 - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit To Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule

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3745-77-08(C)(3)(d).

- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. 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 source(s) covered by this permit.

11. 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.

12. 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.

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B. State Only Enforceable 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 of state-only enforceable 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 state-only required 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. 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.

4. 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.

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5. 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.

6. 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.

7. 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.

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) 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.

9. Additional Reporting Requirements When There Are No Deviations of Federally

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Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

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.

C. 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>
NOx	228.8
PE	86.05
Ammonia	264.6

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Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. Emission Limitations

Pursuant to OAC rule 3745-31-05(C), total nitrogen oxides (NO_x) emissions from the selective catalytic reduction (SCR) unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Pursuant to OAC rule 3745-17-07(A), visible particulate emissions (PE) from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036 shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

2. Additional Terms and Conditions

- 2.a** The permittee shall control NO_x emissions from emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036 by using a selective catalytic reduction (SCR) unit.
- 2.b** The permittee shall control particulate emissions (PE) from the blockhouse enclosures of emissions units P010, P011, P012 and P035 by using an electrostatic precipitator (ESP). Emissions from the ESP vent directly to the SCR unit.
- 2.c** A continuous emissions monitoring system (CEMS) malfunction is defined as any time in which the CEMS is not able to sample or analyze the nitrogen oxides in the gas stream exiting the SCR unit.
- 2.d** A SCR malfunction is defined as any time that the SCR automatically shuts down due to an internal control system setting. A SCR malfunction will also include instances where the permittee manually determines that the SCR is not operating properly and must be shut down. The malfunction event will begin at the time of automatic shutdown of the SCR (as recorded by the SCR control system) or at the time malfunction requiring SCR shutdown is manually identified by the permittee.

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- 2.e** In the event of a CEMS malfunction, emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036 shall be shut down within one hour. Once the emissions unit(s) is (are) shut down, the emissions unit(s) shall remain shut down until the CEMS is no longer malfunctioning.
- 2.f** In order to continue to operate the above emissions units during or after a CEMS malfunction, the permittee may develop and submit for pre-approval by the Ohio EPA, CDO an alternative compliance method for estimating the emissions from the arc fusion machines and large diameter lathes listed in Section A.I.2.e above.
- 2.g** CEMS Quality Assurance/ Quality Control
- The permittee shall maintain a copy of the written quality assurance/quality control plan for the CEMS designed to ensure continuous valid and representative readings of NOx emissions in units of pounds per hour and tons per month. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the CEMS must be kept on site and available for inspection during regular office hours.
- 2.h** CEMS Statement of Certification
- The permittee shall maintain a copy of the certification of the continuous NOx monitoring system granted by the Ohio EPA, Central Office on April 10, 2002. This certification was granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 2.
- 2.i** In the event of an SCR malfunction, emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036 will be shut down immediately following completion of work-in-process. Work-in-process is defined as follows for each type of emissions unit:
- i. production and repair lathes (B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P014, P015, P021, P032, and P036) - The current lathe pass (maximum of one hour of operation after SCR malfunction).
 - ii. crucible machines (P010, P011, P012, P035) - The crucible being fused inside the blockhouse at the time of the SCR malfunction.

- 2.j** In the event that the SCR catalyst has degraded to the point that it needs to be replaced, the permittee is still authorized to operate emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036 for up to 60 days provided the following conditions are met:
- i. the permittee has ordered replacement catalyst no later than 10 business days after the permittee has determined that the catalyst has irreversibly degraded below the acceptable activity level; and
 - ii. the permittee shall notify OEPA, CDO, DAPC within 5 business days upon determining the catalyst has irreversibly degraded; and
 - iii. emissions of NOx from the SCR do not exceed 210.7 tons on a rolling, 12-month period; and
 - iv. emissions of NOx for each emissions unit do not exceed the limits specified in the following table (These limits are based on the maximum hourly MMBtu demand and on the SCR operating at 50 % efficiency):

Emissions Unit	NOx Emissions Limit lbs/hr
B001	23.0
B002	23.0
B003	23.0
B004	23.0
B005	23.0
B006	23.0
B023	20.0
B024	20.0
B025	20.0
B026	20.0
B027	20.0
B028	20.0
B029	20.0
B030	25.0
B031	20.0
P010	12.0
P011	12.0
P012	22.3
P014	28.0
P015	28.0

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P021	3.3
P032	20.0
P035	22.3
P036	4.0

II. Operational Restrictions

None

III. Monitoring and Record Keeping Requirements

1. The permittee shall maintain monthly records of the tons of NO_x per month and rolling, 12-month NO_x emissions calculated as the summation of the NO_x emissions as determined by the CEMS (Section A.III.2) and the NO_x emissions from the CEMS malfunctions (Section A.III.3).
2. The permittee shall operate and maintain the CEMS to continuously monitor and record combined NO_x emissions from emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of all data obtained by the CEMS including emissions of NO_x in units of pounds per hour and tons per month, results of daily zero/span calibration checks and magnitude of manual calibration adjustments.

3. The permittee shall collect and record the following information for each CEMS malfunction:
 - a. The number of lathes operating.
 - b. The emissions unit ID for each arc fusion machine in operation.
 - c. The total duration of the CEMS malfunction, in hours.
 - d. The estimated NO_x emissions from the lathes in operation calculated by multiplying the number of lathes in operation in Section A.III.3.a, by the total hours of the CEMS malfunctions in Section A.III.3.c, by the maximum allowable emission rate of 15.0* lbs NO_x/hr.
 - e. The estimated NO_x emissions from the arc fusion machines** calculated using the following equation:

$$\{ \text{arc fusion machine \#4 (P010)} * 7.2 \text{ lbs/hr} \} + \{ \text{arc fusion machine \#5 (P011)} * 7.2 \text{ lbs/hr} \} \\ + \{ \text{arc fusion machine \#8 (P012)} * 14.0 \text{ lbs/hr} \} + \{ \text{arc fusion machine \#9 (P035)} * 14.0 \text{ lbs/hr} \}.$$
 - f. The summation of the NO_x emissions from the lathes and from the arc fusion machines, in

lbs.

* Allowable emission rate for emissions unit B030.

** If an arc fusion machine is not in operation at the time of the CEMS malfunction then its emissions are assumed to be zero.

4. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when any of the emissions units identified in Section A.I.1 are in operation and when the weather conditions allow, for any visible particulate emissions from the SCR unit stack serving these emissions units. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal conditions;
 - c. if the emissions are not representative of normal conditions, the cause(s) of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA approved methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when any of the emissions units identified in Section A.I.1 are in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month NO_x emission limitation for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined.

The quarterly deviation reports shall be submitted in accordance with the requirements specified in Part I - General Terms and Condition A.1.c.ii.

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2. CEMS Data Reporting

The permittee must submit data for each CEMS (that meets the requirements of 40 CFR Part 60.13 and has received certification from Ohio EPA) to Ohio EPA, Central Office on a quarterly basis. The

data presented in the quarterly reports shall reflect emissions unit operations, monitoring availability, actual tons of NO_x, and excess NO_x emissions in units of pounds per hour and rolling, 12-month limitation (in tons) for the previous calendar quarter.

The permittee shall submit reports within one month following the end of each calendar quarter to the Ohio EPA, CDO documenting any CEMS downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s) taken for each time period of monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall address the data obtained during the previous calendar quarter.

3. CEMS Electronic Data Reporting, Summary Form

Pursuant to OAC rule 3745-15-04 and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the Ohio EPA, CDO within the schedule required in Part I, Section A.1.c.ii. of this PTI.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, CDO by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

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1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

210.7 tons per year NOx emissions from the SCR unit stack for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

Compliance shall be based on the record keeping in Section III, Monitoring and Recordkeeping, terms 1 through 3.

