

**STAFF DETERMINATION FOR  
THE APPLICATION TO CONSTRUCT UNDER  
THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS  
FOR DUKE ENERGY  
HANGING ROCK, OHIO  
PTI NUMBER 07-00503**

**September 30, 2004**

Ohio Environmental Protection Agency  
Division of Air Pollution Control  
Lazarus Government Center  
122 South Front Street  
Columbus, Ohio 43215

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major sources, which are sources with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of major source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within a five-year period are considered to be contemporaneous. In addition, Ohio now has incorporated the PSD and NSR requirements by rule under OAC 3745-31.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major source. The principal requirements of the PSD regulations are:

- 1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.
- 2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

- 1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that has been achieved in practice.
- 2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.

- 3) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing State Implementation Plan (SIP) or are on an approved schedule resulting in full compliance with the SIP.

For rural ozone nonattainment areas, the requirements are:

- 1) LAER - New major sources must install controls that represent the lowest emissions levels (highest control efficiency) that has been achieved in practice.
- 2) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing SIP or are on an approved schedule resulting in full compliance with the SIP.

Finally, New Source Performance Standards (NSPS), SIP emission standards and public participation requirements must be followed in all cases.

## **SITE DESCRIPTION**

The facility is in Hamilton Township, in Hanging Rock, Ohio, which is located in Lawrence County. This area is classified as attainment for all of the criteria pollutants, particulate matter less than 10 microns, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds (ozone) and lead.

## **FACILITY DESCRIPTION AND PROJECT INTRODUCTION**

Duke has proposed a power generation station located in Hanging Rock, Ohio. They have installed four new 172 megawatt (MW) General Electric 7FA combined-cycle combustion turbines and heat recovery steam generators with duct burners, to supply power needs. They have also installed 2 cooling towers. The turbines burn natural gas. The cooling towers are the reason for this permit action. The original emission estimates were too low.

## **NEW SOURCE REVIEW (NSR)/PSD APPLICABILITY**

This process will generate criteria pollutant emissions of particulate, NO<sub>x</sub>, CO, SO<sub>2</sub> and VOC. For PSD purposes, the Hanging Rock station is considered a major facility. A PSD analysis is required for any increase in emissions of a pollutant exceeding the PSD threshold emissions level, or the significance levels. Of the pollutants emitted in the original application, PM<sub>10</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub>, VOC resulted in a net increase above PSD levels and for the purposes of this permit action PM-10 from the cooling towers will be reinvestigated for PSD. New Source Review is not applicable, due to attainment status.

Potential HAP emissions are below 10 TPY for any single HAP and 25 TPY for combination of HAPs, therefore 112(g) and Maximum Achievable Control Technology (MACT) requirements do not apply to this facility.

The change in this permit action is for an increase in the amount of PM-10 from cooling towers that was not accounted for in previous permit actions. Below is the new emissions for this PSD project.

TABLE 1

PRELIMINARY POLLUTANT EMISSION RATES  
 MODIFICATION TO INCREASE EMISSION RATES  
**Duke Energy Hanging Rock**

<u>AIR POLLUTANT</u>	<u>TOTAL TPY INCREASE</u>	<u>TOTAL TPY ALLOWABLE</u>	<u>PSD THRESHOLD</u>
NO <sub>X</sub>		492.6	40
CO		1118.96	100
PM/PM <sub>10</sub>	22.78	379.89	25/15
SO <sub>2</sub>		211.46	40
VOC		263.41	40
H <sub>2</sub> SO <sub>4</sub>		32.28	7
Formaldehyde		8.36	NA
Ammonia		560.04	NA

Control Technology Review

As part of the application for any source regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology (BACT) will be employed by the source. The Duke Energy facility is subject to PSD regulations which mandate a case-by-case BACT analysis be performed for PSD triggering pollutants. The application used a "top-down" approach to determine the latest demonstrated control techniques and select an appropriate level of control.

The basic steps to be followed are:

Identify all available potential control options;

Eliminate technically infeasible options;

Rank remaining technologies by control effectiveness;

Evaluate the feasible controls by performance and cost analysis; and

Select the most effective control based on energy, environmental and economic impacts (generally, the feasible technology that is also considered to be cost effective).

The auxiliary boilers and emergency generators will apply good combustion control as BACT.

**PM<sub>10</sub>**

For the cooling towers, drift eliminators will be used as BACT. This was reinvestigated to see if Ohio EPA still believes is BACT. The BACT/LAER clearinghouse still has drift eliminators listed as the top control option. That and the fact that the total dissolved solids of the cooling water is limited very low for the area, Ohio EPA still believes this is BACT.

## Ambient Air Quality Monitoring Requirements

The proposed Duke Energy facility would be located in AQCR 103. The area is attainment for all criteria pollutants. U.S. EPA regulations require the establishment of baseline air quality in the vicinity of the proposed project. This is normally accomplished using representative air quality monitoring data. Air quality monitoring can be utilized to demonstrate that the project will have less than a threshold impact. This threshold impact is identified as the PSD monitoring de minimus level. If the projected impact from the proposed project exceeds this level, ambient data must be collected or existing representative data must be identified.

Duke Energy has conducted ambient air quality modeling to determine the potential impact due to the proposed installation. The following are the projected impacts based on the original modeling:

Pollutant	Averaging Period	Predicted Concentration	Monitoring De minimus Concentration
PM <sub>10</sub>	24-hour	25.0 ug/m <sup>3</sup>	10 ug/m <sup>3</sup>
SO <sub>2</sub>	24-hour	13.3 ug/m <sup>3</sup>	13 ug/m <sup>3</sup>
NO <sub>x</sub>	Annual	5.2 ug/m <sup>3</sup>	14 ug/m <sup>3</sup>
CO	8-hour	257.1 ug/m <sup>3</sup>	532 ug/m <sup>3</sup>

Predicted impacts exceed the monitoring threshold for PM<sub>10</sub> and SO<sub>2</sub> but not for CO and NO<sub>x</sub>. However, Ohio EPA has identified existing ambient data which it judged to be representative of the current air quality within the impact area of Duke Energy facility. Therefore, Duke Energy was not required to conduct pre-construction monitoring.

## Modeling

Air quality dispersion modeling was conducted to assess the effect of this modification on the national ambient air quality standards (NAAQS) and PSD increments. ISCST3 (version 00101) was used in the regulatory default, urban mode in the original permit modeling. Five years of meteorological data (Huntington/Huntington, 1987-1991) were used. Additional modeling using CTSCREEN (version 94111) was also used to determine the peak impacts of these sources on local terrain above stack tip. Building downwash was incorporated into the ISCST3 estimates.

For this revised analysis, AERMOD (version 99351) was rerun to assess the impact of the revised PM emission estimates from the cooling towers. This is the same version which was run at the request of Ohio in the original permit process to provide additional confidence to the future year projections since AERMOD was the anticipated replacement model for industrial source modeling. AERMOD has now been proposed as the replacement for ISCST. Therefore, this reevaluation of PM<sub>10</sub> was only completed with AERMOD.

## Increment

All areas surrounding the Duke Energy facility are Class II PSD areas. It is the Ohio EPA policy that no individual project consumes more than 50% of the available PSD increment. For CO and Pb, projects are constrained to no more than 25% of the NAAQS. The following is the summary of the revised AERMOD modeling for the impact of increment consuming sources:

Pollutant	Averaging Period	Revised Project Concentration	Total PSD * Concentration	PSD Increment Concentration
PM <sub>10</sub>	24-hour	15.67 ug/m <sup>3</sup>	27.8 ug/m <sup>3</sup>	30 ug/m <sup>3</sup>
	Annual	1.77 ug/m <sup>3</sup>	5.6 ug/m <sup>3</sup>	17 ug/m <sup>3</sup>

**\*Original ISCST/CTSCREEN modeling**

The original predicted PM<sub>10</sub> 24-hour PSD increment impacts from the ISCST/CTSCREEN modeling exceeded ½ of the available increment. Although impacts from the facility exceeded Ohio EPA's policy which provides for future growth by limiting increment consumption, the areal extent of the receptors exceeding ½ the PM<sub>10</sub>, 24-hour PSD increment was limited to the peaks of the hill adjacent to the proposed facility. Ohio EPA initially required the applicant to lower impacts by either reducing emission rates or modifying the source or facility layout.

In addition to limiting the overall predicted impact of the original air quality modeling analysis, Ohio EPA required an additional modeling analysis using the proposed air quality model AERMOD. The results of the AERMOD analysis indicate lower constraining impacts which are closer to ½ the PM<sub>10</sub> PSD increment and provide additional assurance that future growth in the area will not be constrained. The revised AERMOD modeling for PM<sub>10</sub> including the emissions from the cooling towers increased the 24-hour PM<sub>10</sub> impact from 15.51 ug/m<sup>3</sup> to 15.67 ug/m<sup>3</sup>.

NAAQS

Existing sources at the facility, existing sources above the PSD significant rates within the Duke Energy significant impact area (SIA) and sources greater than 100 tons/year outside of the SIA were modeled to determine the combined impact of existing significant sources. A background value is added to account for minor sources not explicitly included in the modeling. This summary is based on the original ISCST/CTSCREEN modeling which, as mentioned above, resulted in higher concentrations than the AERMOD model.

Pollutant	Averaging Period	Predicted Concentration	NAAQS Concentration	Concentration With Background
PM <sub>10</sub>	24-hour	36.9 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>	84.9 ug/m <sup>3</sup>
	Annual	7.4 ug/m <sup>3</sup>	50 ug/m <sup>3</sup>	33.4 ug/m <sup>3</sup>

Secondary Impact Analysis

Duke Energy has demonstrated that the predicted pollutant concentrations throughout the study area are below the secondary NAAQS thresholds. The secondary NAAQS are designed to limit the amount of pollutants in the ambient air to levels below those which could have an adverse impact on human welfare, soils and vegetation. The modeling analyses demonstrate that no significant impacts on human welfare, soils or vegetation will occur from the proposed modification.

**Soil and Vegetation:** EPA Air Quality Criteria documents were reviewed for information on pollutants and adverse effects on the type of vegetation and soils in the area. No adverse impact upon soils or vegetation is expected. The modeled concentrations are below the primary and secondary NAAQS limits.

**Visibility:** The Duke Energy facility is located nearly 200 miles from the closest class I area. Primary or

secondary pollutants associated with this project are not anticipated to affect local or class I visibility.

### Toxics Analysis

The Ohio Air Toxics Policy requires evaluation of increases in air toxics above the one ton/year threshold. Emissions rates are modeled to determine whether they exceed the Maximum Acceptable Ground Level Concentration (MAGLC) which is defined under the Air Toxics Policy. There were still no air toxics impacts exceeding the MAGLC.

### Conclusions

Based upon the review of the old permit to install and the supporting documentation provided by the applicant (and ENSR, Duke Energy's consultant), the Ohio EPA staff has determined the installation will comply with all applicable State and Federal environmental regulations and that the requirements for BACT are still satisfied. Therefore, the Ohio EPA staff recommends that a permit to install modification be issued to Duke Energy to correct the emissions from the cooling towers.



State of Ohio Environmental Protection Agency

Street Address:

Mailing Address:

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

Lazarus Gov.  
Center

**RE: DRAFT PERMIT TO INSTALL MODIFICATION  
LAWRENCE COUNTY**

**CERTIFIED MAIL**

**Application No: 07-00503**

**Fac ID: 0744000150**

**DATE: 9/28/2004**

Duke Energy - Hanging Rock, LLC  
Scott Jacobucci  
1395 County Road 1A  
Ironton, OH 456388699

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install modification for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit modification. 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 modification 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 modification 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 modification a fee of **\$ 500** 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.

Sincerely,

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

CC: USEPA

PCHD

KY

WV

LAWRENCE COUNTY

**PUBLIC NOTICE**  
**OHIO ENVIRONMENTAL PROTECTION AGENCY**  
**ISSUANCE OF DRAFT PERMIT TO INSTALL**  
**SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW**  
**TO DUKE ENERGY - HANGING ROCK, LLC**

Public notice is hereby given that the Ohio Environmental Protection Agency (EPA) has issued, on **September 30, 2004**, a draft action of Permit to Install (PTI) application number 07-00503 to Duke Energy, Hanging Rock, Ohio. This draft modification permit proposes to adjust the emissions of PM-10 from two cooling towers located at the existing facility in Hanging Rock, Ohio 45638.

Air emissions of several pollutants result from the original project and PM-10 emissions have increased by 22.78 tons per year in the permit. The proposed allowable criteria pollutant air emission rates which resulted from the original permit including the modification to adjust PM-10 are listed below, in tons per year.

<u>Pollutant</u>	<u>Tons/yr</u>
PM/PM <sub>10</sub>	379.89
NO <sub>x</sub>	492.6
CO	1118.96
VOC	263.41
SO <sub>2</sub>	211.46
H <sub>2</sub> S <sub>04</sub>	32.28

This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by U.S. EPA (40 CFR 52.21) and the Ohio EPA permit to install requirements (OAC 3745-31).

The U.S. EPA allows sources to consume no more than the maximum available ambient PSD increment(s) for each PSD pollutant. The Ohio EPA allows PSD sources to consume less than one half the available increment, with some exceptions. In this case, the impact of this source is localized. This facility has demonstrated that the impact from the new sources is less than the available increment. Based on this analysis, the project complies with the increment requirements.

Within 30 days from the date of this notice, any interested party may submit comments or request a public hearing. Comments are to be sent to Anne Chamberlin of the Portsmouth Local Air Agency, 740 Second Street, Portsmouth, OH 45662.

Further information concerning this application, which is available for public inspection, may be secured from Anne Chamberlin of the Portsmouth Local Air Agency at the above address during normal business hours. Telephone number: (740) 353-5156.



**Permit To Install  
Terms and Conditions**

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

**DRAFT MODIFICATION OF PERMIT TO INSTALL 07-00503**

Application Number: 07-00503  
Facility ID: 0744000150  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: Duke Energy - Hanging Rock, LLC  
Person to Contact: Scott Jacobucci  
Address: 1395 County Road 1A  
Ironton, OH 456388699

Location of proposed air contaminant source(s) [emissions unit(s)]:

**U.S. Route 52  
Hanging Rock, Ohio**

Description of proposed emissions unit(s):

**Modification to include Two Multiple Cell Cooling Towers.**

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

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Director

**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.

**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 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 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.

**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.

**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 application must be made to the Director for the installation or modification of any other emissions unit(s).

**8. Construction Compliance Certification**

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

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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 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.

<b>SUMMARY (for informational purposes only)</b>	
<b>TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS</b>	
<b><u>Pollutant</u></b>	<b><u>Tons Per Year</u></b>
Nox	492.6
CO	1118.96
SO2	211.46
PM/PM10	379.89
VOC	263.41
Ammonia	560.04
Formaldehyde	8.36
Sulfuric Acid	32.28

**Part II - FACILITY SPECIFIC TERMS AND CONDITIONS**

**A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

**I. PSD REQUIREMENTS**

The source described in this Permit to Install is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21. The authority to apply and enforce the PSD regulations has been delegated to the Ohio Environmental Protection Agency. The terms and conditions of this permit and the requirements of the PSD regulations are also enforceable by the United States Environmental Protection Agency.

In accordance with 40 CFR 124.15, 124.19 and 124.20, the following shall apply: (1) the effective date of this permit shall be 30 days after the service of notice to any public commentors of the final decision to issue, modify, or revoke and re-issue the permit, unless the service notice is by mail, in which case the effective date of the permit shall be 30 days after the service of notice; and (2) if an appeal is made to the Environmental Protection Agency, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

Appeals will be addressed to:

United States Environmental Protection Agency  
 Environmental Appeals Board  
 401 M. Street, SW (MC-113do)  
 Washington, DC 20460

**II. The following emissions units (EU) are also being installed as part of this project:**

<u>EU</u>	<u>BACT</u>	<u>Emissions</u>
(2) 500 kW diesel fired backup generators*	use of low sulfur fuel	2.55 TPY NO <sub>x</sub> 3.14 TPY CO 0.369 TPY OC 0.067 TPY SO <sub>2</sub> 0.148 TPY PM/PM <sub>10</sub>
(1) 265 Hp diesel fired fire water pump*	use of low sulfur fuel	2.05 TPY NO <sub>x</sub> 0.443 TPY CO 0.164 TPY VOC 0.024 TPY SO <sub>2</sub> 0.164 TPY PM/PM <sub>10</sub>
(5) fuel/chemical storage tanks	storage of	less than 1 TPY VOC

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diesel fuel or  
low vapor  
pressure  
material

\* subject to OAC rule 3745-31-03(A)(4), restricted to no more than 500 hours per 12 month rolling period.

III. The emissions of Hazardous Air Pollutants (HAPs), as defined in Section 112(b) of the Clean Air Act, from all emissions units located at this facility combined, shall not exceed 10 tons per year for an individual HAP and 25 tons per year for any combination of HAPs, per rolling 12 month period.

IV. Nitrogen Oxides (NOx) Budget Trading Program OAC Chapter 3745-14

1. Facility Code - 0744000150
2. The following regulated emissions units are subject to the applicable requirements specified in OAC Chapter 3745-14.

Emissions Units

P001 - Turbine No. 1  
P002 - Turbine No. 2  
P003 - Turbine No. 3  
P004 - Turbine No. 4

3. The emissions units identified in Part II.A.IV.2 above are NOx budget units under OAC rule 3745-14-01(C)(1)(a).  
[OAC rule 3745-14-01(C)(1)]
4. NOx allowances for units commencing operation on the dates specified in OAC rule 3745-14-05(C)(4) shall be allocated from the new source set-aside in accordance with the provisions of OAC rule 3745-14-05(C)(4)(d).  
[OAC rule 3745-14-05(C)(4)]
5. The NOx authorized account representative shall submit a complete NOx budget permit application in accordance with the deadlines specified in paragraphs (B)(2) and (B)(3) of OAC rule 3745-14-03. The NOx authorized account representative shall also submit, in a timely manner, any supplemental information that the Director determines is necessary in order to review a NOx budget permit application and issue or deny a NOx budget permit.  
[OAC rules 3745-14-01(E)(1)(a)(i), 3745-14-01(E)(1)(a)(ii), and 3745-14-03(B)(1)]

6. Beginning May 31, 2004, the owners and operators of each NOx budget source and each NOx budget unit at the source shall hold NOx allowances available for compliance deductions under paragraph (E) of OAC rule 3745-14-06, as of the NOx allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with OAC rule 3745-14-08, plus any amount necessary to account for actual utilization under paragraph (C)(5) of OAC rule 3745-14-05 for the control period.  
[OAC rules 3745-14-01(E)(3)(a) and 3745-14-01(E)(3)(c)]
7. NOx allowances shall be held in, deducted from, or transferred among NOx allowance tracking system accounts in accordance with OAC rules 3745-14-05, 3745-14-06, 3745-14-07, and 3745-14-09.  
[OAC rule 3745-14-01(E)(3)(d)]
8. A NOx allowance shall not be deducted, in order to comply with the requirement under paragraph (E)(3)(a) of OAC rule 3745-14-01, for a control period in a year prior to the year for which the NOx allowance was allocated.  
[OAC rule 3745-14-01(E)(3)(e)]
9. Each ton of NOx emitted in excess of the NOx budget emission limitation, as defined in OAC rule 3745-14-01(B)(2)(yy), shall constitute a separate violation of OAC Chapter 3745-14, the Clean Air Act, and applicable Ohio law. The owners and operators of a NOx budget unit that has excess emissions in any control period shall surrender the NOx allowances required for deduction under paragraph (E)(4)(a) of OAC rule 3745-14-06 and pay any fine, penalty, or assessment or comply with any other remedy imposed under paragraph (E)(4)(c) of OAC rule 3745-14-06.  
[OAC rules 3745-14-01(E)(3)(b), 3745-14-01(E)(4)(a) and 3745-14-01(E)(4)(b)]
10. When recorded by the Administrator pursuant to OAC rules 3745-14-06 and 3745-14-07, every allocation, transfer, or deduction of a NOx allowance to or from a NOx budget unit's compliance account or the overdraft account of the source where the unit is located is deemed to amend automatically, and become a part of, any NOx budget permit of the NOx budget unit by operation of law without any further review.  
[OAC rule 3745-14-01(E)(3)(h)]
11. Except as provided below, the Director shall revise the NOx budget permit, as necessary, in accordance with OAC rule 3745-77-08. Each NOx budget permit is deemed to incorporate automatically the definitions of terms under paragraph (B) of OAC rule 3745-14-01 and, when recorded by the Administrator, in accordance with OAC rules 3745-14-06 and 3745-14-07, every allocation, transfer, or deduction of a NOx allowance to or from the compliance accounts of the NOx budget units covered by the permit or the overdraft account of the NOx budget source

covered by the permit.

[OAC rules 3745-14-03(D)(2) and 3745-14-03(E)(1)]

12. The owner or operator of a NOx budget unit shall comply with the prohibitions under OAC rule 3745-14-08(A)(5).  
[OAC rule 3745-14-08(A)(5)]
13. The owners and operators of the NOx budget unit shall keep on site at the source each of the following documents for a period of five years from the date the document is created: (This period may be extended for cause, at any time prior to the end of five years, in writing by the Director or Administrator.)
  - a. the account certificate of representation for the NOx authorized account representative for the NOx budget unit and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with paragraph (D) of OAC rule 3745-14-02, provided that the certificate and documents shall be retained on site at the source beyond such five-year period until such documents are superseded because of the submission of a new account certificate or representation changing the NOx authorized account representative;
  - b. all emission monitoring information, in accordance with OAC rule 3745-14-08;
  - c. copies of all reports, compliance certifications, and other submissions and all records made or required under the NOx budget trading program; and
  - d. copies of all documents used to complete a NOx budget permit application and any other submission under the NOx budget trading program or to demonstrate compliance with the requirements of the NOx budget trading program.

[OAC rule 3745-14-01(E)(5)(a)(i) through (iv)]
14. The permittee, and to the extent applicable, the NOx authorized account representative of the NOx budget unit, shall comply with the monitoring and reporting requirements as provided in OAC rule 3745-14-08 and in 40 CFR Part 75, Subpart H. For purposes of complying with such requirements the definitions in OAC rule 3745-14-01(B) and in 40 CFR 72.2 shall apply, and the terms "affected unit," "designated representative," and "continuous emission monitoring system" (or "CEMS") in 40 CFR Part 75 shall be replaced by the terms "NOx budget unit," "NOx authorized account representative," and "continuous emission monitoring system" (or "CEMS"), respectively, as defined in OAC rule 3745-14-01(B).  
[OAC rule 3745-14-08(A)]
15. The permittee shall comply with the monitoring plan requirements of 40 CFR Part 75.62, except that the monitoring plan shall also include all information required by 40 CFR Part 75, Subpart H.  
[OAC rule 3745-14-08(E)(2)(a)]
16. The NOx authorized account representative of the NOx budget unit shall submit the reports and

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compliance certifications required under the NOx budget trading program, including those under OAC rules 3745-14-04 and 3745-14-08, to the Director and Administrator.

[OAC rule 3745-14-01(E)(5)(b)]

17. Each submission under the NOx budget trading program shall be submitted, signed, and certified by the NOx authorized account representative for each NOx budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the NOx authorized account representative:

"I am authorized to make this submission on behalf of the owners and operators of the NOx budget sources or NOx budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

If the NOx authorized account representative for a NOx budget unit subject to an acid rain emission limitation who signed and certified any submission that is made under Subpart F or G of 40 CFR Part 75 and which includes data and information required under OAC rule 3745-14-08 or Subpart H of 40 CFR Part 75 is not the same person as the designated representative or the alternate designated representative for the unit under 40 CFR Part 72, then the submission shall also be signed by the designated representative or the alternate designated representative.

[OAC rules 3745-14-02(A)(5) and 3745-14-08(E)(1)(b)]

18. The NOx authorized account representative shall submit quarterly reports shall include all of the data and information required in Subpart H of 40 CFR Part 75 for each NOx budget unit (or group of units using a common stack) and the data and information in Subpart G of 40 CFR Part 75. The NOx authorized account representative shall submit each quarterly report to the Administrator within thirty days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in 40 CFR Part 75, Subpart H.

[OAC rules 3745-14-08(E)(4)(b) and 3745-14-08(E)(4)(c)(i)]

19. The NOx authorized account representative shall submit to the Administrator a compliance certification in support of each quarterly report based on a reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit's emissions are correctly and fully monitored. The compliance certification shall state that:
- a. the monitoring data submitted were recorded in accordance with the applicable requirements of OAC rule 3745-14-08 and 40 CFR Part 75, including the quality assurance procedures and specifications; and
  - b. for a unit with add-on NOx emission controls and for all hours where data are substituted

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in accordance with 40 CFR Part 75.34(a)(1), the add-on emission control were operating

within the range of parameters listed in the quality assurance program under Appendix B of 40 CFR Part 75 and the substitute values do not systematically underestimate the NOx emissions.

[OAC rule 3745-14-08(E)(4)(d)(i) and (ii)]

20. The NOx authorized account representative for a NOx budget unit shall submit written notice of monitoring system certification and re-certification test dates to the Director and the Administrator in accordance with 40 CFR Part 75.61. The NOx authorized account representative shall submit a certification application to the Administrator, U.S. EPA, Region V Office, and the Director within forty-five days after completing all initial or re-certification tests required under paragraph (B) of OAC rule 3745-14-08, including the information required under Subpart H of 40 CFR Part 75.

[OAC rules 3745-14-08(D) and 3745-14-08(E)(3)]

21. For each control period in which one or more NOx budget units at a source are subject to the NOx budget emission limitation, the NOx authorized account representative of the source shall submit to the Director and the Administrator, by November 30 of that year, a compliance certification report for each source covering all such units. The NOx authorized account representative shall include the following elements in the compliance certification report, in a format prescribed by the Administrator, concerning each unit at the source and subject to the NOx budget emission limitation for the control period covered by the report:

- a. identification of each NOx budget unit;
- b. at the NOx authorized account representative's option, the serial numbers of the NOx allowances that are to be deducted from each unit's compliance account under paragraph (E) of OAC rule 3745-14-06 for the control period;
- c. at the NOx authorized account representative's option, for units sharing a common stack and having NOx emissions that are not monitored separately or apportioned in accordance with OAC rule 3745-14-08, the percentage of allowances that is to be deducted from each unit's compliance account under paragraph (E)(5) of OAC rule 3745-14-06; and
- d. the compliance certification under paragraph (A)(3) of OAC rule 3745-14-04.

[OAC rules 3745-14-04(A)(1) and 3745-14-04(A)(2)]

22. In the compliance certification report under Section A.II.21.d above, the NOx authorized account representative shall certify, based upon reasonable inquiry of those persons with the primary responsibility for operating the source and the NOx budget units at the source in compliance with

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the NOx budget trading program, whether each NOx budget unit for which the compliance

certification is submitted was operated during the calendar year covered by the report in compliance with the requirements of the NOx budget trading program applicable to the unit, including all the following:

- a. whether the unit was operated in compliance with the NOx budget emission limitation;
- b. whether the monitoring plan that governs the unit has been maintained to reflect the actual operation and monitoring of the unit, and contains all information necessary to attribute NOx emissions to the unit, in accordance with OAC rule 3745-14-08;
- c. whether all the NOx emissions from the unit, or group of units (including the unit) using a common stack, were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including whether conditional data were reported in the quarterly reports in accordance with OAC rule 3745-14-08, and if conditional data were reported, the permittee shall indicate whether the status of all conditional data has been resolved and all necessary quarterly report submissions have been made; and
- d. whether the facts that form the basis for certification under OAC rule 3745-14-08 of each monitor at the unit or group of units (including the unit) using a common stack, or for using an excepted monitoring method or alternative monitoring method approved under OAC rule 3745-14-08, if any, have changed.

If a change is required to be reported under Section A.II.22.d above, specify the nature of the change, the reason for the change, when the change occurred, and how the unit's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor re-certification.

[OAC rule 3745-14-04(A)(3)]

23. The NOx authorized account representative shall submit a complete NOx budget permit renewal application for the NOx budget source covering the NOx budget units at the source in accordance with paragraph (E) of OAC rule 3745-77-08.

[OAC rule 3745-14-03(B)(3)(a)]

24. The emission measurements recorded and reported in accordance with OAC rule 3745-14-08 shall be used to determine compliance by the unit with the NOx budget emission limitation under paragraph (E)(3) of OAC rule 3745-14-01.

[OAC rule 3745-14-01(E)(2)(b)]

25. The permittee shall develop and maintain a written quality assurance/quality control plan for each continuous NOx monitoring system designed to ensure continuous valid and representative

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readings of NO<sub>x</sub> emissions in units of the applicable standard. The plan shall follow the requirements of 40 CFR Part 75, Appendix B. The quality assurance/quality control plan and a

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logbook dedicated to the continuous NOx monitoring system must be kept on-site and available for inspection during regular office hours.

[OAC rules 3745-14-08(A)(2)(c) and 3745-14-08(A)(2)(d)]

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

1. The permit to install was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emission unit's exhaust system, as specified by the permittee in the permit to install application. The OEPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by the emission unit using data from the permit to install application 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:

Pollutant: Formaldehyde  
TLV (ug/m3): 272  
Maximum Hourly Emission Rate (lb/hr): 1.98\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.93  
MAGLC (ug/m3): 6.48

Pollutant: Sulfuric Acid  
TLV (ug/m3): 1000  
Maximum Hourly Emission Rate (lb/hr): 8.8\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 8.875  
MAGLC (ug/m3): 24

Pollutant: Ammonia  
TLV (ug/m3): 17000  
Maximum Hourly Emission Rate (lb/hr): 151.2\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 153.83  
MAGLC (ug/m3): 405

Pollutant: Toluene  
TLV (ug/m3): 188,000  
Maximum Hourly Emission Rate (lb/hr): 1.02\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 6.023  
MAGLC (ug/m3): 4476

Pollutant: Xylene

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TLV (ug/m3): 434,000

Maximum Hourly Emission Rate (lb/hr): 0.5\*

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.94

MAGLC (ug/m3): 10333

Pollutant: Acetaldehyde

TLV (ug/m3): 180,000

Maximum Hourly Emission Rate (lb/hr): 0.311\*

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1.842

MAGLC (ug/m3): 4286

Pollutant: Hexane

TLV (ug/m3): 176,000

Maximum Hourly Emission Rate (lb/hr): 0.44\*

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.585

MAGLC (ug/m3): 4190

Pollutant: Zinc

TLV (ug/m3): 5000

Maximum Hourly Emission Rate (lb/hr): 0.29\*

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1.69

MAGLC (ug/m3): 119

\* This was modeled for emissions units B001, B002, P001, P002, P003 and P004 combined.

2. 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, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value specified in the above table;
  - b. changes 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.).
3. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

**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 - 30.6 MMBtu/hr natural gas fired boiler	40 CFR 52.21 and OAC rule 3745-31-(10) thru (20)  OAC rule 3745-31-05(A)(3)

**modification to correct the  
boiler size and hourly  
emission limits**

40 CFR 60 Subpart Dc  
OAC rule 3745-18-06(A)  
OAC rule 3745-17-10(B)(1)  
OAC rule 3745-17-07(A)  
  
OAC rule 3745-31-05(C)

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<u>Applicable Emissions Limitations/Control Measures</u>	
nitrogen oxide (NOx) emissions shall not exceed: 0.035 lb/MMBTU actual heat input 1.07 lb/hr.	NOx - 1.6 SO2 - 0.046 PM/PM10 - 0.46 CO - 1.69 VOC - 0.74  See A.I.2.b below.
sulfur dioxide (SO2) emissions shall not exceed: 0.001 lb/MMBTU actual heat input 0.031 lb/hr.	The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart Dc, OAC rule 3745-18-06(A), OAC 3745-17-10(B)(1), OAC rule 3745-17-07(A), 40 CFR 52.21, and OAC rule 3745-31- (10) thru (20).
carbon monoxide (CO) emission shall not exceed: 0.037 lb/MMBTU actual heat input 1.13 lb/hr.	See section A.I.2.a. below.
volatile organic compounds (VOC) emissions shall not exceed: 0.016 lb/MMBTU actual heat input 0.49 lb/hr.	See section A.I.2.a. below.
particulate(PM/PM10) emissions shall not exceed: 0.01 lb/MMBTU actual heat input 0.31 lb/hr.	20% opacity as a six minute average, except as provided by rule.
The tons per rolling 12-month period shall not exceed:	See section A.I.2.c. below. See Section A.II.2. below.