- b. Emission Limitation:

Visible particulate emissions (PE) from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036 shall not exceed 20% opacity, as a 6-minute average, except as provided by OAC rule 3745-17-07.

Applicable Compliance Method:

Compliance shall be based on the record keeping in Section III, Monitoring and Recordkeeping, term 4.

If required by Ohio EPA and/or U.S. EPA, 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).

2. Relative Accuracy Test Audit

To ensure the validity of the data from the CEMS, the permittee shall certify the accuracy of the CEMS annually pursuant to provisions for a relative accuracy test audit (RATA) in 40 CFR Part 60, Appendix F.

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

I. Emission Limitations

1. Ammonia emissions from the SCR unit stack shall not exceed 60.4 pounds per hour and 264.6 tons per year.

Ammonia is an air toxic, and the hourly emission limitation was established to reflect the status

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quo ammonia emission rate for this emissions unit for future air toxics evaluations that may involve this emissions unit.

2. **Additional Terms and Conditions**

None.

II. Operational Restrictions

None

III. Monitoring and Record Keeping Requirements

1. Air Toxics Language

Ammonia emissions from the SCR unit stack were evaluated based on the actual materials and the design parameters of the SCR unit. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by the SCR unit using actual operating data and the 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: ammonia

TLV (mg/m³): 17

Maximum Hourly Emission Rate (lbs/hr): 60.4

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 111.8

MAGLC (ug/m³): 404.8

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 still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not 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 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 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.).

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(AAA)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (AAA)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions units that vent to the SCR 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.

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the emission limitations in Section B.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
Ammonia emissions from the SCR unit stack shall not exceed 60.4 pounds per hour.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the emission testing requirements specified in term No. 2 which follows.

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- b. Emission Limitation:
Ammonia emissions from the SCR unit stack shall not exceed 264.6 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for ammonia shall be assumed provided compliance is maintained with the pound per hour emission limitation for ammonia. The annual limitation was calculated by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

- 2. The permittee shall conduct, or have conducted, emission testing for the SCR unit in accordance with the following requirements:
 - a. The emission testing shall be conducted approximately 6 months after the effective date of this permit.
 - b. The emission testing shall be conducted to demonstrate compliance with the hourly emission limitation for ammonia.
 - c. The following test methods shall be employed to demonstrate compliance with the ammonia emission limitation: 40 CFR Part 60, Appendix A, Methods 1 - 4 and Conditional Test Method 027. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, CDO.
 - d. The tests shall be conducted while all emissions units venting to the SCR unit are operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA, CDO.

Not later than 30 days prior to the proposed test dates, the permittee shall submit an "Intent to Test" notification to the Ohio EPA, CDO. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the times and dates of the tests, and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA, CDO's refusal to accept the emissions tests.

Personnel from the Ohio EPA, CDO shall be permitted to witness the tests, 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 emission tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, CDO within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with approval from the Ohio EPA, CDO.

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Emissions Unit ID: B001

G E Q
PTI A

Emissions Unit ID: B001

Issued: To be entered upon final issuance

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
B001 - Large Diameter Lathe No. 1 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
		OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	
	OAC rule 3745-17-07(A)	

G E Q

PTI A

Emissions Unit ID: B001

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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See A.I.2.b below.

<p>Nitrogen oxides (NOx) emissions from this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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See A.I.2.a below.

<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR</p>	
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Emissions Unit ID: B001

2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

Issued: To be entered upon final issuance

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (3.78) by an emission factor of 12.06 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:

210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Emissions Unit ID: B001

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
B001 - Large Diameter Lathe No. 1 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

G E Q

PTI A

Emissions Unit ID: B002

Issued: To be entered upon final issuance

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B002 - Large diameter lathe No. 2 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)

G E Q

PTI A

Emissions Unit ID: B002

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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See A.I.2.b below.

<p>Nitrogen oxides (NOx) emissions from this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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See A.I.2.a below.

<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR</p>	
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2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

Issued: To be entered upon final issuance**IV. Reporting Requirements**

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Applicable Compliance Method:
This emission limitation was established by multiplying the maximum hourly MMBtu demand (3.78) by an emission factor of 12.06 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.
 - b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-

Emissions Unit ID: B002

month summation of the NOx emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

c. Emission Limitation:

Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

d. Emission Limitation:

PE for this emissions unit alone from the SCR stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

e. Emission Limitation:

PE for this emissions unit alone from the SCR stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

G E Q

PTI A

Emissions Unit ID: B002

Issued: To be entered upon final issuance**B. State Only Enforceable Section****I. 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>
B002 - Large diameter lathe No. 2 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

G E Q

PTI A

Emissions Unit ID: B003

Issued: To be entered upon final issuance

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B003 - Large diameter lathe No. 3 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)(1) OAC rule 3745-23-06(B) OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)

Applicable Emissions
Limitations/Control
Measures

The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).

PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

See A.I.2.b below.

Nitrogen oxides (NOx) emissions from this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

See A.I.2.a below.

Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Visible PE from the SCR unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Issued: To be entered upon final issuance

- SCR outlet CEMS; and
- f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (3.78) by an emission factor of 12.06 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:

Emissions Unit ID: B003

210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

c. Emission Limitation:

Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

d. Emission Limitation:

PE for this emissions unit alone from the SCR stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

e. Emission Limitation:

PE for this emissions unit alone from the SCR stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

**G E Q
PTI A**

Emissions Unit ID: B003

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
B003 - Large diameter lathe No. 3 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B004 - Large diameter lathe No. 4 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

**G E Q
PTI A**

Emissions Unit ID: B004

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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See A.I.2.b below.

<p>Nitrogen oxides (NOx) emissions from this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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See A.I.2.a below.

<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR</p>	
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Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Emissions Unit ID: B004

- f. SCR outlet CEMS; and
 for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (3.78) by an emission factor of 12.06 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
 210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
B004 - Large diameter lathe No. 4 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

**G E Q
PTI A**

Emissions Unit ID: B005

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B005 - Large diameter lathe No. 5 - 3.78 MMbtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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See A.I.2.b below.

<p>Nitrogen oxides (NOx) emissions from this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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See A.I.2.a below.

<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR</p>	
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Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.6.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Emissions Unit ID: B005

- f. SCR outlet CEMS; and
 for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (3.78) by an emission factor of 12.06 lb/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
 210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
B005 - Large diameter lathe No. 5 - 3.78 MMbtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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PTI A

Emissions Unit ID: B006

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B006 - Large diameter lathe No. 6 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

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Emissions Unit ID: B006

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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See A.I.2.b below.

<p>Nitrogen oxides (NOx) emissions from this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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See A.I.2.a below.

<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR</p>	
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Emissions Unit ID: B006

2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

Issued: To be entered upon final issuance

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 14.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (3.78) by an emission factor of 12.06 lb/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Emissions Unit ID: B006

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

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PTI A

Emissions Unit ID: B006

Issued: To be entered upon final issuance**B. State Only Enforceable Section****I. 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>
B006 - Large diameter lathe No. 6 - 3.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

**G E Q
PTI A**

Emissions Unit ID: B023

Issued: To be entered upon final issuance
None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B023 - Large diameter lathe No. 10 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)

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PTI A

Emissions Unit ID: B023

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.
Nitrogen oxides (NO _x) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.	
Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.	
See A.I.2.a below.	
Total NO _x emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO _x emissions.	
Visible PE from the SCR unit stack shall not exceed	

2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

Issued: To be entered upon final issuance

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Emissions Unit ID: B023

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
B023 - Large diameter lathe No. 10 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

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PTI A

Emissions Unit ID: B024

Issued: To be entered upon final issuance

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
B024 - Large diameter lathe No. 11 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)
		OAC rule 3745-17-11(B)(1)
		OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	

G E Quartz Inc

PTI Application: 01 00010

Issued

Facility ID: 0145000213

Emissions Unit ID: B024

Applicable Emissions
Limitations/Control
Measures

The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).

Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

See A.I.2.a below.

Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Visible PE from the SCR unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

See A.I.2.b below.

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Issued: To be entered upon final issuance

- SCR outlet CEMS; and
- f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:

Emissions Unit ID: B024

210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

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PTI A

Emissions Unit ID: B024

Issued: To be entered upon final issuance**B. State Only Enforceable Section****I. 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>
B024 - Large diameter lathe No. 11 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B025 - Large diameter lathe No. 12 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

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PTI A

Emissions Unit ID: B025

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.
Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.	
Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.	
See A.I.2.a below.	
Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.	
Visible PE from the SCR unit stack shall not exceed	

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

- f. SCR outlet CEMS; and
 for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
 210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

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Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
B025 - Large diameter lathe No. 12 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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Emissions Unit ID: B026

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B026 - Large diameter lathe No. 13 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMs. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

G E Q

PTI A

Emissions Unit ID: B026

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.
Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.	
Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.	
See A.I.2.a below.	
Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.	
Visible PE from the SCR unit stack shall not exceed	

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Emissions Unit ID: B026

- f. SCR outlet CEMS; and
for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
B026 - Large diameter lathe No. 13 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMs. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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Emissions Unit ID: B027

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
B027 - Large Diameter lathe No. 14 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	OAC rule 3745-23-06(B)
	OAC rule 3745-17-07(A)	

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PTI A

Emissions Unit ID: B027

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.
Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.	
Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.	
See A.I.2.a below.	
Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.	
Visible PE from the SCR unit stack shall not exceed	

2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

Issued: To be entered upon final issuance

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
B027 - Large Diameter lathe No. 14 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

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Emissions Unit ID: B028

Issued: To be entered upon final issuance

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B028 - Large diameter lathe No. 16 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)

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PTI A**

Emissions Unit ID: B028

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p> <p>See A.I.2.b below.</p>
<p>Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.</p>	
<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
<p>See A.I.2.a below.</p>	
<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
<p>Visible PE from the SCR unit stack shall not exceed</p>	

2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

Issued: To be entered upon final issuance

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:

210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

G E Q

PTI A

Emissions Unit ID: B028

Issued: To be entered upon final issuance**B. State Only Enforceable Section****I. 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>
B028 - Large diameter lathe No. 16 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

G E Q

PTI A

Emissions Unit ID: B029

Issued: To be entered upon final issuance

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B029 - Large diameter lathe No. 17 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)

Applicable Emissions
Limitations/Control
Measures

The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).

Nitrogen oxides (NO_x) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

See A.I.2.a below.

Total NO_x emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Visible PE from the SCR unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

See A.I.2.b below.

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Issued: To be entered upon final issuance

- SCR outlet CEMS; and
- f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:

Emissions Unit ID: B029

210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

c. Emission Limitation:

Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

d. Emission Limitation:

PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

e. Emission Limitation:

PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
B029 - Large diameter lathe No. 17 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- 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>	
B030 - Large diameter lathe - No. 18 - 6.3 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	OAC rule 3745-23-06(B)
	OAC rule 3745-17-07(A)	

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PTI A**

Emissions Unit ID: B030

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.
Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 15.0 pounds per hour.	
Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.	
See A.I.2.a below.	
Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.	
Visible PE from the SCR unit stack shall not exceed	

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Emissions Unit ID: B030

- f. SCR outlet CEMS; and
for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 15.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (6.3) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
B030 - Large diameter lathe - No. 18 - 6.3 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

G E Q

PTI A

Emissions Unit ID: B031

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
B031 - Large diameter lathe No. 15 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

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PTI A

Emissions Unit ID: B031

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.</p>
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Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

See A.I.2.a below.

Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Visible PE from the SCR unit stack shall not exceed

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.6.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Emissions Unit ID: B031

- f. SCR outlet CEMS; and
 for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Method 1-4 and 7E.

- b. Emission Limitation:
 210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
B031 - Large diameter lathe No. 15 - 5.04 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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Emissions Unit ID: P009

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
P009 - High purity crucible machine no. 3 (uncontrolled). The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	<p>OAC rule 3745-31-05(A)(3)</p> <p>OAC rule 3745-17-11(B)(1)</p> <p>OAC rule 3745-23-06(B)</p> <p>OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)</p>
	OAC rule 3745-17-07(A)

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Emissions Unit ID: P009

Issued: To be entered upon final issuance

Applicable Emissions
Limitations/Control
Measures

serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).

The emissions limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3)

See A.I.2.a below.

Nitrogen oxides (NOx) emissions shall not exceed 2.9 pounds per hour from the stack serving this emissions unit.

Particulate emissions (PE) shall not exceed 0.017 pounds per hour from the stack serving this emissions unit.

Total PE shall not exceed 3.25 tons per year from the stack serving this emissions unit.

Total NOx emissions shall not exceed 18.1 tons per year, from the two high purity crucible machine stacks, for emissions units P009 and P025, combined, as a rolling, 12-month summation of the NOx emissions.

See A.II.1 below.

Visible PE from the stack

Emissions Unit ID: P009

2. Additional Terms and Conditions

- 2.a** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.b** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The maximum crucible production for emissions units P009 and P025, combined, shall not exceed 75,416 crucibles, based upon a rolling, 12-month summation of the crucible production figures.

The permittee has existing crucible production records and therefore this emissions unit does not need to be limited to a monthly production limitation during the first year after issuance of this permit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information:
- the total number of crucibles produced in emissions units P009 and P025;
 - the total NOx emission rate from emissions units P009 and P025, combined, in pounds, calculated using the following formula:
$$\{\text{number of crucibles produced monthly in P025}\} * \{1.02 \text{ lbs/crucible}\} + \{\text{number of crucibles produced monthly in P009}\} * \{0.48 \text{ lb/crucible}\};$$
 and
 - the rolling, 12-month summation of NOx emissions and the rolling, 12-month summation of crucibles produced from emissions units P009 and P025, combined.
2. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

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- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month crucible production restriction and NO_x emission limitation. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.
2. The permittee shall submit annual reports that specify the total NO_x emissions from emissions units P009 and P025 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

Emissions Unit ID: P009

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

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- a. Emission Limitation:
NOx emissions shall not exceed 2.9 pounds per hour from the stack serving this emissions unit.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated by multiplying the maximum hourly number of crucibles produced in this emissions unit (6) by an emission factor of 0.48 lb/crucible (based on emission tests performed by GE Quartz, Inc. Newark Plant on 3/24/98).

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 4 and 7E.

- b. Emission Limitation:
Total NOx emissions shall not exceed 18.1 tons per year, from the two high purity crucible machine stacks, for emissions units P009 and P025, combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation based on the record keeping required in section A.III.1.

- c. Emission Limitation:
Visible PE from the stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section A.III.2.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission 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).

- d. Emission Limitation:
PE shall not exceed 0.017 pounds per hour from the stack serving this emissions unit.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated based upon the results of emission tests performed on August 2, 1999 that demonstrated a maximum hourly emission rate of 0.017 lb/hr.