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**2. Additional Terms and Conditions**

- 2.a** The requirements of this rule are less stringent than the requirements of 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20).
- 2.b** Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of natural gas, low sulfur fuel and low NOx burners constitutes BACT for this emission unit. The emissions limits based on the BACT requirements are listed under 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20) above.
- 2.c** The requirements of this rule are equivalent to the NOx, SO2, and PM/PM10 emissions per 40 CFR Part 52.21 and OAC rule 3745-31 (10) through (20).

**II. Operational Restrictions**

- 1. The permittee shall burn only natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100 cubic feet.
- 2. The maximum annual fuel heat input for this emissions unit shall not exceed 91,500 MMBTU, based upon a rolling, 12-month summation of heat input values.

To ensure enforceability during the first 12 calendar months following the startup of this emissions unit the permittee shall not exceed the monthly cumulative fuel heat input restrictions specified in the following table:

<u>Month</u>	<u>Cumulative Fuel Heat Input (MMBTU)</u>
1	45,750
1-2	91,500
1-3	91,500
1-4	91,500
1-5	91,500
1-6	91,500
1-7	91,500
1-8	91,500
1-9	91,500
1-10	91,500
1-11	91,500
1-12	91,500

After the first 12 calendar months of operation of this emission unit, compliance with the annual fuel heat input restriction shall be based upon a rolling, 12-month summation of the heat input values.

### III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emission unit.
2. The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the emission unit. Fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D.
3. The permittee shall maintain monthly records of the following information for each this emission unit:
  - a. Monthly Fuel Heat input (MMBTU)
  - b. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of fuel heat input (MMBTU).  
Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative fuel heat input (MMBTU) for each calendar month.

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Emissions Unit ID: B001

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#### IV. Reporting Requirements

1. The permittee shall submit deviation(excursion) reports that identify each day when a fuel other than natural gas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit deviation (excursion) reports that identify any record which shows that the sulfur content of the natural gas exceeded 2 grains per 100 standard cubic feet. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(2).
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month fuel heat input limitation and, for the first 12 calendar months of operation, all exceedances of the maximum allowable monthly cumulative fuel heat input limitation. These reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(2).
4. This emissions unit is subject to the applicable provisions of Subpart Dc of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and,
- d. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency  
DAPC - Permit Management Unit  
P.O. Box 163669  
Columbus, Ohio 43216-3669

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and

Portsmouth Local Air Agency  
605 Washington Street, Third Floor  
Portsmouth, Ohio 45662

## 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:

0.035 lb/MMBTU NO<sub>x</sub>,  
1.07 lb/hr NO<sub>x</sub>

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.035 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied NO<sub>x</sub> emission factor (0.035 lb/MMBTU) by the actual heat input rate (MMBTU/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7.

- b. Emission Limitation:

0.001lb/MMBTU SO<sub>2</sub>,  
0.031 lb/hr SO

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.001 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied SO<sub>2</sub> emission factor (0.001 lb/MMBTU) by the actual heat input

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**Facility ID: 0744000150**

Emissions Unit ID: B001

rate (MMBTU/hr)..

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If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

c. Emission Limitation:

0.037 lb/MMBTU CO

1.13 lb/hr CO

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.037 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied CO emission factor (0.037 lb/MMBTU) by the actual heat input rate (MMBTU/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

d. Emission Limitation:

0.016 lb/MMBTU VOC

0.49 lb/hr VOC

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.016 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied VOC emission factor (lb/MMBTU) by the actual heat input rate (MMBTU/hr)..

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25.

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e. Emission Limitation:

0.01 lb/MMBTU PM/PM<sub>10</sub>

0.31 lb/hr PM/PM<sub>10</sub>

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.01 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied PM/PM<sub>10</sub> emission factor (lb/MMBTU) by the actual heat input rate (MMBTU/hr)

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation:

The tons per rolling 12-month period shall not exceed:

NO<sub>x</sub> - 1.6

SO<sub>2</sub> - 0.046

PM/PM<sub>10</sub> - 0.46

CO - 1.69

VOC - 0.74

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping required in section A.III. 3. and the associated emission factors specified in section A.V.

g. Emission Limitation:

Visible particulate emission shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the requirements

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Emissions Unit ID: B001

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specified in OAC rule 3745-17-03(B)(1) determined according to Method 9 of 40 CFR Part 60, Appendix A.

**VI. Miscellaneous Requirements**

None

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Emissions Unit ID: B001

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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>
B001 - 30.6 MMBtu/hr natural gas fired boiler	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>
B002 - 30.6 MMBtu/hr natural gas fired boiler	40 CFR 52.21 and OAC rule 3745-31-(10) thru (20)
<b>modification to correct the boiler size and hourly emission limits</b>	OAC rule 3745-31-05(A)(3)  40 CFR 60 Subpart Dc OAC rule 3745-18-06(A) OAC rule 3745-17-10(B)(1) OAC rule 3745-17-07(A)  OAC rule 3745-31-05(C)

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Emissions Unit ID: B002

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<u>Applicable Emissions Limitations/Control Measures</u>	
nitrogen oxide (NOx) emissions shall not exceed: 0.035 lb/MMBTU actual heat input 1.07 lb/hr.	NOx - 1.6 SO2 - 0.046 PM/PM10 - 0.46 CO - 1.69 VOC - 0.74  See A.I.2.b. below.  The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart Dc, OAC rule 3745-18-06(A), OAC 3745-17-10(B)(1), OAC rule 3745-17-07(A), 40 CFR 52.21, and OAC rule 3745-31- (10) thru (20).
sulfur dioxide (SO2) emissions shall not exceed: 0.001 lb/MMBTU actual heat input 0.031 lb/hr.	See section A.I.2.a. below.
carbon monoxide (CO) emission shall not exceed: 0.037 lb/MMBTU actual heat input 1.13 lb/hr.	See section A.I.2.a. below.  See section A.I.2.a. below.  20% opacity as a six minute average, except as provided by rule.
volatile organic compounds (VOC) emissions shall not exceed: 0.016 lb/MMBTU actual heat input 0.49 lb/hr.	See section A.I.2.c. below. See section A.II.2. below.
particulate(PM/PM10) emissions shall not exceed: 0.01 lb/MMBTU actual heat input 0.31 lb/hr.	
The tons per rolling 12-month period shall not exceed:	

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

- 2.a** The requirements of this rule are less stringent than the requirements of 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20).
- 2.b** Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of natural gas, low sulfur fuel and low NOx burners constitutes BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rule 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20) above.
- 2.c** The requirements of this rule are equivalent to the NOx, SO2, and PM/PM10 emissions per 40 CFR Part 52.21 and OAC rule 3745-31 (10) through (20).

**II. Operational Restrictions**

1. The permittee shall burn only natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100 cubic feet.
2. The maximum annual fuel heat input for this emissions unit shall not exceed 91,500 MMBTU, based upon a rolling, 12-month summation of heat input values.

To ensure enforceability during the first 12 calendar months following the startup of this emissions unit the permittee shall not exceed the monthly cumulative fuel heat input restrictions specified in the following table:

<u>Month</u>	<u>Cumulative Fuel Heat Input (MMBTU)</u>
1	45,750
1-2	91,500
1-3	91,500
1-4	91,500
1-5	91,500
1-6	91,500
1-7	91,500
1-8	91,500
1-9	91,500
1-10	91,500
1-11	91,500
1-12	91,500

After the first 12 calendar months of operation of this emission unit, compliance with the annual fuel heat input restriction shall be based upon a rolling, 12-month summation of the heat input values.

### III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emission unit.
2. The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the emission unit. Fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D.
3. The permittee shall maintain monthly records of the following information for each emission unit:
  - a. Monthly Fuel Heat input (MMBTU)
  - b. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of fuel heat input (MMBTU).  
Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative fuel heat input (MMBTU) for each calendar month.

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#### **IV. Reporting Requirements**

1. The permittee shall submit deviation(excursion) reports that identify each day when a fuel other than natural gas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit deviation (excursion) reports that identify any record which shows that the sulfur content of the natural gas exceeded 2 grains per 100 standard cubic feet. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(2).
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month fuel heat input limitation and, for the first 12 calendar months of operation, all exceedances of the maximum allowable monthly cumulative fuel heat input limitation. These reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(2).
4. This emissions unit is subject to the applicable provisions of Subpart Dc of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and,
- d. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency  
DAPC - Permit Management Unit  
P.O. Box 163669  
Columbus, Ohio 43216-3669

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Portsmouth Local Air Agency  
605 Washington Street, Third Floor  
Portsmouth, Ohio 45662

## 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:

0.035 lb/MMBTU NO<sub>x</sub>,  
1.07 lb/hr NO<sub>x</sub>

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.035 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied NO<sub>x</sub> emission factor (0.035 lb/MMBTU) by the actual heat input rate (MMBTU/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7.

- b. Emission Limitation:

0.001lb/MMBTU SO<sub>2</sub>,  
0.031 lb/hr SO<sub>2</sub>

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.001 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied SO<sub>2</sub> emission factor (0.001 lb/MMBTU) by the actual heat input rate (MMBTU/hr)..

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

c. Emission Limitation:

0.037 lb/MMBTU CO

1.13 lb/hr CO

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.037 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied CO emission factor (0.037 lb/MMBTU) by the actual heat input rate (MMBTU/hr) .

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

d. Emission Limitation:

0.016 lb/MMBTU VOC

0.49 lb/hr VOC

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.016 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied VOC emission factor (lb/MMBTU) by the actual heat input rate (MMBTU/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25.

e. Emission Limitation:

0.01 lb/MMBTU PM/PM<sub>10</sub>

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0.31 lb/hr PM/PM<sub>10</sub>

Applicable Compliance Method:

Compliance with the lb/MMBTU emission limitation shall be demonstrated using the manufacturer supplied emission factor of 0.01 lb/MMBTU.

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer supplied PM/PM<sub>10</sub> emission factor (lb/MMBTU) by the actual heat input rate (MMBTU/hr)

If required, the permittee shall demonstrate compliance with the lb/MMBTU and lb/hr emission limitations through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation:

The tons per rolling 12-month period shall not exceed:

NO<sub>x</sub> - 1.6

SO<sub>2</sub> - 0.046

PM/PM<sub>10</sub> - 0.46

CO - 1.69

VOC - 0.74

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping required in section A.III. 3. and the associated emission factors specified in section A.V.

g. Emission Limitation:

Visible particulate emission shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(1) determined according to Method 9 of 40 CFR Part 60, Appendix A.

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**VI. Miscellaneous Requirements**

None

Emissions Unit ID: B002

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PTI A

Emissions Unit ID: B002

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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>
B002 - 30.6 MMBTU/hr natural gas fired boiler	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>
P001 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 1 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	40 CFR 52.21 and OAC rule 3745-31-(10) through (20)
<b>modification to remove non applicable rule</b>	

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Emissions Unit ID: P001

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OAC rule 3745-14

OAC rule 3745-31-05(A)(3)

OAC rule 3745-31-05(C)  
40 CFR part 60, Subpart GG

40 CFR part 60, Subpart Da

OAC rule 3745-18-06(F)

OAC rule 3745-17-11(B)(4)

OAC rule 3745-17-07(A)

40 CFR Part 75

OAC rule 3745-103

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<u>Applicable Emissions Limitations/Control Measures</u>		
EMISSION LIMITS WITHOUT DUCT BURNER FIRING	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)	month rolling average 88.53 tpy of PM/PM <sub>10</sub> , based on a 12 month rolling average
nitrogen oxides (NO <sub>x</sub> ) emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	NO <sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	278.0 tpy of CO based on a 12 month rolling average.
NO <sub>x</sub> emissions shall not exceed 21.1 lb/hr.	NO <sub>x</sub> emissions shall not exceed 27.8 lb/hr.	65.1 tpy of VOC based on a 12 month rolling average.
particulate (PM/PM <sub>10</sub> ) emissions shall not exceed 15 lb/hr.	PM/PM <sub>10</sub> emissions shall not exceed 23.3 lb/hr.	8.07 tpy of H <sub>2</sub> SO <sub>4</sub> , based on a 12 month rolling average
sulfur dioxide (SO <sub>2</sub> ) emission shall not exceed 11 lb/hr.	SO <sub>2</sub> emissions shall not exceed 14.4 lb/hr.	see . A.I.2.d. below.
carbon monoxide (CO) emissions shall not exceed 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	CO emissions shall not exceed 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, OAC rule 3745-18-06(F), OAC rule 3745-17-11 (B)(4), OAC rule 3745-17-07(A), 40 CFR 52.21, and OAC rule 3745-31-(10) through (20).
CO emissions shall not exceed 25.7 lb/hr.	CO emissions shall not exceed 50.3 lb/hr.	EMISSION LIMITS WITHOUT DUCT BURNER FIRING
volatile organic compounds (VOC) emissions shall not exceed 3.2 lb/hr .	VOC emissions shall not exceed 20.4 lb/hr.	ammonia (NH <sub>3</sub> ) emissions shall not exceed 28 lb/hr.
sulfuric acid (H <sub>2</sub> SO <sub>4</sub> ) emissions shall not exceed 1.68 lb/hr.	H <sub>2</sub> SO <sub>4</sub> emissions shall not exceed 2.2 lb/hr.	formaldehyde emissions shall not exceed 0.45 lb/hr.
	TOTAL TONS PER YEAR (including 3,260 hours per year without duct burners, 5,500 hours per year with duct burners, startups and shutdowns)	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)
	121.2 tpy of NO <sub>x</sub> based on a 12 month rolling average.	NH <sub>3</sub> emissions shall not exceed 37.8 lb/hr.
	52.82 tpy of SO <sub>2</sub> , based on a 12	formaldehyde emissions shall not exceed 0.494 lb/hr.

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TOTAL TONS PER YEAR  
(including 3,260 hours per  
year without duct burners,  
5,500 hours per year with  
duct burners, startups and  
shutdowns)

140.01 tpy of NH<sub>3</sub>

2.09 tpy of formaldehyde

Visible particulate emissions  
shall not exceed 10 %  
opacity as a six minute  
average.

see . A.I.2.e. below.

see A.II.4. below.

see A.I.2.b. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

.

See A.I.2.c. below.

See A.I.2.c. below.

See Part II Section A.IV.

## **2. Additional Terms and Conditions**

**2.a** The emissions limit based on this applicable rule is equivalent to or less stringent than the

Emissions Unit ID: P001

limit established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20).

- 2.b** The emission limits based on this applicable rule are equivalent to or less stringent than the limits established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20). Except as provided for in the terms and condition of this permit, the permittee is not exempt from meeting any additional requirements of 40 CFR Part 60, Subpart GG.
- 2.c** The permittee shall ensure that any effected emissions unit complies with the requirements of 40 CFR Part 75. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.
- 2.d** The permittee is required to perform a Best Available Control Technology (BACT) review for NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, H<sub>2</sub>SO<sub>4</sub>, and VOC. The emissions limits based on the BACT requirements are listed under 40 CFR 52.21 and OAC rule 3745-31-(10) through(20) above. The following determinations have been made for each pollutant:
- PM- Burning natural gas in an efficient combustion turbine. For this permit, it is assumed that all PM emissions are PM<sub>10</sub>.

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- NO<sub>x</sub>- Use of DLN burners and employment of SCR with a controlled rate of 3.0 ppmvd at 15% oxygen (based on a 3 hour block averaging period).
- CO- Use of good combustion practices with a rate of 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) without duct firing and 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) with duct firing.
- VOC- Use of efficient combustion technology in the operation of the turbine.
- SO<sub>2</sub>- Burning natural gas in an efficient combustion turbine and burning low sulfur fuel.
- H<sub>2</sub>SO<sub>4</sub>- Burning natural gas in an efficient combustion turbine.