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If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE shall not exceed 3.25 tons per year from the stack serving this emissions unit.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. 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>
P009 - High purity crucible machine no. 3 (uncontrolled). The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

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Emissions Unit ID: P009

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
P010 - Arc fusion machine (P-14) No. 4 controlled with a dust collection system (4 baghouses and a ESP) and a SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-11(B)(1) OAC rule 3745-23-06(B) OAC rule 3745-17-07(B) OAC rule 3745-17-08(B) OAC rule 3745-31-05(C) (synthetic minor to avoid PSD) OAC rule 3745-17-07(A)

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<u>Applicable Emissions Limitations/Control Measures</u>	serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
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The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.6 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.
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Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 7.2 pounds per hour.	See A.I.2.c below. See A.I.2.e below. See A.I.2.f below.
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Particulate emissions (PE) for this emissions unit alone from all stacks serving this emissions unit shall not exceed 7.0 tons per year.	
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See A.I.2.a and A.I.2.b below.	
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Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.	
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Visible PE from any stack	
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Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The emissions generated during the crucible formation shall be vented to the ESP. The emissions from the ESP shall be vented directly to the SCR unit.
- 2.b** The permittee shall vent the emissions from this emissions unit through a dust collection system consisting of: baghouse no. 15, baghouse no. 3, baghouse no. 6 and baghouse no. 9, and a dry electrostatic precipitator (ESP) and shall operate the dust collection system (4 baghouses and ESP) at all times while operating this emissions unit.
- 2.c** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.d** The PE and NO_x pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.
- 2.e** Since this emissions unit is not located in an Appendix A area, pursuant to paragraph (A)(1) of OAC rule 3745-17-08, the requirements of OAC rule 3745-17-08(B) do not apply to this emissions unit.
- 2.f** Pursuant to paragraph (B)(11)(e) of OAC rule 3745-17-07, the requirements of OAC rule 3745-17-07(B) do not apply to this emissions unit.

II. Operational Restrictions

- 1. The pressure drop across the baghouses which make up a portion of the dust collection system shall be maintained within the following pressure drop ranges while the emissions unit is in operation:
 - a. for baghouse no. 15, within the range of 1 to 6 inches of water;
 - b. for baghouse no. 3, within the range of 1 to 6 inches of water;
 - c. for baghouse no. 6, within the range of 1 to 6 inches of water; and
 - d. for baghouse no. 9, within the range of 1 to 6 inches of water.
- 2. The permittee shall operate the ESP and SCR during any operation of this emissions unit.
- 3. The secondary voltage recorded at each field within the ESP shall be maintained within the

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manufacturer's recommended ranges:

- a. a minimum of three fields out of a total of four must be operating; and
- b. the secondary voltage of at least three operating fields shall not drop below 8 kV, for each field, for a period exceeding five minutes.

The ESP parameter ranges may be adjusted in the event that future emission testing is conducted which demonstrates compliance with the particulate emission limitation and written approval of the new ESP parameters is obtained from the Ohio EPA, Central District Office.

4. The operation of the control equipment outside the range specified above may or may not indicate a mass emission and/or visible emission violation. If required by the Ohio EPA and/or U.S. EPA, compliance with the mass emission limitation and visible emission limitations shall be determined by performing concurrent mass emission tests and visible emissions readings, using USEPA-approved methods and procedures. The results of any required emission tests and visible emission readings shall be used in determining whether or not the operation of the control equipment outside the range specified above is indicative of a possible violation of the mass emission limitation and/or visible emission limitations.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain equipment to monitor the pressure drops across the dust collection system baghouses while the emissions unit is in operation. The monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The permittee shall monitor the pressure drops across baghouse no. 15, baghouse no. 3, baghouse no. 6, and baghouse no. 9 on a daily basis.
2. The permittee shall monitor and record, once each day, the secondary voltage, in kilovolts, to each field and the number of fields operating in the ESP when the emissions unit is in operation.
3. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

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- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

4. For monitoring and record keeping requirements for the hourly NO_x emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NO_x destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
5. For each 3-hour period when the NO_x destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NO_x destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NO_x emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NO_x emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. The permittee shall submit quarterly reports that identify all periods of time during which the pressure drop across the baghouse was outside the operating range specified above. The quarterly and semiannual reports shall be submitted in accordance with Part I - General Term and

Condition A.1.c.ii.

2. The permittee shall submit quarterly deviation (excursion) reports that identify any deviations from the operational parameters specified in section A.II.
3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse stacks and SCR unit stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
4. The quarterly deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition, Section A.1.c.ii.
5. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.5.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods: Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 7.2 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by the following equation:

$$\text{Emission limitation (EL)} = (10 \text{ crucibles/hr})^* \times (2.39 \text{ lbs of NO}_x\text{/crucible})^{**} \times (0.30)^{***}$$

* Maximum hourly crucible production..

** The emission factor was established through emission tests performed by GE Quartz, Inc. on 12/4/96, 12/5/96 and 12/19/96.

*** The control efficiency of the SCR unit is assumed to be 70% for the purpose of this calculation.

Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance

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with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.5.e is less than or equal to the emission limitation determined in Section III.5.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from any stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section A.III.3.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission 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).

- d. Emission Limitation:
PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.6 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated using the following equation:

hourly PE rate = L + F + P + C where:

PE = particulate emissions for this emissions unit

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L = particulate emissions from loading of sand into crucible pots (lb/hr)

F = particulate emissions from crucible formation through electric arc fusion (lb/hr)

P = particulate emissions from crucible pop-off hood (lb/hr)

C = particulate emissions from hot sand clean out (lb/hr)

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$$L = (484 \text{ lbs/hr})^* \times (0.174 \text{ lb/ton})^{**} \times (0.01)^{***} \times (1 \text{ ton}/2000 \text{ lbs})$$

$$F = (10 \text{ crucibles/hr})^* \times (0.37 \text{ lb PE/crucible})^{**} \times (0.1)^{***}$$

$$P = (484 \text{ lbs/hr})^* \times (0.058 \text{ lb/ton})^{**} \times (0.01)^{***} \times (1 \text{ ton}/2000 \text{ lbs})$$

$$C = (150 \text{ lbs/hr})^* \times (0.75 \text{ lb PE / lb sand})^{**} \times (0.001)^{***}$$

- * L - The hourly process weight rate.
F - The maximum hourly crucible production
P - The hourly process weight rate.
C - The maximum hot sand dumped per hour.
- ** L&P -The transfer emission factor was derived with information from AP-42, 5th Edition, Volume I, Chapter 11, Mineral Products Industry, Table 11.12-2, dated January 1995.
F&C -The emission factor was established through emission tests performed by GE Quartz, Inc Newark Plant from 12/17/96 through 12/19/96. Compliance was demonstrated with emissions tests performed on January 30, 2002.
- *** L -The control efficiency of the Spencer baghouse system is assumed to be 99%.
F -The control efficiency of the ESP is assumed to be 90%.
P -The control efficiency of the American Air Filter is assumed to be 99%.
C -The control efficiency of the Spencer baghouse is assumed to be 99.9%.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 7.0 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. 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>
P010 - Arc fusion machine (P-14) No. 4 controlled with a dust collection system (4 baghouses and a ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

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None

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VI. Miscellaneous Requirements

Emissions Unit ID: P010

None

**G E Q
PTI A**

Emissions Unit ID: P011

Issued: To be entered upon final issuance

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
P011 - Arc fusion machine (P-14) No. 5 controlled with a dust collection system (4 baghouses and ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-17-07(B)
	OAC rule 3745-17-08(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

G E Q

PTI A

Emissions Unit ID: P011

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<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.6 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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<p>Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 7.0 pounds per hour.</p>	<p>See A.I.2.c below. See A.I.2.e below. See A.I.2.f below.</p>
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<p>Particulate emissions (PE) for this emissions unit alone from all stacks serving this emissions unit shall not exceed 7.0 tons per year.</p>	
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<p>See A.I.2.a and A.I.2.b below.</p>	
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<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from any stack</p>	
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- 2.a** The emissions generated during the crucible formation shall be vented to the ESP. The emissions from the ESP shall be vented directly to the SCR unit.
- 2.b** The permittee shall vent the emissions from this emissions unit through a dust collection system consisting of: baghouse no. 15, baghouse no. 4, baghouse no. 7 and baghouse no. 8, and a dry electrostatic precipitator (ESP) and shall operate the dust collection system (4 baghouses and ESP) at all times while operating this emissions unit.
- 2.c** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.d** The PE and NO_x pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.
- 2.e** Since this emissions unit is not located in an Appendix A area, pursuant to paragraph (A)(1) of OAC rule 3745-17-08, the requirements of OAC rule 3745-17-08(B) do not apply to this emissions unit.
- 2.f** Pursuant to paragraph (B)(11)(e) of OAC rule 3745-17-07, the requirements of OAC rule 3745-17-07(B) do not apply to this emissions unit.

II. Operational Restrictions

- 1. The pressure drop across the baghouses which make up a portion of the dust collection system shall be maintained within the following pressure drop ranges while the emissions unit is in operation:
 - a. for baghouse no. 15, within the range of 1 to 6 inches of water;
 - b. for baghouse no. 4, within the range of 1 to 6 inches of water;
 - c. for baghouse no. 7, within the range of 1 to 6 inches of water; and
 - d. for baghouse no. 8, within the range of 1 to 6 inches of water.
- 2. The permittee shall operate the ESP and SCR during any operation of this emissions unit.
- 3. The secondary voltage recorded at each field within the ESP shall be maintained within the

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manufacturer's recommended ranges:

- a. a minimum of three fields out of a total of four must be operating; and
- b. the secondary voltage of at least three operating fields shall not drop below 8 kV, for each field, for a period exceeding five minutes.

The ESP parameter ranges may be adjusted in the event that future emission testing is conducted which demonstrates compliance with the particulate emission limitation and written approval of the new ESP parameters is obtained from the Ohio EPA, Central District Office.

4. The operation of the control equipment outside the range specified above may or may not indicate a mass emission and/or visible emission violation. If required by the Ohio EPA and/or U.S. EPA, compliance with the mass emission limitation and visible emission limitations shall be determined by performing concurrent mass emission tests and visible emissions readings, using USEPA-approved methods and procedures. The results of any required emission tests and visible emission readings shall be used in determining whether or not the operation of the control equipment outside the range specified above is indicative of a possible violation of the mass emission limitation and/or visible emission limitations.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain equipment to monitor the pressure drops across the dust collection system baghouses while the emissions unit is in operation. The monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The permittee shall monitor the pressure drops across baghouse no. 15, baghouse no. 4, baghouse no. 7, and baghouse no. 8 on a daily basis.
2. The permittee shall monitor and record, once each day, the secondary voltage, in kilovolts, to each field and the number of fields operating in the ESP when the emissions unit is in operation.
3. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

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- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

4. For monitoring and record keeping requirements for the hourly NO_x emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NO_x destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
5. For each 3-hour period when the NO_x destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NO_x destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NO_x emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NO_x emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. The permittee shall submit quarterly reports that identify all periods of time during which the pressure drop across the baghouse was outside the operating range specified above. The quarterly and semiannual reports shall be submitted in accordance with Part I - General Term and Condition A.1.c.ii.
2. The permittee shall submit quarterly deviation (excursion) reports that identify any deviations from the operational parameters specified in section A.II.
3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse stacks and SCR unit stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
4. The quarterly deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition, Section A.1.c.ii.
5. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NOx emission limitation as required by Section A.III.5.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods: Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NOx emissions for this emissions unit alone from the SCR unit stack shall not exceed 7.2 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by the following equation:

$$\text{Emission limitation (EL)} = (10 \text{ crucibles/hr})^* \times (2.39 \text{ lbs of NOx/crucible})^{**} \times (0.30)^{***}$$

* Maximum hourly crucible production..

** The emission factor was established through emission tests performed by GE Quartz, Inc. on 12/4/96, 12/5/96 and 12/19/96.

*** The control efficiency of the SCR unit is assumed to be 70% for the purpose of this calculation.

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Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.5.e is less than or equal to the emission limitation determined in Section III.5.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from any stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section A.III.3.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission 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).

- d. Emission Limitation:
PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.6 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated using the following equation:

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hourly PE rate = L + F + P + C where:

PE = particulate emissions for this emissions unit

L = particulate emissions from loading of sand into crucible pots (lb/hr)

F = particulate emissions from crucible formation through electric arc fusion (lb/hr)

P = particulate emissions from crucible pop-off hood (lb/hr)

C = particulate emissions from hot sand clean out (lb/hr)

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$$L = (484 \text{ lbs/hr})^* \times (0.174 \text{ lb/ton})^{**} \times (0.01)^{***} \times (1 \text{ ton/2000 lbs})$$

$$F = (10 \text{ crucibles/hr})^* \times (0.37 \text{ lb PE/crucible})^{**} \times (0.1)^{***}$$

$$P = (484 \text{ lbs/hr})^* \times (0.058 \text{ lb/ton})^{**} \times (0.01)^{***} \times (1 \text{ ton/2000 lbs})$$

$$C = (150 \text{ lbs/hr})^* \times (0.75 \text{ lb PE / lb sand})^{**} \times (0.001)^{***}$$

- * L - The hourly process weight rate.
F - The maximum hourly crucible production
P - The hourly process weight rate.
C - The maximum hot sand dumped per hour.
- ** L&P -The transfer emission factor was derived with information from AP-42, 5th Edition, Volume I, Chapter 11, Mineral Products Industry, Table 11.12-2, dated January 1995.
F&C -The emission factor was established through emission tests performed by GE Quartz, Inc Newark Plant from 12/17/96 through 12/19/96. Compliance was demonstrated with emissions tests performed on January 30, 2002.
- *** L -The control efficiency of the Spencer baghouse system is assumed to be 99%.
F -The control efficiency of the ESP is assumed to be 90%.
P -The control efficiency of the American Air Filter is assumed to be 99%.
C -The control efficiency of the Spencer baghouse is assumed to be 99.9%.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 7.0 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. 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>
P011 - Arc fusion machine (P-14) No. 5 controlled with a dust collection system (4 baghouses and ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

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V. Testing Requirements

None

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VI. Miscellaneous Requirements

Emissions Unit ID: P011

None

**G E Q
PTI A**

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
P012 - Arc fusion machine (P-272) No. 8 controlled with a dust collection system (4 baghouses and ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-17-07(B)
	OAC rule 3745-17-08(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

G E Q

PTI A

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Applicable Emissions
Limitations/Control
Measures

PE for this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).

PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.83 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 13.3 pounds per hour.

See A.I.2.c below.
 See A.I.2.e below.
 See A.I.2.f below.

Particulate emissions (PE) for this emissions unit alone from all stacks serving this emissions unit shall not exceed 8.3 tons per year.

See A.I.2.a and A.I.2.b below.

Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Visible PE from any stack

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The emissions generated during the crucible formation shall be vented to the ESP. The emissions from the ESP shall be vented directly to the SCR unit.
- 2.b** The permittee shall vent the emissions from this emissions unit through a dust collection system consisting of: baghouse no. 15, baghouse no. 4, baghouse no. 7 and baghouse no. 8, and a dry electrostatic precipitator (ESP) and shall operate the dust collection system (4 baghouses and ESP) at all times while operating this emissions unit.
- 2.c** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.d** The PE and NO_x pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.
- 2.e** Since this emissions unit is not located in an Appendix A area, pursuant to paragraph (A)(1) of OAC rule 3745-17-08, the requirements of OAC rule 3745-17-08(B) do not apply to this emissions unit.
- 2.f** Pursuant to paragraph (B)(11)(e) of OAC rule 3745-17-07, the requirements of OAC rule 3745-17-07(B) do not apply to this emissions unit.