- 2.e** The requirements of this rule are equivalent to the NO<sub>x</sub>, SO<sub>2</sub> and PM/PM<sub>10</sub> emissions per 40 CFR 52.21 and OAC rule 3745-31-(10) through (20).

**II. Operational Restrictions**

1. The permittee shall burn only natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100 standard cubic feet.
2. Startup shall be defined as the period between when the combustion turbines is initially started until the combustion turbine achieves combustion operational Mode 6. Shutdown shall be defined as the period beginning when the combustion turbine leaves operational Mode 6 and ending when combustion has ceased. Mode 6 is defined by the manufacturer as the low emissions mode during which all 6 of the burner nozzles are in use, burning a lean premixed gas for steady-state operation (i.e., in compliance with the NO<sub>x</sub> and CO lbs/hr emission limitations listed in term A.I.1). The continuous emission monitoring system will indicate and record the combustion turbine operational mode, including when the emissions unit is shutdown and when operating in start-up and shutdown modes. This system will also be used to demonstrate compliance with the NO<sub>x</sub> and CO emissions limitations during steady-state operation (Mode 6) and startups/shutdowns.

Startups shall not exceed 250 minutes in duration and shutdowns shall not exceed 120 minutes in duration. The total of all start-ups and shutdowns shall be limited to 260 cycles (each cycle consists of one start-up and one shutdown) per year.

Each startup and shutdown shall be limited to the following:

<u>Pollutant</u>	<u>Maximum Emission Rate (lbs/hr per turbine)</u>
NO <sub>x</sub>	400
CO	1,658
VOC	94

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Compliance with the above CO and NO<sub>x</sub> lbs/hour startup and shutdown emission limitations will be demonstrated using the continuous emissions monitoring system based on a 1 hour block average. Compliance with the VOC lbs/hour startup and shutdown emission limitations will be demonstrated through the record keeping required in section A.III. of this permit.

3. Except during periods of startup, the SCR shall be in operation at all times including periods of shutdown mode of the unit.
4. The maximum annual hours of operation of the duct burners for this emission unit shall not exceed 5,500 hours, based upon a rolling 12 month summation.

To ensure enforceability during the first 12 calendar months following the startup of this emissions unit, the permittee shall not exceed the monthly hours of operation restrictions specified in the following table:

Month	Hours of Operation
1	800
1-2	1600
1-3	2400
1-4	3200
1-5	4000
1-6	4800
1-7	5500
1-8	5500
1-9	5500
1-10	5500
1-11	5500
1-12	5500

After the first 12 calendar months following the startup of emission unit P001, compliance with the annual hours of operation restriction shall be based on a rolling, 12-month summation.

### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for this emission unit:
  - a. the natural gas usage rate (in standard cubic feet).
  - b. the hours of operation of the combustion turbine.

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- c. the hours of operation of the duct burner.

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- d. During the first 12 calendar months of operation, records of the cumulative operating hours of the duct burner.
  - e. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours of the duct burner.
  - f. Number of start-ups, and the duration, in minutes, of each start-up.
  - g. Number of shutdowns, and the duration, in minutes, of each shutdown.
  - h. The total number of start-up/shutdown cycles.
  - i. The VOC emissions for each start-up/shutdown event, in tons, by using the emissions factor of 94 pounds per hour during startup and shutdown;
  - j. The total VOC emissions, in tons, not including start-up/shutdown emissions.
  - k. The total NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - l. The total CO emissions, in tons, including start-up/shutdown emissions.
  - m. The total VOC emissions, in tons, including start-up/shutdown emissions (i.e., i+j).
  - n. The total SO<sub>2</sub>, PM/PM<sub>10</sub>, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions, in pounds.
  - o. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - p. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the total CO emissions, in tons, including start-up/shutdown emissions.
  - q. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the VOC emissions, in tons, including start-up/shutdown emissions.
  - r. Beginning after the first 12 calendar months of operation, the rolling, 12-month summations of the SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub> and PM/PM<sub>10</sub> emissions, in tons.
2. The permittee shall install, certify, operate and maintain equipment to continuously monitor\* and record NO<sub>x</sub>, CO and O<sub>2</sub> from this emissions unit in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in

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40 CFR Part 60.13 and/or 40 CFR Part 75, or as approved by the Ohio EPA, Central Office.

The permittee shall maintain records of all data obtained by the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring system including, but not limited to, parts per million NO<sub>x</sub>, CO and O<sub>2</sub> on an instantaneous (one-minute) basis and emissions of NO<sub>x</sub>, CO and O<sub>2</sub> in units established in this permit in the appropriate averaging period during Mode 6, and including start-up and shutdown, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

In conjunction with the operation of the NO<sub>x</sub> and CO CEMs, the permittee shall install, operate and maintain a system to monitor when the duct burners are being fired. The data measured by this system shall be compiled with the data recorded by the NO<sub>x</sub> and CO CEMs.

\* The installation and operation of systems to continuously monitor and record emissions of NO<sub>x</sub> may be performed in lieu of monitoring the nitrogen content of the fuels being fired in the turbine, as required by 40 CFR 60.334(b).

3. The permittee shall install, operate and maintain equipment to continuously monitor and record the actual fuel flow to this emissions unit when the emissions unit is in operation. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 75. If the fuel flow monitoring and/or recording equipment is (are) not in service when the emissions unit is in operation, the permittee shall comply with the appropriate missing data procedures specified in 40 CFR Part 75 and/or section A.VI.4. of this permit.
4. The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the combustion turbine and duct burner. In accordance with 40 CFR 60, Subpart GG, section 60.334 (h)(3), the permittee has demonstrated that the gaseous fuel meets the definition of natural gas in 40 CFR 60 Subpart GG, section 60.331(u). Therefore, fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D. Per 40 CFR Part 75, Appendix D section 2.3.1.4, the permittee has demonstrated that the gaseous fuel is pipeline natural gas. Therefore, ongoing sampling of the of the fuel's sulfur content is required annually and whenever the fuel supply sources change.
5. The permittee shall determine the hourly heat input rate to the combustion turbine and duct burner from the fuel flow rate as determined in term A. III.3. and gross calorific value as determined in term A.III.4. The heat input rate shall be calculated in accordance with the procedures in section 5 of 40 CFR Part 75, Appendix F.
6. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

#### **IV. Reporting Requirements**

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1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurred.

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2. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. During the first 12 calendar months of operation, all exceedances of the cumulative duct burner operating hours limitations.
  - b. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month duct burner operating hours limitation.
  - c. Any record which shows that the sulfur content of the natural gas exceeded 2 grains per 100 standard cubic feet.
  - d. Any record which shows that the start-up duration exceeded 250 minutes.
  - e. Any record which shows that the shutdown duration exceeded 120 minutes.
  - f. Any record which shows that the total number of start-up/shutdown cycles exceeded 260.
  - g. All exceedances of the NO<sub>x</sub>, CO, and/or VOC start-up limitations.
  - h. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and/or PM/PM<sub>10</sub> emission limitations.

The quarterly deviation reports are due by the dates described in Part 1 - General Terms and Conditions of this permit under section (A)(2).

3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.03(l) and 40 CFR Part 60.7 and 60.13 (h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO<sub>x</sub> or CO values, as recorded by the CEMs in excess of the applicable limits specified in the terms and conditions of this permit. These reports shall also contain the total NO<sub>x</sub> and CO emissions for the calendar quarter (in tons), including all data collected during start-up and shutdown periods and all data generated pursuant to the missing data procedures specified in 40 CFR Part 75 and/or the approved data substitution protocol required by section A.VI.4 of this permit.

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting any continuous NO<sub>x</sub>, CO, or O<sub>2</sub> monitoring system down time while the emission unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emission unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time

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period of emission unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emission 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 emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emission unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emission unit and the total operating time of the analyzer while the emission unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 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 Portsmouth Local Air Agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

4. In lieu of the excess emissions reports required under 40 CFR Part 60.334, the permittee shall submit excess emissions reports for this emissions unit in accordance with this permit.
5. The permittee shall submit annual reports that specify the total NO<sub>x</sub>, CO, PM/PM<sub>10</sub>, SO<sub>2</sub>, VOC, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions from this emissions unit for the previous calendar year. The reports shall be submitted by January 31 of each year.
6. This emission unit is subject to the applicable provisions of Subpart Da and GG of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and,
- d. date of performance testing (if required, at least 30 days prior to testing).

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Reports are to be sent to :

Ohio Environmental Protection Agency

DAPC - Permit Management Unit

P.O. Box 163669

Columbus, Ohio 43216-3669

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and

Portsmouth Local Air Agency  
605 Washington Street, Third Floor  
Portsmouth, Ohio 45662

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emission unit.
  - b. The emission testing shall be conducted to demonstrate compliance with the NO<sub>x</sub> and CO outlet concentration, and the mass emission limitations for NO<sub>x</sub>\*, CO, Formaldehyde, VOC, PM/PM<sub>10</sub> and ammonia.
  - c. The following test method(s) shall be employed to demonstrate compliance with the above emission limitations: for NO<sub>x</sub>, Method 20 of 40 CFR Part 60, Appendix A; for PM/PM<sub>10</sub>, Method 5 of 40 CFR Part 60, Appendix A; for Formaldehyde, SW-846 Method 0011 or EPA Method 316; for VOC, Method 25 of 40 CFR Part 60, Appendix A; for CO Method 10 of 40 CFR Part 60, Appendix A and for ammonia, CTM-027. Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. The testing shall be conducted while the emission unit is operating at or near its maximum capacity with and without duct burner firing, unless otherwise specified or approved by Ohio EPA or local air agency.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emission unit operating parameters, the times(s) and date(s) of the test(s), and the person(s) who will be conducting these test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).
  - f. Personnel from Portsmouth Local Air Agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid

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characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Portsmouth Local Air Agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Portsmouth Local Air Agency.
  - \* In lieu of the test methods and procedures required under 40 CFR Part 60.335, the permittee shall follow the testing requirements in accordance with this permit.
2. Within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2,3, 4 and 6\* and/or 40 CFR Part 75, unless an extension is granted by the Ohio EPA.. Personnel from the Portsmouth Local Air Agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, copies of all test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Portsmouth Local Air Agency and the Ohio EPA, Central Office. Certification of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3, 4 and 6\* and/or 40 CFR Part 75.
- \* In lieu of monitoring the stack gas flow rate as required by 40 CFR Part 60, Appendix B - Performance Specification 6, the permittee shall use certified NO<sub>x</sub> CEMs in conjunction with a fuel flow monitor as described in 40 CFR Part 75, and certified CO CEMs in conjunction with a fuel flow monitor (in a manner similar to the used for NO<sub>x</sub>) to meet these requirements. The relative accuracy requirements of Performance Specification 6 shall apply.
3. 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<sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15% Oxygen (based on 3 hr block avg.)  
21.1 lb/hr without duct firing  
27.8 lb/hr with duct firing  
121.2 TPY, based on a 12 month rolling summation, including startup and shutdown emissions.

Applicable Compliance Method:

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Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those limitations, as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as, start up and shutdown operations shall be demonstrated by the use of the CEM and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

b. Emission Limitation:

PM/PM10 emissions shall not exceed  
15 lb/hr without duct burner firing  
23.3 lb/hr with duct burner firing  
88.53 TPY, based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

c. Emission Limitation:

SO2 emissions shall not exceed  
11 lb/hr without duct burner firing  
14.4 lb/hr with duct burner firing  
52.82 TPY, based on a 12 month rolling summation.

Applicable Compliance Methods:

Compliance with the lb/hr emission limitation shall be demonstrated by the recordkeeping required in section A.III.. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

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TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

If required, the permittee shall demonstrate compliance with the lb/hr emission limitation by emission testing in accordance with approved USEPA test methods.

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- d. Emission Limitation:  
VOC emissions shall not exceed  
3.2 lb/hr without duct burner firing  
20.4 lb/hr with duct burner firing  
65.1 TPY, based on a 12 month rolling summation,  
including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions. The annual emissions associated with start-up and shutdown shall be determined by record keeping required in section A.III.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

- e. Emission Limitation:  
  
CO emissions shall not exceed  
6 ppmvd at 15 % Oxygen without duct burner firing (based on 24 hr block avg.)  
9 ppmvd at 15 % Oxygen with duct burner firing (based on 24 hr block avg.)  
25.7 lb/hr without duct burner firing  
50.3 lb/hr with duct burner firing  
278.0 TPY, based on a 12 month rolling summation, including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as startup and shutdown operations shall be demonstrated by the use of the CEM. and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

- f. Emission Limitation:

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ammonia (NH<sub>3</sub>) emissions shall not exceed  
28 lb/hr without duct burner firing

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37.8 lb/hr with duct burner firing  
140.01 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

g. Emission Limitation:

Formaldehyde emission shall not exceed  
0.45 lb/hr without duct burner firing  
0.494 lb/hr with duct burner firing  
2.09 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by multiplying the hourly emission rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

h. Emission Limitation:

Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) emissions shall not exceed  
1.68 lb/hr without duct burner firing  
2.2 lb/hr with duct burner firing  
8.07 TPY based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the emission factor of 0.0009 lb/MMBTU (supplied by permittee) by the maximum heat input. If required, the permittee shall demonstrate compliance by emission testing in accordance with approved USEPA test methods. Compliance with the annual emission

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limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

i. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10 percent opacity as a six minute average.

Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(1) determined according to Method 9 of 40 CFR Part 60, Appendix A.

## VI. Miscellaneous Requirements

1. In accordance with good engineering practices, the SCR unit on emissions unit P001 shall be installed, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee. The permittee shall maintain on site a copy of the operation & maintenance manual, as provided by the manufacturer.
2. Prior to the installation of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2,3,4 and 6 for approval by the Ohio EPA, Central Office.
3. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system designed to ensure continuous valid and representative readings of NO<sub>x</sub>, CO, and O<sub>2</sub> emissions in units of the applicable standard. The plan shall follow the requirements of the appropriate sections of 40 CFR Part 60, Appendix F or as approved by the Ohio EPA, Central Office and 40 CFR Part 75, Appendix B. The quality assurance/ quality control plan and logbook dedicated to the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system must be kept on site and available for inspection during regular office hours.
4. Within 60 days of the effective date of this permit, the permittee shall submit a data substitution protocol for the continuous emissions monitoring system to the Ohio EPA, Central Office. Upon approval of the protocol, the permittee will commence configuring the Data Acquisition Handling System (DAHS) in accordance with the approved protocol. The DAHS modifications will be implemented and active within 120 days of protocol approval. The permittee may request an extension to the implementation requirement subject to approval by the Ohio EPA, Central Office.

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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>
P001 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 1 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	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>
P002 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 2 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	40 CFR 52.21 and OAC rule 3745-31-(10) through (20)
<b>modification to remove non applicable rule</b>	

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OAC rule 3745-17-07(A)

40 CFR Part 75

OAC rule 3745-103

OAC rule 3745-14

OAC rule 3745-31-05(C)

40 CFR part 60, Subpart GG

40 CFR part 60, Subpart Da

OAC rule 3745-18-06(F)

OAC rule 3745-31-05(A)(3)

OAC rule 3745-17-11(B)(4)

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<u>Applicable Emissions Limitations/Control Measures</u>		
EMISSION LIMITS WITHOUT DUCT BURNER FIRING	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)	month rolling average 88.53 tpy of PM/PM <sub>10</sub> , based on a 12 month rolling average
nitrogen oxides (NOx) emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	NOx emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	278.0 tpy of CO, based on a 12 month rolling average.
NOx emissions shall not exceed 21.1 lb/hr.	NOx emissions shall not exceed 27.8 lb/hr.	65.1 tpy of VOC, based on a 12 month rolling average.
particulate (PM/PM <sub>10</sub> ) emissions shall not exceed 15 lb/hr.	PM/PM <sub>10</sub> emissions shall not exceed 23.3 lb/hr.	8.07 tpy of H <sub>2</sub> SO <sub>4</sub> , based on a 12 month rolling average
sulfur dioxide (SO <sub>2</sub> ) emission shall not exceed 11 lb/hr.	SO <sub>2</sub> emissions shall not exceed 14.4 lb/hr.	see . A.I.2.d below.
carbon monoxide (CO) emissions shall not exceed 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	CO emissions shall not exceed 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, OAC rule 3745-18-06(F), OAC rule 3745-17-11 (B)(4), OAC rule 3745-17-07(A), 40 CFR 52.21, and OAC rule 3745-31-(13) through (20).
CO emissions shall not exceed 25.7 lb/hr.	CO emissions shall not exceed 50.3 lb/hr.	EMISSION LIMITS WITHOUT DUCT BURNER FIRING
volatile organic compounds (VOC) emissions shall not exceed 3.2 lb/hr .	VOC emissions shall not exceed 20.4 lb/hr.	ammonia (NH <sub>3</sub> ) emissions shall not exceed 28 lb/hr.
sulfuric acid (H <sub>2</sub> SO <sub>4</sub> ) emissions shall not exceed 1.68 lb/hr.	H <sub>2</sub> SO <sub>4</sub> emissions shall not exceed 2.2 lb/hr.	formaldehyde emissions shall not exceed 0.45 lb/hr.
	TOTAL TONS PER YEAR (including 3,260 hours per year without duct burners, 5,500 hours per year with duct burners, startups and shutdowns)	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)
	121.2 tpy of NOx, based on a 12 month rolling average.	NH <sub>3</sub> emissions shall not exceed 37.8 lb/hr.
	52.82 tpy of SO <sub>2</sub> , based on a 12	formaldehyde emissions shall not exceed 0.494 lb/hr.

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TOTAL TONS PER YEAR  
(including 3,260 hours per  
year without duct burners,  
5,500 hours per year with  
duct burners, startups and  
shutdowns)

140.01 tpy of NH<sub>3</sub>

2.09 tpy of formaldehyde

Visible particulate emissions  
shall not exceed 10 %  
opacity as a six minute  
average.

see A.I.2.e. below.

see A.II.4. below.

see A.I.2.b. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

.

See A.I.2.c. below.

See A.I.2.c. below

See Part II Section A.IV.

## **2. Additional Terms and Conditions**

**2.a** The emissions limit based on this applicable rule is equivalent to or less stringent than the

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limit established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20).

- 2.b** The emission limits based on this applicable rule are equivalent to or less stringent than the limits established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20). Except as provided for in the terms and condition of this permit, the permittee is not exempt from meeting any additional requirements of 40 CFR Part 60, Subpart GG.
- 2.c** The permittee shall ensure that any effected emissions unit complies with the requirements of 40 CFR Part 75. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.
- 2.d** The permittee is required to perform a Best Available Control Technology (BACT) review for NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, H<sub>2</sub>SO<sub>4</sub>, and VOC. The emissions limits based on the BACT requirements are listed under 40 CFR 52.21 and OAC rule 3745-31-(13) through(20) above. The following determinations have been made for each pollutant:

  - PM- Burning natural gas in an efficient combustion turbine. For this permit, it is assumed that all PM emissions are PM<sub>10</sub>.

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- NOx- Use of DLN burners and employment of SCR with a controlled rate of 3.0 ppmvd at 15% oxygen (based on a 3 hour block averaging period).
- CO- Use of good combustion practices with a rate of 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) without duct firing and 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) with duct firing.
- VOC- Use of efficient combustion technology in the operation of the turbine.
- SO<sub>2</sub>- Burning natural gas in an efficient combustion turbine and burning low sulfur fuel.
- H<sub>2</sub>SO<sub>4</sub>- Burning natural gas in an efficient combustion turbine.

2.e The requirements of this rule are equivalent to the NOx, SO2 and PM/PM<sub>10</sub> emissions per 40 CFR 52.21 and OAC rule 3745-31-(10) through (20).

**II. Operational Restrictions**

1. The permittee shall burn only natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100 standard cubic feet.
2. Startup shall be defined as the period between when the combustion turbine is initially started until the combustion turbine achieves combustion operational Mode 6. Shutdown shall be defined as the period beginning when the combustion turbine leaves operational Mode 6 and ending when combustion has ceased. Mode 6 is defined by the manufacturer as the low emissions mode during which all 6 of the burner nozzles are in use, burning a lean premixed gas for steady-state operation (i.e., in compliance with the NOx and CO lbs/hr emission limitations listed in term A.I.1). The continuous emission monitoring system will indicate and record the combustion turbine operational mode, including when the emissions unit is shutdown and when operating in start-up and shutdown modes. This system will also be used to demonstrate compliance with the NOx and CO emissions limitations during steady state operation (Mode 6) and startups/shutdowns.

Startups shall not exceed 250 minutes in duration and shutdowns shall not exceed 120 minutes in duration. The total of all start-ups and shutdowns per turbine shall be limited to 260 cycles (each cycle consists of one start-up and one shutdown) per year.

Each startup and shutdown shall be limited to the following:

<u>Pollutant</u>	<u>Maximum Emission Rate (lbs/hr per turbine)</u>
NOx	400
CO	1,658
VOC	94

Compliance with the above CO and NOx lbs/hour startup and shutdown emission limitations will be demonstrated using the continuous emissions monitoring system based on a 1 hour

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block average. Compliance with the VOC lbs/hour startup and shutdown emission limitations will be demonstrated through the record keeping required in section A.III. of this permit.

3. Except during periods of startup, the SCR shall be in operation at all times including periods of shutdown mode of the unit.
4. The maximum annual hours of operation of the duct burners for this emission unit shall not exceed 5,500 hours, based upon a rolling 12 month summation.

To ensure enforceability during the first 12 calendar months following the startup of this emissions unit, the permittee shall not exceed the monthly hours of operation restrictions specified in the following table:

Month	Hours of Operation
1	800
1-2	1600
1-3	2400
1-4	3200
1-5	4000
1-6	4800
1-7	5500
1-8	5500
1-9	5500
1-10	5500
1-11	5500
1-12	5500

After the first 12 calendar months following the startup of emission unit P001, compliance with the annual hours of operation restriction shall be based on a rolling, 12-month summation.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall maintain monthly records of the following information for this emission unit:
  - a. the natural gas usage rate (in standard cubic feet).
  - b. the hours of operation of the combustion turbine.
  - c. the hours of operation of the duct burner.

- d. During the first 12 calendar months of operation, records of the cumulative operating hours of the duct burner.
  - e. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours of the duct burner.
  - f. Number of start-ups, and the duration, in minutes, of each start-up.
  - g. Number of shutdowns, and the duration, in minutes, of each shutdown.
  - h. The total number of start-up/shutdown cycles.
  - i. The VOC emissions for each start-up/shutdown event, in tons, by using the emissions factor of 94 pounds per hour during startup and shutdown;
  - j. The total VOC emissions, in tons, not including start-up/shutdown emissions.
  - k. The total NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - l. The total CO emissions, in tons, including start-up/shutdown emissions.
  - m. The total VOC emissions, in tons, including start-up/shutdown emissions (i.e., i+j).
  - n. The total SO<sub>2</sub>, PM/PM<sub>10</sub>, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions, in pounds.
  - o. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - p. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the total CO emissions, in tons, including start-up/shutdown emissions.
  - q. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the VOC emissions, in tons, including start-up/shutdown emissions.
  - r. Beginning after the first 12 calendar months of operation, the rolling, 12-month summations of the SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub> and PM/PM<sub>10</sub> emissions, in tons.
2. The permittee shall install, certify, operate and maintain equipment to continuously monitor\* and record NO<sub>x</sub>, CO and O<sub>2</sub> from this emissions unit in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 and 40 CFR Part 75, or as approved by the Ohio EPA, Central Office..

The permittee shall maintain records of all data obtained by the continuous NO<sub>x</sub>, CO and O<sub>2</sub>

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monitoring system including, but not limited to, parts per million NO<sub>x</sub>, CO and O<sub>2</sub> on an instantaneous (one-minute) basis, emissions of NO<sub>x</sub>, CO and O<sub>2</sub> in units established in this permit in the appropriate averaging period, during Mode 6, and including start-up and shutdown, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

In conjunction with the operation of the NO<sub>x</sub> and CO CEMs, the permittee shall install, operate and maintain a system to monitor when the duct burners are being fired. The data measured by this system shall be compiled with the data recorded by the NO<sub>x</sub> and CO CEMs.

\* The installation and operation of systems to continuously monitor and record emissions of NO<sub>x</sub> may be performed in lieu of monitoring the nitrogen content of the fuels being fired in the turbine, as required by 40 CFR 60.334(b).

3. The permittee shall install, operate and maintain equipment to continuously monitor and record the actual fuel flow to this emissions unit when the emissions unit is in operation. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 75. If the fuel flow monitoring and/or recording equipment is (are) not in service when the emissions unit is in operation, the permittee shall comply with the appropriate missing data procedures specified in 40 CFR Part 75 and/ or section A.VI.4 of this permit.
4. The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the combustion turbine and duct burner. In accordance with 40 CFR 60, Subpart GG, section 60.334 (h)(3), the permittee has demonstrated that the gaseous fuel meets the definition of natural gas in 40 CFR 60 Subpart GG, section 60.331(u). Therefore, fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D. Per 40 CFR Part 75, Appendix D section 2.3.1.4, the permittee has demonstrated that the gaseous fuel is pipeline natural gas. Therefore, ongoing sampling of the of the fuel's sulfur content is required annually and whenever the fuel supply sources change.
5. The permittee shall determine the hourly heat input rate to the combustion turbine and duct burner from the fuel flow rate as determined in term A. III.3. and gross calorific value as determined in term A.III.4. The heat input rate shall be calculated in accordance with the procedures in section 5 of 40 CFR Part 75, Appendix F.
6. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

**IV. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emission unit. Each report shall be submitted within 30 days

after the deviation occurred.

2. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. During the first 12 calendar months of operation, all exceedances of the cumulative duct burner operating hours limitations.
  - b. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month duct burner operating hours limitation.
  - c. Any record which shows that the sulfur content of the natural gas exceeded 2 grains per 100 standard cubic feet.
  - d. Any record which shows that the start-up duration exceeded 250 minutes.
  - e. Any record which shows that the shutdown duration exceeded 120 minutes.
  - f. Any record which shows that the total number of start-up/shutdown cycles exceeded 260.
  - g. All exceedances of the NO<sub>x</sub>, CO, and/or VOC start-up limitations.
  - h. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and/or PM/PM10 emission limitations.

The quarterly deviation reports are due by the dates described in Part 1 - General Terms and Conditions of this permit under section (A)(2).

3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.03(l) and 40 CFR Part 60.7 and 60.13 (h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO<sub>x</sub> or CO values, as recorded by the CEMs in excess of the applicable limits specified in the terms and conditions of this permit. These reports shall also contain the total NO<sub>x</sub> and CO emissions for the calendar quarter (in tons), including all data collected during start-up and shutdown periods and all data generated pursuant to the missing data procedures specified in 40 CFR Part 75 and/or the approved data substitution protocol required by section A.VI.4 of this permit.

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting any continuous NO<sub>x</sub>, CO, or O<sub>2</sub> monitoring system down time while the emission unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emission unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emission unit and control equipment malfunctions. The total operating time of the

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emissions unit and the total operating time of the analyzer while the emission 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 emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emission unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emission unit and the total operating time of the analyzer while the emission unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 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 Portsmouth Local Air Agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

4. In lieu of the excess emissions reports required under 40 CFR Part 60.334, the permittee shall submit excess emissions reports for this emissions unit in accordance with this permit.
5. The permittee shall submit annual reports that specify the total NO<sub>x</sub>, CO, PM/PM10, SO<sub>2</sub>, VOC, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions from this emissions unit for the previous calendar year. The reports shall be submitted by January 31 of each year.
6. This emission unit is subject to the applicable provisions of Subpart Da and GG of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and,
- d. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to :

Ohio Environmental Protection Agency  
DAPC - Permit Management Unit  
P.O. Box 163669  
Columbus, Ohio 43216-3669

and

Portsmouth Local Air Agency  
605 Washington Street, Third Floor  
Portsmouth, Ohio 45662

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**V. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emission unit.
  - b. The emission testing shall be conducted to demonstrate compliance with the NO<sub>x</sub> and CO outlet concentration, and the mass emission limitations for NO<sub>x</sub>\*, CO, Formaldehyde, VOC, PM/PM<sub>10</sub> and ammonia.
  - c. The following test method(s) shall be employed to demonstrate compliance with the above emission limitations: for NO<sub>x</sub>, Method 20 of 40 CFR Part 60, Appendix A; for PM/PM<sub>10</sub>, Method 5 of 40 CFR Part 60, Appendix A; for Formaldehyde, SW-846 Method 0011 or EPA Method 316; for VOC, Method 25 of 40 CFR Part 60, Appendix A; for CO Method 10 of 40 CFR Part 60, Appendix A and for ammonia, CTM-027. Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. The testing shall be conducted while the emission unit is operating at or near its maximum capacity with and without duct burner firing, unless otherwise specified or approved by Ohio EPA or local air agency.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emission unit operating parameters, the times(s) and date(s) of the test(s), and the person(s) who will be conducting these test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).
  - f. Personnel from Portsmouth Local Air Agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
  - g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Portsmouth Local Air Agency within 30 days following completion of the test(s). The permittee may request

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additional time for the submittal of the written report, where warranted, with prior approval from the Portsmouth Local Air Agency.

\* In lieu of the test methods and procedures required under 40 CFR Part 60.335, the permittee shall follow the testing requirements in accordance with this permit.

2. Within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3 and 6\* and/or 40 CFR Part 75, unless an extension is granted by the Ohio EPA. Personnel from the Portsmouth Local Air Agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, copies of all test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Portsmouth Local Air Agency and the Ohio EPA, Central Office. Certification of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3, 4 and 6\* and/or 40 CFR Part 75.

\* In lieu of monitoring the stack gas flow rate as required by 40 CFR Part 60, Appendix B - Performance Specification 6, the permittee shall use certified NO<sub>x</sub> CEMs in conjunction with a fuel flow monitor as described in 40 CFR Part 75, and certified CO CEMs in conjunction with a fuel flow monitor (in a manner similar to the used for NO<sub>x</sub>) to meet these requirements. The relative accuracy requirements of Performance Specification 6 shall apply.

3. 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<sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15% Oxygen (based on 3 hr block avg.)  
21.1 lb/hr without duct firing  
27.8 lb/hr with duct firing  
121.2 TPY, based on a 12 month rolling summation, including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those limitations, as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as, start up and shutdown operations shall be demonstrated by the use of the CEM and the records required pursuant

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to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

b. Emission Limitation:

PM/PM10 emissions shall not exceed  
15 lb/hr without duct burner firing  
23.3 lb/hr with duct burner firing  
88.53 TPY based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

c. Emission Limitation:

SO2 emissions shall not exceed  
11 lb/hr without duct burner firing  
14.4 lb/hr with duct burner firing  
52.82 TPY based on a 12 month rolling summation

Applicable Compliance Methods:

Compliance with the lb/hr emission limitation shall be demonstrated by the recordkeeping required in section A.III.. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

If required, the permittee shall demonstrate compliance with the lb/hr emission limitation by emission testing in accordance with approved USEPA test methods.

d. Emission Limitation:

VOC emissions shall not exceed  
3.2 lb/hr without duct burner firing  
20.4 lb/hr with duct burner firing  
65.1 TPY, based on a 12 month rolling summation,  
including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions. The annual emissions associated with start-up and shutdown shall be determined by record keeping required in section A.III.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

e. Emission Limitation:

CO emissions shall not exceed  
6 ppmvd at 15 % Oxygen without duct burner firing (based on 24 hr block avg.)  
9 ppmvd at 15 % Oxygen with duct burner firing (based on 24 hr block avg.)  
25.7 lb/hr without duct burner firing  
50.3 lb/hr with duct burner firing  
278.0 TPY based on a 12 month rolling summation, including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as startup and shutdown operations shall be demonstrated by the use of the CEM. and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

f. Emission Limitation:

ammonia (NH3) emissions shall not exceed  
2 lb/hr without duct burner firing

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37.8 lb/hr with duct burner firing  
140.01 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by multiplying the hourly emissions rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

g. Emission Limitation:

Formaldehyde emission shall not exceed  
0.45 lb/hr without duct burner firing  
0.494 lb/hr with duct burner firing  
2.09 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by multiplying the hourly emission rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

h. Emission Limitation:

Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) emissions shall not exceed  
1.68 lb/hr without duct burner firing  
2.2 lb/hr with duct burner firing  
8.07 TPY based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the emission factor of 0.0009 lb/MMBTU (supplied by permittee) by the maximum heat input. If required, the permittee shall demonstrate compliance by emission testing in accordance with approved USEPA test methods. Compliance with the annual emission limitation shall

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be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

i. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10 percent opacity as a six minute average.