II. Operational Restrictions

- 1. The pressure drop across the baghouses which make up a portion of the dust collection system shall be maintained within the following pressure drop ranges while the emissions unit is in operation:
 - a. for baghouse no. 15, within the range of 1 to 6 inches of water;
 - b. for baghouse no. 4, within the range of 1 to 6 inches of water;
 - c. for baghouse no. 7, within the range of 1 to 6 inches of water; and
 - d. for baghouse no. 8, within the range of 1 to 6 inches of water.
- 2. The permittee shall operate the ESP and SCR during any operation of this emissions unit.
- 3. The secondary voltage recorded at each field within the ESP shall be maintained within the

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manufacturer's recommended ranges:

- a. a minimum of three fields out of a total of four must be operating; and
- b. the secondary voltage of at least three operating fields shall not drop below 8 kV, for each field, for a period exceeding five minutes.

The ESP parameter ranges may be adjusted in the event that future emission testing is conducted which demonstrates compliance with the particulate emission limitation and written approval of the new ESP parameters is obtained from the Ohio EPA, Central District Office.

4. The operation of the control equipment outside the range specified above may or may not indicate a mass emission and/or visible emission violation. If required by the Ohio EPA and/or U.S. EPA, compliance with the mass emission limitation and visible emission limitations shall be determined by performing concurrent mass emission tests and visible emissions readings, using USEPA-approved methods and procedures. The results of any required emission tests and visible emission readings shall be used in determining whether or not the operation of the control equipment outside the range specified above is indicative of a possible violation of the mass emission limitation and/or visible emission limitations.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain equipment to monitor the pressure drops across the dust collection system baghouses while the emissions unit is in operation. The monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The permittee shall monitor the pressure drops across baghouse no. 15, baghouse no. 3, baghouse no. 6, and baghouse no. 9 on a daily basis.
2. The permittee shall monitor and record, once each day, the secondary voltage, in kilovolts, to each field and the number of fields operating in the ESP when the emissions unit is in operation.
3. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

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- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

4. For monitoring and record keeping requirements for the hourly NO_x emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NO_x destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
5. For each 3-hour period when the NO_x destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NO_x destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NO_x emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NO_x emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

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1. The permittee shall submit quarterly reports that identify all periods of time during which the pressure drop across the baghouse was outside the operating range specified above. The quarterly and semiannual reports shall be submitted in accordance with Part I - General Term and Condition A.1.c.ii.
2. The permittee shall submit quarterly deviation (excursion) reports that identify any deviations from the operational parameters specified in section A.II.
3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse stacks and SCR unit stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
4. The quarterly deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition, Section A.1.c.ii.
5. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.5.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 13.3 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by the following equation:

$$\text{Emission limitation (EL)} = (6.32 \text{ crucibles/hr})^* \times (7.04 \text{ lbs of NO}_x\text{/crucible})^{**} \times (0.30)^{***}$$

* Maximum hourly crucible production..

** The emission factor was established through emission tests performed by GE Quartz, Inc. in November 2003.

*** The control efficiency of the SCR unit is assumed to be 70% for the purpose of this calculation.

Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

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If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.5.e is less than or equal to the emission limitation determined in Section III.5.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from any stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section A.III.3.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission 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).

- d. Emission Limitation:
PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.83 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated using the following equation:

hourly PE rate = L + F + P + C where:

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PE = particulate emissions for this emissions unit

L = particulate emissions from loading of sand into crucible pots (lb/hr)

F = particulate emissions from crucible formation through electric arc fusion (lb/hr)

P = particulate emissions from crucible pop-off hood (lb/hr)

C = particulate emissions from hot sand clean out (lb/hr)

$$L = (600 \text{ lbs/hr})^* \times (0.174 \text{ lb/ton})^{**} \times (0.01)^{***} \times (1 \text{ ton}/2000 \text{ lbs})$$

$$F = (6.32 \text{ crucibles/hr})^* \times (0.952 \text{ lb PE/crucible})^{**} \times (0.1)^{***}$$

$$P = (600 \text{ lbs/hr})^* \times (0.058 \text{ lb/ton})^{**} \times (0.01) \times (1 \text{ ton}/2000 \text{ lbs})$$

$$C = (210 \text{ lbs/hr})^* \times (0.75 \text{ lb PE / lb sand})^{**} \times (0.001)^{***}$$

* L - The hourly process weight rate.

F - The maximum hourly crucible production

P - The hourly process weight rate.

C - The maximum hot sand dumped per hour.

** L&P -The transfer emission factor was derived with information from AP-42, 5th Edition, Volume I, Chapter 11, Mineral Products Industry, Table 11.12-2, dated January 1995.

F&C -The emission factor was established through emission tests performed by GE Quartz, Inc Newark Plant from 12/17/96 through 12/19/96. Compliance was demonstrated with emissions tests performed on January 30, 2002.

*** L -The control efficiency of the Spencer baghouse system is assumed to be 99%.

F -The control efficiency of the ESP is assumed to be 90%.

P -The control efficiency of the American Air Filter is assumed to be 99%.

C -The control efficiency of the Spencer baghouse is assumed to be 99.9%.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

e. Emission Limitation:

PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 8.3 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
P012 - Arc fusion machine (P-272) No. 8 controlled with a dust collection system (4 baghouses and ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

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None

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Issued: To be entered upon final issuance

VI. Miscellaneous Requirements

Emissions Unit ID: P012

None

Issued: To be entered upon final issuance

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
P014 - Large diameter lathe No. 7 - 4.56 MMBtu/hr controlled with a SCR unit and controlled by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	OAC rule 3745-23-06(B)
	OAC rule 3745-17-07(A)	

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Emissions Unit ID: P014

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.</p>
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<p>Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 17.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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<p>See A.I.2.a below.</p>	
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<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR unit stack shall not exceed</p>	
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Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

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- f. SCR outlet CEMS; and
for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 17.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (4.56) by an emission factor of 12.06 lb/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
P014 - Large diameter lathe No. 7 - 4.56 MMBtu/hr controlled with a SCR unit and controlled by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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Emissions Unit ID: P015

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>
P015 - Large diameter lathe No. 8 - 4.56 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)
	OAC rule 3745-17-07(A)

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Emissions Unit ID: P015

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p> <p>See A.I.2.b below.</p>
<p>Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 17.0 pounds per hour.</p>	
<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
<p>See A.I.2.a below.</p>	
<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
<p>Visible PE from the SCR unit stack shall not exceed</p>	

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

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- f. SCR outlet CEMS; and
for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 17.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (4.56) by an emission factor of 12.06 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Issued: To be entered upon final issuance

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
P015 - Large diameter lathe No. 8 - 4.56 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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PTI A**

Emissions Unit ID: P021

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
P021 - Large diameter repair lathe No. 1 - 0.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
		OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	
	OAC rule 3745-17-07(A)	

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PTI A

Emissions Unit ID: P021

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.</p>
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<p>Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 2.0 pounds per hour.</p>	
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<p>Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.</p>	
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<p>See A.I.2.a below.</p>	
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<p>Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.</p>	
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<p>Visible PE from the SCR unit stack shall not exceed</p>	
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Emissions Unit ID: P021

2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c The PE and NO_x pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NO_x emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NO_x destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NO_x destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NO_x destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NO_x emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NO_x emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

Issued: To be entered upon final issuance

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 2.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (0.78) by an emission factor of 8.5 lbs/MMBtu (derived from emissions tests performed on May 28, 1998) and by (1- 0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:

210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Emissions Unit ID: P021

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. **Emission Limitation:**
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. **Emission Limitation:**
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. **Emission Limitation:**
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
P021 - Large diameter repair lathe No. 1 - 0.78 MMBtu/hr controlled with a SCR unit and monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

Issued: To be entered upon final issuance

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
P025 - High purity crucible machine No. 1 - uncontrolled. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)
		OAC rule 3745-17-11(B)(1)
		OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	

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Emissions Unit ID: P025

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<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3)</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>See A.I.2.a below.</p>
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<p>Nitrogen oxides emissions (NOx) shall not exceed 2.88 pounds per hour from the stack of this emissions unit.</p>	
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<p>Particulate emissions (PE) shall not exceed 0.057 pound per hour from the stack of this emissions unit.</p>	
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<p>Total PE shall not exceed 4.6 tons per year from the stack of this emissions unit.</p>	
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<p>Total NOx shall not exceed 18.1 tons per year, from the two high purity crucible machine stacks, for emissions units P009 and P025 combined, as a rolling, 12-month summation. See A.II.1 below.</p>	
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<p>Visible PE, from the stack, shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>	
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<p>The emissions limitation</p>	
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Emissions Unit ID: P025

2. Additional Terms and Conditions

- 2.a** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.b** The PE and NOx pounds per hour and PE tons per year emissions limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emissions limitations.