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Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(1) determined according to Method 9 of 40 CFR Part 60, Appendix A.

## VI. Miscellaneous Requirements

1. In accordance with good engineering practices, the SCR unit on emissions unit P002 shall be installed, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee. The permittee shall maintain on site a copy of the operation & maintenance manual, as provided by the manufacturer.
2. Prior to the installation of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2,3,4 and 6 for approval by the Ohio EPA, Central Office.
3. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system designed to ensure continuous valid and representative readings of NO<sub>x</sub>, CO, and O<sub>2</sub> emissions in units of the applicable standard. The plan shall follow the requirements of the appropriate sections of 40 CFR Part 60, Appendix F or as approved by the Ohio EPA, Central Office and 40 CFR Part 75, Appendix B. The quality assurance/ quality control plan and logbook dedicated to the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system must be kept on site and available for inspection during regular office hours.
4. Within 60 days of the effective date of this permit, the permittee shall submit a data substitution protocol for the continuous emissions monitoring system to the Ohio EPA, Central Office. Upon approval of the protocol, the permittee will commence configuring the Data Acquisition Handling System (DAHS) in accordance with the approved protocol. The DAHS modifications will be implemented and active within 120 days of protocol approval. The permittee may request an extension to the implementation requirement subject to approval by the Ohio EPA, Central Office.

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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>
P002 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 2 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	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>
P003 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 3 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	40 CFR 52.21 and OAC rule 3745-31-(10) through (20)
<b>modification to remove non applicable rule</b>	

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OAC rule 3745-17-07(A)

40 CFR Part 75

OAC rule 3745-103

OAC rule 3745-14

OAC rule 3745-31-05(A)(3)

OAC rule 3745-31-05(C)

40 CFR part 60, Subpart GG

40 CFR part 60, Subpart Da

OAC rule 3745-18-06(F)

OAC rule 3745-17-11(B)(4)

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<u>Applicable Emissions Limitations/Control Measures</u>		
EMISSION LIMITS WITHOUT DUCT BURNER FIRING	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)	month rolling average 88.53 tpy of PM/PM <sub>10</sub> , based on a 12 month rolling average
nitrogen oxides (NO <sub>x</sub> ) emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	NO <sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	278.0 tpy of CO, based on a 12 month rolling average.
NO <sub>x</sub> emissions shall not exceed 21.1 lb/hr.	NO <sub>x</sub> emissions shall not exceed 27.8 lb/hr.	65.1 tpy of VOC, based on a 12 month rolling average.
particulate (PM/PM <sub>10</sub> ) emissions shall not exceed 15 lb/hr.	PM/PM <sub>10</sub> emissions shall not exceed 23.3 lb/hr.	8.07 tpy of H <sub>2</sub> SO <sub>4</sub> , based on a 12 month rolling average
sulfur dioxide (SO <sub>2</sub> ) emission shall not exceed 11 lb/hr.	SO <sub>2</sub> emissions shall not exceed 14.4 lb/hr.	see A.I.2.d below.
carbon monoxide (CO) emissions shall not exceed 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	CO emissions shall not exceed 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, OAC rule 3745-18-06(F), OAC rule 3745-17-11 (B)(4), OAC rule 3745-17-07(A), 40 CFR 52.21, and OAC rule 3745-31-(10) through (20).
CO emissions shall not exceed 25.7 lb/hr.	CO emissions shall not exceed 50.3 lb/hr.	EMISSION LIMITS WITHOUT DUCT BURNER FIRING
volatile organic compounds (VOC) emissions shall not exceed 3.2 lb/hr .	VOC emissions shall not exceed 20.4 lb/hr.	ammonia (NH <sub>3</sub> ) emissions shall not exceed 28 lb/hr.
sulfuric acid (H <sub>2</sub> SO <sub>4</sub> ) emissions shall not exceed 1.68 lb/hr.	H <sub>2</sub> SO <sub>4</sub> emissions shall not exceed 2.2 lb/hr.	formaldehyde emissions shall not exceed 0.45 lb/hr.
	TOTAL TONS PER YEAR (including 3,260 hours per year without duct burners, 5,500 hours per year with duct burners, startups and shutdowns)	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)
	121.2 tpy of NO <sub>x</sub> , based on a 12 month rolling average.	NH <sub>3</sub> emissions shall not exceed 37.8 lb/hr.
	52.82 tpy of SO <sub>2</sub> , based on a 12	formaldehyde emissions shall not exceed 0.494 lb/hr.

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TOTAL TONS PER YEAR  
(including 3,260 hours per  
year without duct burners,  
5,500 hours per year with  
duct burners, startups and  
shutdowns)

140.01 tpy of NH3

2.09 tpy of formaldehyde

Visible particulate emissions  
shall not exceed 10 %  
opacity as a six minute  
average.

see . A.I.2.e below.

see A.II.4. below.

see A.I.2.b. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

.

See A.I.2.c. below.

See A.I.2.c. below.

See Part II Section A.IV.

## 2. Additional Terms and Conditions

**2.a** The emissions limit based on this applicable rule is equivalent to or less stringent than the

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limit established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20)

- 2.b** The emission limits based on this applicable rule are equivalent to or less stringent than the limits established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20). Except as provided for in the terms and condition of this permit, the permittee is not exempt from meeting any additional requirements of 40 CFR Part 60, Subpart GG.
- 2.c** The permittee shall ensure that any effected emissions unit complies with the requirements of 40 CFR Part 75. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.
- 2.d** The permittee is required to perform a Best Available Control Technology (BACT) review for NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, H<sub>2</sub>SO<sub>4</sub>, and VOC. The emissions limits based on the BACT requirements are listed under 40 CFR 52.21 and OAC rule 3745-31-(13) through(20) above. The following determinations have been made for each pollutant:

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- PM- Burning natural gas in an efficient combustion turbine. For this permit, it is assumed that all PM emissions are PM<sub>10</sub>.
- NOx- Use of DLN burners and employment of SCR with a controlled rate of 3.0 ppmvd at 15% oxygen (based on a 3 hour block averaging period).
- CO- Use of good combustion practices with a rate of 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) without duct firing and 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) with duct firing.
- VOC- Use of efficient combustion technology in the operation of the turbine.
- SO<sub>2</sub>- Burning natural gas in an efficient combustion turbine and burning low sulfur fuel.
- H<sub>2</sub>SO<sub>4</sub>- Burning natural gas in an efficient combustion turbine.

2.e The requirements of this rule are equivalent to the NOx, SO2 and PM/PM<sub>10</sub> emissions per 40 CFR 52.21 and OAC rule 3745-31-(10) through (20).

**II. Operational Restrictions**

1. The permittee shall burn only natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100 standard cubic feet.
2. Startup shall be defined as the period between when the combustion turbine is initially started until the combustion turbine achieves combustion operational Mode 6. Shutdown shall be defined as the period beginning when the combustion turbine leaves operational Mode 6 and ending when combustion has ceased. Mode 6 is defined by the manufacturer as the low emissions mode during which all 6 of the burner nozzles are in use, burning a lean premixed gas for steady-state operation (i.e., in compliance with the NOx and CO lbs/hr emission limitations listed in term A.I.1). The continuous emission monitoring system will indicate and record the combustion turbine operational mode, including when the emissions unit is shutdown and when operating in start-up and shutdown modes. This system will also be used to demonstrate compliance with the NOx and CO emissions limitations during steady state operation (Mode 6) and startups/shutdowns.

Startups shall not exceed 250 minutes in duration and shutdowns shall not exceed 120 minutes in duration. The total of all start-ups and shutdowns shall be limited to 260 cycles (each cycle consists of one start-up and one shutdown) per year.

Each startup and shutdown shall be limited to the following :

<u>Pollutant</u>	<u>Maximum Emission Rate (lbs/hr per turbine)</u>
NOx	400
CO	1,658
VOC	94

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Compliance with the above CO and NOx lbs/hour startup and shutdown emission limitations will be demonstrated using the continuous emissions monitoring system based on a 1 hour block average. Compliance with the VOC lbs/hour startup and shutdown emission limitations will be demonstrated through the record keeping required in section A.III. of this permit.

- 3. Except during periods of startup, the SCR shall be in operation at all times including periods of shutdown mode of the unit.
- 4. The maximum annual hours of operation of the duct burners for this emission unit shall not exceed 5,500 hours, based upon a rolling 12 month summation.

To ensure enforceability during the first 12 calendar months following the startup of this emissions unit, the permittee shall not exceed the monthly hours of operation restrictions specified in the following table:

Month	Hours of Operation
1	800
1-2	1600
1-3	2400
1-4	3200
1-5	4000
1-6	4800
1-7	5500
1-8	5500
1-9	5500
1-10	5500
1-11	5500
1-12	5500

After the first 12 calendar months following the startup of emission unit P001, compliance with the annual hours of operation restriction shall be based on a rolling, 12-month summation.

**III. Monitoring and/or Recordkeeping Requirements**

- 1. The permittee shall maintain monthly records of the following information for this emission unit:
  - a. the natural gas usage rate (in standard cubic feet).

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- b. the hours of operation of the combustion turbine.
- c. the hours of operation of the duct burner.

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- d. During the first 12 calendar months of operation, records of the cumulative operating hours of the duct burner.
  - e. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours of the duct burner.
  - f. Number of start-ups, and the duration, in minutes, of each start-up.
  - g. Number of shutdowns, and the duration, in minutes, of each shutdown.
  - h. The total number of start-up/shutdown cycles.
  - i. The VOC emissions for each start-up/shutdown event, in tons, by using the emissions factor of 94 pounds per hour during startup and shutdown;
  - j. The total VOC emissions, in tons, not including start-up/shutdown emissions.
  - k. The total NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - l. The total CO emissions, in tons, including start-up/shutdown emissions.
  - m. The total VOC emissions, in tons, including start-up/shutdown emissions (i.e., i+j).
  - n. The total SO<sub>2</sub>, PM/PM<sub>10</sub>, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions, in pounds.
  - o. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - p. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the total CO emissions, in tons, including start-up/shutdown emissions.
  - q. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the VOC emissions, in tons, including start-up/shutdown emissions.
  - r. Beginning after the first 12 calendar months of operation, the rolling, 12-month summations of the SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub> and PM/PM<sub>10</sub> emissions, in tons.
2. The permittee shall install, certify, operate and maintain equipment to continuously monitor\* and record NO<sub>x</sub>, CO and O<sub>2</sub> from this emissions unit in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in

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40 CFR Part 60.13 and 40 CFR Part 75, or as approved by the Ohio EPA, Central Office..

The permittee shall maintain records of all data obtained by the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring system including, but not limited to, parts per million NO<sub>x</sub>, CO and O<sub>2</sub> on an instantaneous (one-minute) basis, emissions of NO<sub>x</sub>, CO and O<sub>2</sub> in units established in this permit in the appropriate averaging period, during Mode 6, and including start-up and shutdown, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

In conjunction with the operation of the NO<sub>x</sub> and CO CEMs, the permittee shall install, operate and maintain a system to monitor when the duct burners are being fired. The data measured by this system shall be compiled with the data recorded by the NO<sub>x</sub> and CO CEMs.

\* The installation and operation of systems to continuously monitor and record emissions of NO<sub>x</sub> may be performed in lieu of monitoring the nitrogen content of the fuels being fired in the turbine, as required by 40 CFR 60.334(b).

3. The permittee shall install, operate and maintain equipment to continuously monitor and record the actual fuel flow to this emissions unit when the emissions unit is in operation. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 75. If the fuel flow monitoring and/or recording equipment is (are) not in service when the emissions unit is in operation, the permittee shall comply with the appropriate missing data procedures specified in 40 CFR Part 75 and/or section A.VI.4. of this permit.
4. The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the combustion turbine and duct burner. In accordance with 40 CFR 60, Subpart GG, section 60.334 (h)(3), the permittee has demonstrated that the gaseous fuel meets the definition of natural gas in 40 CFR 60 Subpart GG, section 60.331(u). Therefore, fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D. Per 40 CFR Part 75, Appendix D section 2.3.1.4, the permittee has demonstrated that the gaseous fuel is pipeline natural gas. Therefore, ongoing sampling of the of the fuel's sulfur content is required annually and whenever the fuel supply sources change.
5. The permittee shall determine the hourly heat input rate to the combustion turbine and duct burner from the fuel flow rate as determined in term A. III.3. and gross calorific value as determined in term A.III.4. The heat input rate shall be calculated in accordance with the procedures in section 5 of 40 CFR Part 75, Appendix F.
6. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

#### **IV. Reporting Requirements**

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1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurred.

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2. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. During the first 12 calendar months of operation, all exceedances of the cumulative duct burner operating hours limitations.
  - b. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month duct burner operating hours limitation.
  - c. Any record which shows that the sulfur content of the natural gas exceeded 2 grains per 100 standard cubic feet.
  - d. Any record which shows that the start-up duration exceeded 250 minutes.
  - e. Any record which shows that the shutdown duration exceeded 120 minutes.
  - f. Any record which shows that the total number of start-up/shutdown cycles exceeded 260.
  - g. All exceedances of the NO<sub>x</sub>, CO, and/or VOC start-up limitations.
  - h. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and/or PM/PM<sub>10</sub> emission limitations.

The quarterly deviation reports are due by the dates described in Part 1 - General Terms and Conditions of this permit under section (A)(2).

3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.03(l) and 40 CFR Part 60.7 and 60.13 (h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO<sub>x</sub> or CO values, as recorded by the CEMs in excess of the applicable limits specified in the terms and conditions of this permit. These reports shall also contain the total NO<sub>x</sub> and CO emissions for the calendar quarter (in tons), including all data collected during start-up and shutdown periods and all data generated pursuant to the missing data procedures specified in 40 CFR Part 75 and/or the approved data substitution protocol required by section A.VI.4 of this permit.

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting any continuous NO<sub>x</sub>, CO, or O<sub>2</sub> monitoring system down time while the emission unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emission unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time

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period of emission unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emission 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 emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emission unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emission unit and the total operating time of the analyzer while the emission unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 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 Portsmouth Local Air Agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

4. In lieu of the excess emissions reports required under 40 CFR Part 60.334, the permittee shall submit excess emissions reports for this emissions unit in accordance with this permit.
5. The permittee shall submit annual reports that specify the total NO<sub>x</sub>, CO, PM/PM10, SO<sub>2</sub>, VOC, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions from this emissions unit for the previous calendar year. The reports shall be submitted by January 31 of each year.
6. This emission unit is subject to the applicable provisions of Subpart Da and GG of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and,
- d. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to :

Ohio Environmental Protection Agency  
DAPC - Permit Management Unit  
P.O. Box 163669  
Columbus, Ohio 43216-3669

and

Portsmouth Local Air Agency  
605 Washington Street, Third Floor  
Portsmouth, Ohio 45662

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emission unit.
  - b. The emission testing shall be conducted to demonstrate compliance with the NO<sub>x</sub> and CO outlet concentration, and the mass emission limitations for NO<sub>x</sub>\*, CO, Formaldehyde, VOC, PM/PM<sub>10</sub> and ammonia.
  - c. The following test method(s) shall be employed to demonstrate compliance with the above emission limitations: for NO<sub>x</sub>, Method 20 of 40 CFR Part 60, Appendix A; for PM/PM<sub>10</sub>, Method 5 of 40 CFR Part 60, Appendix A; for Formaldehyde, SW-846 Method 0011 or EPA Method 316; for VOC, Method 25 of 40 CFR Part 60, Appendix A; for CO Method 10 of 40 CFR Part 60, Appendix A and for ammonia, CTM-027. Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. The testing shall be conducted while the emission unit is operating at or near its maximum capacity with and without duct burner firing, unless otherwise specified or approved by Ohio EPA or local air agency.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emission unit operating parameters, the times(s) and date(s) of the test(s), and the person(s) who will be conducting these test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).