II. Operational Restrictions

1. The maximum crucible production for P009 and P025 shall not exceed 75,416 crucibles, based upon a rolling, 12-month summation of the crucible production figures.

The permittee has existing crucible production records and therefore this emissions unit does not need to be limited to a monthly production limitation during the first year after issuance of this permit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information:
- the total number of crucibles produced in P009, and P025;
 - the total NOx emission rate from emissions units P009 and P025, combined, in pounds, calculated using the following formula:
$$\{\text{number of crucibles produced monthly in P025}\} * \{1.02 \text{ lbs/crucible}\} + \{\text{number of crucibles produced monthly in P009}\} * \{0.48 \text{ lb/crucible}\};$$
 and
 - the rolling, 12-month summation of NOx emissions and the rolling, 12-month summation of crucibles produced from P009 and P025 combined.
2. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
- the color of the emissions;
 - whether the emissions are representative of normal operations;
 - if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - the total duration of any visible emission incident; and
 - any corrective actions taken to eliminate the visible emissions.

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Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month crucible production restriction and NO_x emission limitation. These reports are due by the dates described in Part 1 - General Terms and Conditions of this permit.
2. The permittee shall submit annual reports that specify the total NO_x emissions from emissions units P009 and P025 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
Nitrogen oxides emissions (NO_x) shall not exceed 4.13 pounds per hour from the stack of this emissions unit.

Emissions Unit ID: P025

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated by multiplying the maximum hourly number of crucibles produced in this emissions unit (6) by an emission factor of 0.48 lb/crucible (based on emission tests performed by GE Quartz, Inc. Newark Plant on 3/24/98).

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with U.S. EPA Methods 1 - 4 and 7E.

b. Emission Limitation:

Total NO_x shall not exceed 18.1 tons per year, from the two high purity crucible machine stacks, for emissions units P009 and P025 combined, as a rolling, 12-month summation.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation based on the record keeping required in section A.III.1.

c. Emission Limitation:

Visible PE, from the stack, shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission 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).

d. Emission Limitation:

PE shall not exceed 0.057 pound per hour from the stack of this emissions unit.

Applicable Compliance Method:

Compliance was established by a stack test performed on August 2, 1999 that demonstrated a maximum hourly emission rate of 0.057 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Methods 1-5.

e. Emission Limitation:

PE shall not exceed 4.6 tons per year from the stack of this emissions unit.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual limitation was calculated by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

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VI. Miscellaneous Requirements

Emissions Unit ID: P025

None

Issued: To be entered upon final issuance

B. State Only Enforceable Section

I. 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>
P025 - High purity crucible machine No. 1 - uncontrolled. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

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Issued

Facility ID: 0145000213

Emissions Unit ID: P025

VI. Miscellaneous Requirements

None

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Emissions Unit ID: P032

Issued: To be entered upon final issuance

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
P032 - Large diameter lathe No. 9 - 5.04 MMBtu/hr controlled with a SCR unit and monitored with a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)	
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	
	OAC rule 3745-17-07(A)	

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Emissions Unit ID: P032

Issued: To be entered upon final issuance

<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.</p>
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Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

See A.I.2.a below.

Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Visible PE from the SCR unit stack shall not exceed

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

Emissions Unit ID: P032

- f. SCR outlet CEMS; and
for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 12.0 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (5.04) by an emission factor of 7.77 lbs/MMBtu (derived from emissions tests performed on March 25, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

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Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
P032 - Large diameter lathe No. 9 - 5.04 MMBtu/hr controlled with a SCR unit and monitored with a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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Emissions Unit ID: P035

Issued: To be entered upon final issuance

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
P035 - Arc fusion machine (P-272) No. 9 controlled with a dust collection system (4 baghouses and an ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)
		OAC rule 3745-17-11(B)(1)
		OAC rule 3745-23-06(B)
		OAC rule 3745-17-07(B)
		OAC rule 3745-17-08(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	

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Emissions Unit ID: P035

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<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.</p>
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<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).</p>	<p>PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.83 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.</p>
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<p>Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 13.3 pounds per hour.</p>	<p>See A.I.2.c below. See A.I.2.e below. See A.I.2.f below.</p>
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Particulate emissions (PE) for this emissions unit alone from all stacks serving this emissions unit shall not exceed 8.3 tons per year.

See A.I.2.a and A.I.2.b below.

Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.

Visible PE from any stack

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The emissions generated during the crucible formation shall be vented to the ESP. The emissions from the ESP shall be vented directly to the SCR unit.
- 2.b** The permittee shall vent the emissions from this emissions unit through a dust collection system consisting of: baghouse no. 15, baghouse no. 3, baghouse no. 6 and baghouse no. 9, and a dry electrostatic precipitator (ESP) and shall operate the dust collection system (4 baghouses and ESP) at all times while operating this emissions unit.
- 2.c** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.d** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.
- 2.e** Since this emissions unit is not located in an Appendix A area, pursuant to paragraph (A)(1) of OAC rule 3745-17-08, the requirements of OAC rule 3745-17-08(B) do not apply to this emissions unit.
- 2.f** Pursuant to paragraph (B)(11)(e) of OAC rule 3745-17-07, the requirements of OAC rule 3745-17-07(B) do not apply to this emissions unit.

II. Operational Restrictions

- 1. The pressure drop across the baghouses which make up a portion of the dust collection system shall be maintained within the following pressure drop ranges while the emissions unit is in operation:
 - a. for baghouse no. 15, within the range of 1 to 6 inches of water;
 - b. for baghouse no. 3, within the range of 1 to 6 inches of water;
 - c. for baghouse no. 6, within the range of 1 to 6 inches of water; and
 - d. for baghouse no. 9, within the range of 1 to 6 inches of water.
- 2. The permittee shall operate the ESP and SCR during any operation of this emissions unit.
- 3. The secondary voltage recorded at each field within the ESP shall be maintained within the

Emissions Unit ID: P035

manufacturer's recommended ranges:

- a. a minimum of three fields out of a total of four must be operating; and
- b. the secondary voltage of at least three operating fields shall not drop below 8 kV, for each field, for a period exceeding five minutes.

The ESP parameter ranges may be adjusted in the event that future emission testing is conducted which demonstrates compliance with the particulate emission limitation and written approval of the new ESP parameters is obtained from the Ohio EPA, Central District Office.