- f. Personnel from Portsmouth Local Air Agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
  - g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Portsmouth Local Air Agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Portsmouth Local Air Agency.
    - \* In lieu of the test methods and procedures required under 40 CFR Part 60.335, the permittee shall follow the testing requirements in accordance with this permit.
2. Within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3 and 6\* and/or 40 CFR Part 75, unless an extension is granted by Ohio EPA.. Personnel from the Portsmouth Local Air Agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, copies of all test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Portsmouth Local Air Agency and the Ohio EPA, Central Office. Certification of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3, 4 and 6\* and/or 40 CFR Part 75.
- \* In lieu of monitoring the stack gas flow rate as required by 40 CFR Part 60, Appendix B - Performance Specification 6, the permittee shall use certified NO<sub>x</sub> CEMs in conjunction with a fuel flow monitor as described in 40 CFR Part 75, and certified CO CEMs in conjunction with a fuel flow monitor (in a manner similar to the used for NO<sub>x</sub>) to meet these requirements. The relative accuracy requirements of Performance Specification 6 shall apply.
3. 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<sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15% Oxygen (based on 3 hr block avg.)  
21.1 lb/hr without duct firing  
27.8 lb/hr with duct firing

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121.2 TPY, based on a 12 month rolling summation, .  
including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those limitations, as well as annual, including startup

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and shutdown, emission limitations during Mode 6 as well as, start up and shutdown operations shall be demonstrated by the use of the CEM and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

b. Emission Limitation:

PM/PM10 emissions shall not exceed  
15 lb/hr without duct burner firing  
23.3 lb/hr with duct burner firing  
88.53 TPY based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

c. Emission Limitation:

SO2 emissions shall not exceed  
11 lb/hr without duct burner firing  
14.4 lb/hr with duct burner firing  
52.82 TPY based on a 12 month rolling summation

Applicable Compliance Methods:

Compliance with the lb/hr emission limitation shall be demonstrated by the recordkeeping required in section A.III.. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

If required, the permittee shall demonstrate compliance with the lb/hr emission limitation

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by emission testing in accordance with approved USEPA test methods.

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d. Emission Limitation:

VOC emissions shall not exceed  
3.2 lb/hr without duct burner firing  
20.4 lb/hr with duct burner firing  
65.1 TPY, based on a 12 month rolling summation,  
including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions. The annual emissions associated with start-up and shutdown shall be determined by record keeping required in section A.III.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

e. Emission Limitation:

CO emissions shall not exceed  
6 ppmvd at 15 % Oxygen without duct burner firing (based on 24 hr block avg.)  
9 ppmvd at 15 % Oxygen with duct burner firing (based on 24 hr block avg.)  
25.7 lb/hr without duct burner firing  
50.3 lb/hr with duct burner firing  
278.0 TPY, based on a 12 month rolling summation, including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as startup and shutdown operations shall be demonstrated by the use of the CEM. and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

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f. Emission Limitation:

ammonia (NH<sub>3</sub>) emissions shall not exceed  
28 lb/hr without duct burner firing  
37.8 lb/hr with duct burner firing  
140.01 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

g. Emission Limitation:

Formaldehyde emission shall not exceed  
0.45 lb/hr without duct burner firing  
0.494 lb/hr with duct burner firing  
2.09 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by multiplying the hourly emission rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

h. Emission Limitation:

Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) emissions shall not exceed  
1.68 lb/hr without duct burner firing  
2.2 lb/hr with duct burner firing  
8.07 TPY based on a 12 month rolling summation

Applicable Compliance Method:

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Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the emission factor of 0.0009 lb/MMBTU (supplied by permittee) by the maximum heat input. If required, the permittee shall demonstrate compliance by emission testing in accordance with approved USEPA test methods. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

i. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10 percent opacity as a six minute average.

Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(1) determined according to Method 9 of 40 CFR Part 60, Appendix A.

**VI. Miscellaneous Requirements**

1. In accordance with good engineering practices, the SCR unit on emissions unit P003 shall be installed, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee. The permittee shall maintain on site a copy of the operation & maintenance manual, as provided by the manufacturer.
2. Prior to the installation of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2,3,4 and 6 for approval by the Ohio EPA, Central Office.
3. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system designed to ensure continuous valid and representative readings of NO<sub>x</sub>, CO, and O<sub>2</sub> emissions in units of the applicable standard. The plan shall follow the requirements of the appropriate sections of 40 CFR Part 60, Appendix F or as approved by the Ohio EPA, Central Office and 40 CFR Part 75, Appendix B. The quality assurance/ quality control plan and logbook dedicated to the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system must be kept on site and available for inspection during regular office hours.
4. Within 60 days of the effective date of this permit, the permittee shall submit a data substitution protocol for the continuous emissions monitoring system to the Ohio EPA, Central Office. Upon

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approval of the protocol, the permittee will commence configuring the Data Acquisition Handling System (DAHS) in accordance with the approved protocol. The DAHS modifications will be implemented and active within 120 days of protocol approval. The permittee may request an extension to the implementation requirement subject to approval by the Ohio EPA, Central Office.

**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>
P003 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 3 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	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

**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>
P004 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 4 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	40 CFR 52.21 and OAC rule 3745-31-(10) through (20)
<b>modification to remove non applicable rule</b>	

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OAC rule 3745-31-05(A)(3)

OAC rule 3745-31-05(C)

40 CFR part 60, Subpart GG

40 CFR part 60, Subpart Da

OAC rule 3745-18-06(F)

OAC rule 3745-17-11(B)(4)

OAC rule 3745-17-07(A)

40 CFR Part 75

OAC rule 3745-103

OAC rule 3745-14

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<u>Applicable Emissions Limitations/Control Measures</u>		
EMISSION LIMITS WITHOUT DUCT BURNER FIRING	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)	month rolling average 88.53 tpy of PM/PM <sub>10</sub> , based on a 12 month rolling average
nitrogen oxides (NO <sub>x</sub> ) emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	NO <sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15 % oxygen (based on a 3 hour block averaging period).	278.0 tpy of CO, based on a 12 month rolling average.
NO <sub>x</sub> emissions shall not exceed 21.1 lb/hr.	NO <sub>x</sub> emissions shall not exceed 27.8 lb/hr.	65.1 tpy of VOC, based on a 12 month rolling average.
particulate (PM/PM <sub>10</sub> ) emissions shall not exceed 15 lb/hr.	PM/PM <sub>10</sub> emissions shall not exceed 23.3 lb/hr.	8.07 tpy of H <sub>2</sub> SO <sub>4</sub> , based on a 12 month rolling average
sulfur dioxide (SO <sub>2</sub> ) emission shall not exceed 11 lb/hr.	SO <sub>2</sub> emissions shall not exceed 14.4 lb/hr.	see . A.I.2.d below.
carbon monoxide (CO) emissions shall not exceed 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	CO emissions shall not exceed 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period).	The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, OAC rule 3745-18-06(F), OAC rule 3745-17-11 (B)(4), OAC rule 3745-17-07(A), 40 CFR 52.21, and OAC rule 3745-31-(10) through (20).
CO emissions shall not exceed 25.7 lb/hr.	CO emissions shall not exceed 50.3 lb/hr.	EMISSION LIMITS WITHOUT DUCT BURNER FIRING
volatile organic compounds (VOC) emissions shall not exceed 3.2 lb/hr .	VOC emissions shall not exceed 20.4 lb/hr.	ammonia (NH <sub>3</sub> ) emissions shall not exceed 28 lb/hr.
sulfuric acid (H <sub>2</sub> SO <sub>4</sub> ) emissions shall not exceed 1.68 lb/hr.	H <sub>2</sub> SO <sub>4</sub> emissions shall not exceed 2.2 lb/hr.	formaldehyde emissions shall not exceed 0.45 lb/hr.
	TOTAL TONS PER YEAR (including 3,260 hours per year without duct burners, 5,500 hours per year with duct burners, startups and shutdowns)	EMISSION LIMITS WITH DUCT BURNER FIRING (limited to 5,500 hours per year)
	121.2 tpy of NO <sub>x</sub> , based on a 12 month rolling average.	NH <sub>3</sub> emissions shall not exceed 37.8 lb/hr.
	52.82 tpy of SO <sub>2</sub> , based on a 12	formaldehyde emissions shall not exceed 0.494 lb/hr.

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TOTAL TONS PER YEAR  
(including 3,260 hours per  
year without duct burners,  
5,500 hours per year with  
duct burners, startups and  
shutdowns)

140.01 tpy of NH3

2.09 tpy of formaldehyde

Visible particulate emissions  
shall not exceed 10 %  
opacity as a six minute  
average.

see A.I.2.e below.

see A.II.4. below.

see A.I.2.b. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

see A.I.2.a. below.

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See A.I.2.c. below.

See A.I.2.c. below

See Part II Section A.IV.

## **2. Additional Terms and Conditions**

**2.a** The emissions limit based on this applicable rule is equivalent to or less stringent than the

limit established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20).

- 2.b** The emission limits based on this applicable rule are equivalent to or less stringent than the limits established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20). Except as provided for in the terms and condition of this permit, the permittee is not exempt from meeting any additional requirements of 40 CFR Part 60, Subpart GG.
- 2.c** The permittee shall ensure that any effected emissions unit complies with the requirements of 40 CFR Part 75. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.
- 2.d** The permittee is required to perform a Best Available Control Technology (BACT) review for NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, H<sub>2</sub>SO<sub>4</sub>, and VOC. The emissions limits based on the BACT requirements are listed under 40 CFR 52.21 and OAC rule 3745-31-(13) through(20) above. The following determinations have been made for each pollutant:
- PM- Burning natural gas in an efficient combustion turbine. For this permit, it is assumed that all PM emissions are PM<sub>10</sub>.
- NO<sub>x</sub>- Use of DLN burners and employment of SCR with a controlled rate of 3.0 ppmvd at 15% oxygen (based on a 3 hour block averaging period).
- CO- Use of good combustion practices with a rate of 6 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) without duct firing and 9 ppmvd at 15 % oxygen (based on a 24 hour block averaging period) with duct firing.
- VOC- Use of efficient combustion technology in the operation of the turbine.
- SO<sub>2</sub>- Burning natural gas in an efficient combustion turbine and burning low sulfur fuel.  
H<sub>2</sub>SO<sub>4</sub>- Burning natural gas in an efficient combustion turbine.
- 2.e** The requirements of this rule are equivalent to the NO<sub>x</sub>, SO<sub>2</sub> and PM/PM<sub>10</sub> emissions per 40 CFR 52.21 and OAC rule 3745-31-(10) through (20).

## II. Operational Restrictions

1. The permittee shall burn only natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100 standard cubic feet.
2. Startup shall be defined as the period between when the combustion turbine is initially started until the combustion turbine achieves combustion operational Mode 6. Shutdown shall be defined as the period beginning when the combustion turbine leaves operational Mode 6 and ending when combustion has ceased. Mode 6 is defined by the manufacturer as the low emissions mode during which all 6 of the burner nozzles are in use, burning a lean premixed gas for steady-state operation (i.e., in compliance with the NO<sub>x</sub> and CO lbs/hr emission limitations listed in term A.I.1). The continuous emission monitoring system will indicate and record the combustion turbine operational mode, including when the emissions unit is shutdown and when operating in start-up and shutdown modes. This system will also be used to demonstrate compliance with the NO<sub>x</sub> and

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CO emissions limitations during steady state operation (Mode 6) and startup/shutdowns.

Startups shall not exceed 250 minutes in duration and shutdowns shall not exceed 120 minutes in duration. The total of all start-ups and shutdowns per turbine shall be limited to 260 cycles (each cycle consists of one start-up and one shutdown) per year.

<u>Pollutant</u>	<u>Maximum Emission Rate (lbs/hr per turbine)</u>
NOx	400
CO	1,658
VOC	94

Compliance with the above CO and NOx lbs/hour startup and shutdown emission limitations will be demonstrated using the continuous emissions monitoring system based on a 1 hour block average. Compliance with the VOC lbs/hour startup and shutdown emission limitations will be demonstrated through the record keeping required in section A.III. of this permit.

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3. Except during periods of startup, the SCR shall be in operation at all times including periods of shutdown mode of the unit.
4. The maximum annual hours of operation of the duct burners for this emission unit shall not exceed 5,500 hours, based upon a rolling 12 month summation.

To ensure enforceability during the first 12 calendar months following the startup of this emissions unit, the permittee shall not exceed the monthly hours of operation restrictions specified in the following table:

Month	Hours of Operation
1	800
1-2	1600
1-3	2400
1-4	3200
1-5	4000
1-6	4800
1-7	5500
1-8	5500
1-9	5500
1-10	5500
1-11	5500
1-12	5500

After the first 12 calendar months following the startup of emission unit P001, compliance with the annual hours of operation restriction shall be based on a rolling, 12-month summation.

### **III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall maintain monthly records of the following information for this emission unit:
  - a. the natural gas usage rate (in standard cubic feet).
  - b. the hours of operation of the combustion turbine.
  - c. the hours of operation of the duct burner.
  - d. During the first 12 calendar months of operation, records of the cumulative operating hours of the duct burner.

- e. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours of the duct burner.
  - f. Number of start-ups, and the duration, in minutes, of each start-up.
  - g. Number of shutdowns, and the duration, in minutes, of each shutdown.
  - h. The total number of start-up/shutdown cycles.
  - i. The VOC emissions for each start-up/shutdown event, in tons, by using the emissions factor of 94 pounds per hour during startup and shutdown;
  - j. The total VOC emissions, in tons, not including start-up/shutdown emissions.
  - k. The total NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - l. The total CO emissions, in tons, including start-up/shutdown emissions.
  - m. The total VOC emissions, in tons, including start-up/shutdown emissions (i.e., i+j).
  - n. The total SO<sub>2</sub>, PM/PM<sub>10</sub>, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions, in pounds.
  - o. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions.
  - p. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the total CO emissions, in tons, including start-up/shutdown emissions.
  - q. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the VOC emissions, in tons, including start-up/shutdown emissions.
  - r. Beginning after the first 12 calendar months of operation, the rolling, 12-month summations of the SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub> and PM/PM<sub>10</sub> emissions, in tons.
2. The permittee shall install, certify, operate and maintain equipment to continuously monitor\* and record NO<sub>x</sub>, CO and O<sub>2</sub> from this emissions unit in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 and 40 CFR Part 75, or as approved by the Ohio EPA, Central Office..

The permittee shall maintain records of all data obtained by the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring system including, but not limited to, parts per million NO<sub>x</sub>, CO and O<sub>2</sub> on an instantaneous (one-minute) basis, emissions of NO<sub>x</sub>, CO and O<sub>2</sub> in units established in this permit in the appropriate averaging period, during Mode 6, and including start-up and shutdown,

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results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

In conjunction with the operation of the NO<sub>x</sub> and CO CEMs, the permittee shall install, operate and maintain a system to monitor when the duct burners are being fired. The data measured by this system shall be compiled with the data recorded by the NO<sub>x</sub> and CO CEMs.

\* The installation and operation of systems to continuously monitor and record emissions of NO<sub>x</sub> may be performed in lieu of monitoring the nitrogen content of the fuels being fired in the turbine, as required by 40 CFR 60.334(b).

3. The permittee shall install, operate and maintain equipment to continuously monitor and record the actual fuel flow to this emissions unit when the emissions unit is in operation. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 75. If the fuel flow monitoring and/or recording equipment is (are) not in service when the emissions unit is in operation, the permittee shall comply with the appropriate missing data procedures specified in 40 CFR Part 75 and/or section A.VI.4. of this permit.
4. The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the combustion turbine and duct burner. In accordance with 40 CFR 60, Subpart GG, section 60.334 (h)(3), the permittee has demonstrated that the gaseous fuel meets the definition of natural gas in 40 CFR 60 Subpart GG, section 60.331(u). Therefore, fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D. Per 40 CFR Part 75, Appendix D section 2.3.1.4, the permittee has demonstrated that the gaseous fuel is pipeline natural gas. Therefore, ongoing sampling of the of the fuel's sulfur content is required annually and whenever the fuel supply sources change.
5. The permittee shall determine the hourly heat input rate to the combustion turbine and duct burner from the fuel flow rate as determined in term A. III.3. and gross calorific value as determined in term A.III.4. The heat input rate shall be calculated in accordance with the procedures in section 5 of 40 CFR Part 75, Appendix F.
6. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

**IV. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurred.
2. The permittee shall submit quarterly deviation (excursion) reports that identify the following:

- a. During the first 12 calendar months of operation, all exceedances of the cumulative duct burner operating hours limitations.
- b. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month duct burner operating hours limitation.
- c. Any record which shows that the sulfur content of the natural gas exceeded 2 grains per 100 standard cubic feet.
- d. Any record which shows that the start-up duration exceeded 250 minutes.
- e. Any record which shows that the shutdown duration exceeded 120 minutes.
- f. Any record which shows that the total number of start-up/shutdown cycles exceeded 260.
- g. All exceedances of the NO<sub>x</sub>, CO, and/or VOC start-up limitations.
- h. Beginning after the first 12 calendar months of operation, all exceedances of the rolling, 12-month NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and/or PM/PM10 emission limitations.

The quarterly deviation reports are due by the dates described in Part 1 - General Terms and Conditions of this permit under section (A)(2).

3. Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.03(l) and 40 CFR Part 60.7 and 60.13 (h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO<sub>x</sub> or CO values, as recorded by the CEMs in excess of the applicable limits specified in the terms and conditions of this permit. These reports shall also contain the total NO<sub>x</sub> and CO emissions for the calendar quarter (in tons), including all data collected during start-up and shutdown periods and all data generated pursuant to the missing data procedures specified in 40 CFR Part 75 and/or the approved data substitution protocol required by section A.VI.4. of this permit.

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting any continuous NO<sub>x</sub>, CO, or O<sub>2</sub> monitoring system down time while the emission unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emission unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emission unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emission unit was on line shall also be included in the quarterly report.

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

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Pursuant to OAC rules 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 Portsmouth Local Air Agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

4. In lieu of the excess emissions reports required under 40 CFR Part 60.334, the permittee shall submit excess emissions reports for this emissions unit in accordance with this permit.
5. The permittee shall submit annual reports that specify the total NO<sub>x</sub>, CO, PM/PM10, SO<sub>2</sub>, VOC, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions from this emissions unit for the previous calendar year. The reports shall be submitted by January 31 of each year.
6. This emission unit is subject to the applicable provisions of Subpart Da and GG of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and,
- d. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to :

Ohio Environmental Protection Agency  
DAPC - Permit Management Unit  
P.O. Box 163669  
Columbus, Ohio 43216-3669

and

Portsmouth Local Air Agency  
605 Washington Street, Third Floor  
Portsmouth, Ohio 45662

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## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emission unit.
  - b. The emission testing shall be conducted to demonstrate compliance with the NO<sub>x</sub> and CO outlet concentration, and the mass emission limitations for NO<sub>x</sub>\*, CO, Formaldehyde, VOC, PM/PM<sub>10</sub> and ammonia.
  - c. The following test method(s) shall be employed to demonstrate compliance with the above emission limitations: for NO<sub>x</sub>, Method 20 of 40 CFR Part 60, Appendix A; for PM/PM<sub>10</sub>, Method 5 of 40 CFR Part 60, Appendix A; for Formaldehyde, SW-846 Method 0011 or EPA Method 316; for VOC, Method 25 of 40 CFR Part 60, Appendix A; for CO Method 10 of 40 CFR Part 60, Appendix A and for ammonia, CTM-027. Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. The testing shall be conducted while the emission unit is operating at or near its maximum capacity with and without duct burner firing, unless otherwise specified or approved by Ohio EPA or local air agency.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emission unit operating parameters, the times(s) and date(s) of the test(s), and the person(s) who will be conducting these test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).
  - f. Personnel from Portsmouth Local Air Agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
  - g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Portsmouth Local Air

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Agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Portsmouth Local Air Agency.

\* In lieu of the test methods and procedures required under 40 CFR Part 60.335, the permittee shall follow the testing requirements in accordance with this permit.

2. Within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3 and 6\* and/or 40 CFR Part 75, unless an extension is granted by the Ohio EPA. Personnel from the Portsmouth Local Air Agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, copies of all test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Portsmouth Local Air Agency and the Ohio EPA, Central Office. Certification of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 2, 3, 4 and 6\* and/or 40 CFR Part 75.

\* In lieu of monitoring the stack gas flow rate as required by 40 CFR Part 60, Appendix B - Performance Specification 6, the permittee shall use certified NO<sub>x</sub> CEMs in conjunction with a fuel flow monitor as described in 40 CFR Part 75, and certified CO CEMs in conjunction with a fuel flow monitor (in a manner similar to the used for NO<sub>x</sub>) to meet these requirements. The relative accuracy requirements of Performance Specification 6 shall apply.

3. 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<sub>x</sub> emissions shall not exceed 3.0 ppmvd at 15% Oxygen (based on 3 hr block avg.)  
21.1 lb/hr without duct firing  
27.8 lb/hr with duct firing  
121.2 TPY, based on a 12 month rolling summation,  
including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those limitations, as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as, start up and shutdown

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operations shall be demonstrated by the use of the CEM and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

b. Emission Limitation:

PM/PM10 emissions shall not exceed  
15 lb/hr without duct burner firing  
23.3 lb/hr with duct burner firing  
88.53 TPY based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

c. Emission Limitation:

SO2 emissions shall not exceed  
11 lb/hr without duct burner firing  
14.4 lb/hr with duct burner firing  
52.82 TPY based on a 12 month rolling summation

Applicable Compliance Methods:

Compliance with the lb/hr emission limitation shall be demonstrated by the recordkeeping required in section A.III.. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

If required, the permittee shall demonstrate compliance with the lb/hr emission limitation by emission testing in accordance with approved USEPA test methods.

d. Emission Limitation:

VOC emissions shall not exceed  
3.2 lb/hr without duct burner firing  
20.4 lb/hr with duct burner firing  
65.1 TPY, based on a 12 month rolling summation,  
including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions. The annual emissions associated with start-up and shutdown shall be determined by record keeping required in section A.III.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

e. Emission Limitation:

CO emissions shall not exceed  
6 ppmvd at 15 % Oxygen without duct burner firing (based on 24 hr block avg.)  
9 ppmvd at 15 % Oxygen with duct burner firing (based on 24 hr block avg.)  
25.7 lb/hr without duct burner firing  
50.3 lb/hr with duct burner firing  
278.0 TPY, based on a 12 month rolling summation, including startup and shutdown emissions.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Ongoing compliance with those as well as annual, including startup and shutdown, emission limitations during Mode 6 as well as startup and shutdown operations shall be demonstrated by the use of the CEM. and the records required pursuant to this permit.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

f. Emission Limitation:

ammonia (NH3) emissions shall not exceed

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28 lb/hr without duct burner firing  
37.8 lb/hr with duct burner firing  
140.01 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by the multiplying the hourly emissions rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

g. Emission Limitation:

Formaldehyde emission shall not exceed  
0.45 lb/hr without duct burner firing  
0.494 lb/hr with duct burner firing  
2.09 TPY

Applicable Compliance Method:

Compliance with the lb/hr emission limitations shall be demonstrated by the performance testing as described in section A.V.1. Compliance with the annual emission limitation shall be determined by multiplying the hourly emission rate, as determined by the most recent performance test that demonstrated compliance, by the actual annual hours of operation and dividing by 2000 lb/ton.

h. Emission Limitation:

Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) emissions shall not exceed  
1.68 lb/hr without duct burner firing  
2.2 lb/hr with duct burner firing  
8.07 TPY based on a 12 month rolling summation

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the emission factor of 0.0009 lb/MMBTU (supplied by permittee) by the maximum heat input. If required, the permittee shall demonstrate compliance by emission testing in accordance

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with approved USEPA test methods. Compliance with the annual emission limitation shall be determined by multiplying the hourly emissions rate by the actual annual hours of operation and dividing by 2000lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

TPY allowables were calculated using projected lb/hr emission rates at 56 deg F.

i. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10 percent opacity as a six minute average.

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Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(1) determined according to Method 9 of 40 CFR Part 60, Appendix A.

## VI. Miscellaneous Requirements

1. In accordance with good engineering practices, the SCR unit on emissions unit P004 shall be installed, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee. The permittee shall maintain on site a copy of the operation & maintenance manual, as provided by the manufacturer.
2. Prior to the installation of the continuous NO<sub>x</sub>, CO and O<sub>2</sub> monitoring systems, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2,3,4 and 6 for approval by the Ohio EPA, Central Office.
3. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system designed to ensure continuous valid and representative readings of NO<sub>x</sub>, CO, and O<sub>2</sub> emissions in units of the applicable standard. The plan shall follow the requirements of the appropriate sections of 40 CFR Part 60, Appendix F or as approved by the Ohio EPA, Central Office and 40 CFR Part 75, Appendix B. The quality assurance/ quality control plan and logbook dedicated to the continuous NO<sub>x</sub>, CO, and O<sub>2</sub> monitoring system must be kept on site and available for inspection during regular office hours.
4. Within 60 days of the effective date of this permit, the permittee shall submit a data substitution protocol for the continuous emissions monitoring system to the Ohio EPA, Central Office. Upon approval of the protocol, the permittee will commence configuring the Data Acquisition Handling System (DAHS) in accordance with the approved protocol. The DAHS modifications will be implemented and active within 120 days of protocol approval. The permittee may request an extension to the implementation requirement subject to approval by the Ohio EPA, Central Office.

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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>
P004 - 172 MW GE 7FA natural gas fired dry low NOx (DLN) combustion turbine No. 4 with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR)	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>	<u>Applicable Emissions Limitations/Control Measures</u>
P005 - 10 Cell Mechanical Draft Cooling Tower	40 CFR 52.21 and OAC rule 3745-31-(10) thru(20)	Particulate (PM/PM <sub>10</sub> )emissions shall not exceed 2.60 lbs/hr.
	PM/PM <sub>10</sub> emissions shall not exceed 11.39 TPY based on a 12 month rolling average.	PM/PM <sub>10</sub> emissions shall not exceed 11.39 TPY based on a 12 month rolling average.
	OAC rule 3745-31-05(A)(3)	See section A.1.2 a below.
	OAC rule 3745-17-11(B)(4)	See section A.I.2 b below.
	OAC rule 3745-17-07(A)(1)	See section A.I.2 c below.
		Visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
		See section A.I.2 d below.

**2. Additional Terms and Conditions**

- 2.a Per the requirements of 40 CFR 52.21, the permittee is required to perform a Best Available Control Technology (BACT) review for PM/PM<sub>10</sub>. The implementation of drift eliminators constitute BACT for this emissions unit.
- 2.b The requirements of this rule also include compliance with the requirements of OAC rule

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3745-31-10 through 20, OAC rule 3745-17-07 (A)(1), and 40 CFR Part 52.21.

- 2.c The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05(A)(3).
- 2.d It shall not be deemed to be a violation of this limit, where the presence of uncombined water is the only reason for visible emissions exceeding 20% opacity from the stack.

## **II. Operational Restrictions**

- 1. The permittee shall maintain an average total dissolved solids content of 3,000 ppm or less in the combined circulating cooling water discharge for P005 and P006.

## **III. Monitoring and/or Recordkeeping Requirements**

- 1. The permittee shall perform the following monitoring requirements on a monthly basis:
  - a. test and record the total dissolved solids content of the combined circulating water discharge for P005 and P006, in ppm; and
  - b. determine the average total dissolved solids content based on a rolling 12 month average.

## **IV. Reporting Requirements**

- 1. The permittee shall submit deviation reports that identify any exceedances of the average total dissolved solids content limitation. These reports shall be submitted in accordance with the section A.1.c of the general terms and conditions of this permit.

## **V. Testing Requirements**

- 1. Compliance with the allowable emissions limitation in section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

Particulate (PM/PM<sub>10</sub>) emissions shall not exceed 2.60 lbs/hr and 11.39 TPY.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitation shall be demonstrated by multiplying the maximum drift loss factor of 0.001 percent by the circulating water flow rate (gal/min) by

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the average total dissolved solid content (ppm) of the cooling water and the appropriate conversion factors (8.34 lbs/gal, 60 min/hr) and dividing by 1,000,000 (ppm).

If required, the permittee shall submit a testing proposal which will demonstrate that the maximum drift loss does not exceed 0.001 percent.

Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly emission rate by the actual monthly operating hours and dividing by 2000 lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

b. Emission Limitation:

Visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.

## **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>
P005 - 10 Cell Mechanical Draft Cooling Tower	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

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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>	<u>Applicable Emissions Limitations/Control Measures</u>
P006 - 10 Cell Mechanical Draft Cooling Tower	40 CFR 52.21 and OAC rule 3745-31-(10) thru(20)	Particulate (PM/PM <sub>10</sub> )emissions shall not exceed 2.60 lbs/hr.  PM/PM <sub>10</sub> emissions shall not exceed 11.39 TPY based on a 12 month rolling average.
	OAC rule 3745-31-05(A)(3)	See section A.1.2 a below.
	OAC rule 3745-17-11(B)(4)	See section A.I.2 b below.
	OAC rule 3745-17-07(A)(1)	See section A.I.2 c below.
		Visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.  See section A.I.2 d below.

**2. Additional Terms and Conditions**

**2.a** Per the requirements of 40 CFR 52.21, the permittee is required to perform a Best Available Control Technology (BACT) review for PM/PM<sub>10</sub>. The implementation of drift eliminators constitute BACT for this emissions unit.

**2.b** The requirements of this rule also include compliance with the requirements of OAC rule

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3745-31-10 through 20, OAC rule 3745-17-07 (A)(1), and 40 CFR Part 52.21.

- 2.c The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05(A)(3).
- 2.d It shall not be deemed to be a violation of this limit, where the presence of uncombined water is the only reason for visible emissions exceeding 20% opacity from the stack.

## **II. Operational Restrictions**

- 1. The permittee shall maintain an average total dissolved solids content of 3,000 ppm or less in the combined circulating cooling water discharge for P005 and P006.

## **III. Monitoring and/or Recordkeeping Requirements**

- 1. The permittee shall perform the following monitoring requirements on a monthly basis:
  - a. test and record the total dissolved solids content of the combined circulating water for P005 and P006, in ppm; and
  - b. determine the average total dissolved solids content based on a rolling 12 month average.

## **IV. Reporting Requirements**

- 1. The permittee shall submit deviation reports that identify any exceedances of the average total dissolved solids content limitation. These reports shall be submitted in accordance with the section A.1.c of the general terms and conditions of this permit.

## **V. Testing Requirements**

- 1. Compliance with the allowable emissions limitation in section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

Particulate (PM/PM<sub>10</sub>) emissions shall not exceed 2.60 lbs/hr and 11.39 TPY.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitation shall be demonstrated by multiplying the maximum drift loss factor of 0.001 percent by the circulating water flow rate (gal/min) by

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the average total dissolved solid content (ppm) of the cooling water and the appropriate conversion factors (8.34 lbs/gal, 60 min/hr) and dividing by 1,000,000 (ppm).

If required, the permittee shall submit a testing proposal which will demonstrate that the maximum drift loss does not exceed 0.001 percent.

Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly emission rate by the actual monthly operating hours and dividing by 2000 lb/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling 12 month total emissions.

b. Emission Limitation:

Visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.

**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>
P006 - 10 Cell Mechanical Draft Cooling Tower	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