4. The operation of the control equipment outside the range specified above may or may not indicate a mass emission and/or visible emission violation. If required by the Ohio EPA and/or U.S. EPA, compliance with the mass emission limitation and visible emission limitations shall be determined by performing concurrent mass emission tests and visible emissions readings, using USEPA-approved methods and procedures. The results of any required emission tests and visible emission readings shall be used in determining whether or not the operation of the control equipment outside the range specified above is indicative of a possible violation of the mass emission limitation and/or visible emission limitations.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain equipment to monitor the pressure drops across the dust collection system baghouses while the emissions unit is in operation. The monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The permittee shall monitor the pressure drops across baghouse no. 15, baghouse no. 3, baghouse no. 6, and baghouse no. 9 on a daily basis.
2. The permittee shall monitor and record, once each day, the secondary voltage, in kilovolts, to each field and the number of fields operating in the ESP when the emissions unit is in operation.
3. The permittee shall perform daily checks, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

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- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the daily checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

4. For monitoring and record keeping requirements for the hourly NO_x emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NO_x destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
5. For each 3-hour period when the NO_x destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NO_x destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NO_x emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NO_x emissions in pounds per hour measured by the SCR outlet CEMS; and
 - f. for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. The permittee shall submit quarterly reports that identify all periods of time during which the pressure drop across the baghouse was outside the operating range specified above. The quarterly and semiannual reports shall be submitted in accordance with Part I - General Term and Condition A.1.c.ii.
2. The permittee shall submit quarterly deviation (excursion) reports that identify any deviations from the operational parameters specified in section A.II.
3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse stacks and SCR unit stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
4. The quarterly deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition, Section A.1.c.ii.
5. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NOx emission limitation as required by Section A.III.5.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods: Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
NOx emissions for this emissions unit alone from the SCR unit stack shall not exceed pounds 13.3 per hour.

Applicable Compliance Method:

This emission limitation was established by the following equation:

$$\text{Emission limitation (EL)} = (6.32 \text{ crucibles/hr})^* \times (7.04 \text{ lbs of NOx/crucible})^{**} \times (0.30)^{***}$$

* Maximum hourly crucible production..

** The emission factor was established through emission tests performed by GE Quartz, Inc. in November 2003.

*** The control efficiency of the SCR unit is assumed to be 70% for the purpose of this calculation.

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Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
 210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
 Visible PE from any stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section A.III.3.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission 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).

- d. Emission Limitation:
 PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 1.83 pounds per hour.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated using the following equation:

hourly PE rate = L + F + P + C where:

PE = particulate emissions for this emissions unit

L = particulate emissions from loading of sand into crucible pots (lb/hr)

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F = particulate emissions from crucible formation through electric arc fusion (lb/hr)

P = particulate emissions from crucible pop-off hood (lb/hr)

C = particulate emissions from hot sand clean out (lb/hr)

$$L = (600 \text{ lbs/hr}) \times (0.174 \text{ lb/ton})^* \times (0.01) \times (1 \text{ ton}/2000 \text{ lbs})$$

$$F = (6.32 \text{ crucibles/hr}) \times (0.952 \text{ lb PE/crucible})^{**} \times (0.1)^{***}$$

$$P = (600 \text{ lbs/hr}) \times (0.058 \text{ lb/ton})^* \times (0.01) \times (1 \text{ ton}/2000 \text{ lbs})$$

$$C = (210 \text{ lbs/hr}) \times (0.75 \text{ lb PE / lb sand})^{**} \times (0.001)$$

* L - The hourly process weight rate.

F - The maximum hourly crucible production

P - The hourly process weight rate.

C - The maximum hot sand dumped per hour.

** L&P -The transfer emission factor was derived with information from AP-42, 5th Edition, Volume I, Chapter 11, Mineral Products Industry, Table 11.12-2, dated January 1995.

F&C -The emission factor was established through emission tests performed by GE Quartz, Inc Newark Plant from 12/17/96 through 12/19/96. Compliance was demonstrated with emissions tests performed on January 30, 2002.

*** L -The control efficiency of the Spencer baghouse system is assumed to be 99%.

F -The control efficiency of the ESP is assumed to be 90%.

P -The control efficiency of the American Air Filter is assumed to be 99%.

C -The control efficiency of the Spencer baghouse is assumed to be 99.9%.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 8.3 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
P035 - Arc fusion machine (P-272) No. 9 controlled with a dust collection system (4 baghouses and an ESP) and SCR unit monitored by a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

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VI. Miscellaneous Requirements

Emissions Unit ID: P035

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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>	
P036 - Large diameter repair lathe No. 2 - 0.88 MMBtu/hr controlled with a SCR unit and monitored with a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)
		OAC rule 3745-23-06(B)
	OAC rule 3745-31-05(C) (synthetic minor to avoid PSD)	
	OAC rule 3745-17-07(A)	

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Applicable Emissions Limitations/Control Measures	20% opacity, as a 6-minute average, except as provided by rule.
The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(C).	PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. See A.I.2.b below.
Nitrogen oxides (NOx) emissions for this emissions unit alone from the SCR unit stack shall not exceed 2.24 pounds per hour.	
Particulate emissions (PE) for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.	
See A.I.2.a below.	
Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NOx emissions.	
Visible PE from the SCR unit stack shall not exceed	

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- 2.a** The permittee shall vent the emissions from this emissions unit to a selective catalytic reduction (SCR) unit while operating this emissions unit.
- 2.b** The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.
- 2.c** The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.III.1.
- 2. For monitoring and record keeping requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.III.4.
- 3. For monitoring and record keeping requirements for the hourly NOx emission limitation, the permittee shall collect and record the rolling, 3-hour average of the NOx destruction efficiency of the SCR. The efficiency shall be based upon data obtained from the SCR inlet analyzer and the outlet CEMS.
- 4. For each 3-hour period when the NOx destruction efficiency is less than 70%, the permittee shall note the following in the operations log:
 - a. the 3-hour average NOx destruction efficiency;
 - b. the hours included in the 3-hour period;
 - c. for each hour within the period, the production lathes, repair lathes and arc fusion machines that were operating;
 - d. for each hour within the period, the sum of the hourly NOx emissions limitations for the production lathes, repair lathes and arc fusion machines that were operating;
 - e. for each hour within the period, the NOx emissions in pounds per hour measured by the

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- f. SCR outlet CEMS; and
 for each hour within the period, whether the value for (e) exceeds the value for (d), above.

IV. Reporting Requirements

1. For reporting requirements for the rolling, 12-month NO_x emission limitation, see Part II - Specific Facility Terms and Conditions, Section A.IV.1.
2. For reporting requirements for the visible PE limitation from the SCR unit stack, see Part II - Specific Facility Terms and Conditions, Section A.IV.4.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the hourly NO_x emission limitation as required by Section A.III.4.f above. The quarterly deviation reports shall be submitted in accordance with General Term and Condition A.1.c.ii of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 NO_x emissions for this emissions unit alone from the SCR unit stack shall not exceed 2.24 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (0.88) by an emission factor of 8.5 lbs/MMBtu (derived from emissions tests performed on May 28, 1998) and by (1-0.70) for the control efficiency of the SCR unit. Compliance with this limitation may be demonstrated by showing that the rolling, 3-hour average SCR destruction efficiency is equal to or greater than 70%.

If the rolling, 3-hour average SCR destruction efficiency is less than 70%, compliance with this emission limitation shall be demonstrated by showing that the NO_x emission rate determined in Section III.4.e is less than or equal to the emission limitation determined in Section III.4.d.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Emission Limitation:
 210.7 tons per year of NO_x from the SCR unit stack serving emissions units B001, B002, B003, B004, B005, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, P010, P011, P012, P014, P015, P021, P032, P035, and P036, combined, as a rolling, 12-month summation of the NO_x emissions.

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Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.a.

- c. Emission Limitation:
Visible PE from the SCR stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part II - Facility Specific Terms and Conditions, Section A.V.1.b.

- d. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5.

- e. Emission Limitation:
PE for this emissions unit alone from the SCR unit stack shall not exceed 2.4 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. 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>
P036 - Large diameter repair lathe No. 2 - 0.88 MMBtu/hr controlled with a SCR unit and monitored with a NOx CEMS. The terms of this permit supercede those identified in PTI No. 01-08046 issued March 14, 2002.	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

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None

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