



John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

12/18/2012

Jim Cumbow  
Duke Energy Hanging Rock II, LLC  
1395 County Road 1A  
Ironton, OH 45638

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL  
Facility ID: 0744000150  
Permit Number: P0110487  
Permit Type: Administrative Modification  
County: Lawrence

Certified Mail

Yes	TOXIC REVIEW
Yes	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
Yes	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
Yes	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

**How to appeal this permit**

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
77 South High Street, 17th Floor  
Columbus, OH 43215

## **How to save money, reduce pollution and reduce energy consumption**

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: [www.ohioairquality.org/clean\\_air](http://www.ohioairquality.org/clean_air)

## **How to give us feedback on your permitting experience**

Please complete a survey at [www.epa.ohio.gov/dapc/permitsurvey.aspx](http://www.epa.ohio.gov/dapc/permitsurvey.aspx) and give us feedback on your permitting experience. We value your opinion.

## **How to get an electronic copy of your permit**

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Portsmouth City Health Dept., Air Pollution Unit at (740)353-5156 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

*Michael W. Ahern*

Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA  
Portsmouth; Kentucky; West Virginia



## Response to Comments

Facility ID:	0744000150
Facility Name:	Duke Energy Hanging Rock II, LLC
Facility Description:	1270 MW Combined Cycle Power Plant
Facility Address:	1395 County Rd 1A Ironton, OH 45638 Lawrence County
Permit:	P0110487, Permit-To-Install - Administrative Modification
A public notice for the draft permit issuance was published in the Ohio EPA Weekly Review and appeared in the The Ironton Tribune on 11/07/2012. The comment period ended on 12/07/2012.	
Hearing date (if held)	NA
Hearing Public Notice Date (if different from draft public notice)	

The following comments were received during the comment period specified. Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. PDF copies of the original comments in the format submitted are available upon request.

### The following comments were submitted by Duke Energy.

#### 1. Comment:

Section C.1.d)(5), Monitoring and Recordkeeping Requirements (page 23 of 37)

The second paragraph in this condition begins “\*Fuel flow data...” A corresponding asterisk (\*) is not found in this section of the permit, or on that page. It is suggested that the asterisk be removed from the beginning of that sentence.

#### Response:

This change has been made.



**2. Comment:**

Section C.1.e)(3)a., NOx Reporting Requirements (page 27 and 28 of 37)

This permit condition contains some errors in the regulatory references. It refers to applicable emission limits in 40 CFR Parts 75 and 76, and OAC 3745-14 and OAC 3745-23. The regulations cited do not contain applicable emission limits. For example, 40 CFR Part 75 discusses continuous emission monitoring requirements. 40 CFR Part 76 contains Acid Rain NOx limits applicable to coal fired boilers. OAC 3745-14 contains NOx Budget Program requirements, which may have been applicable when Hanging Rock Permit-to-Install was initially issued. OAC rule 3745-23 previously contained the ambient NOx standards. We request that this condition be revised.

**Response:**

These specific rule references have been removed from this term.

**3. Comment:**

Section C.1.e)(3)b.iv., NOx Reporting Requirements (page 28 of 37)

This permit condition pertains to reporting excess NOx emissions. It currently reads: "the excess emission report (EER)\*, i.e., a summary of any exceedances during the calendar quarter, as specified above." The reference provided by the phrase "as specified above" is somewhat ambiguous. We suggest revising this phrase to read: "as specified above in section C.1.e)(3)a." The underlined text shows the added wording.

**Response:**

This term has been updated to include the specific section.

**4. Comment:**

Section C.1.e)(4)a., CO Reporting Requirements (page 29 of 37)

As discussed in Comment #2, above, this permit condition contains some errors in the regulatory references. It refers to applicable emission limits in 40 CFR Parts 75 and 76, and OAC 3745-14 and OAC 3745-23. The regulations cited do not contain applicable emission limits. For example, 40 CFR Part 75 discusses continuous emission monitoring requirements. 40 CFR Part 76 contains Acid Rain NOx limits applicable to coal fired boilers. OAC 3745-14 contains NOx Budget Program requirements, which may have been applicable when Hanging Rock Permit-to-Install was initially issued. OAC rule 3745-23 previously contained the ambient NOx standards. We request that this condition be revised.

Also, there is a typographical error referring to "NOx" emissions, while the paragraph pertains to CO emissions.

**Response:**

These specific rule references have been removed from this term and the typographical error has been corrected.



**5. Comment:**

Section C.1.e)(4)b.iv., CO Reporting Requirements (bottom of page 29 of 37)

This comment is the same as Comment #3, above. This permit condition pertains to reporting excess CO emissions. It currently reads: “the excess emission report (EER)\*, i.e., a summary of any exceedances during the calendar quarter, as specified above.” The reference provided by the phrase “as specified above” is somewhat ambiguous. We suggest revising this phrase to read: “as specified above in section C.1.e)(4)a.” The underlined text shows the added wording.

**Response:**

This term has been updated to include the specific section.

**6. Comment:**

Section C.1.e)(5)a., Oxygen Reporting Requirements (pages 30 and 31 of 37)

The purpose of this section is to discuss the reporting requirements associated with the continuous oxygen monitor. However, the paragraph contains language pertaining to the reporting of excess emissions of NOx. This paragraph should be revised to remove all references to NOx and all references to excess emissions. This information is not applicable to the continuous oxygen monitor.

**Response:**

This term has been updated as requested.

**7. Comment:**

Section C.1.g)(1), Miscellaneous Requirements (pages 36 of 37)

Prior sections of the permit discuss the four combustion turbines as an emissions unit group. In order to maintain consistency, the first sentence in this paragraph should be revised as follows: “...the SCR units on emissions units P001-P004 shall be installed...” The underlined areas show the suggested wording additions.

**Response:**

This term has been updated as requested.





**FINAL**

**Division of Air Pollution Control  
Permit-to-Install  
for  
Duke Energy Hanging Rock II, LLC**

Facility ID:	0744000150
Permit Number:	P0110487
Permit Type:	Administrative Modification
Issued:	12/18/2012
Effective:	12/18/2012





**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
Duke Energy Hanging Rock II, LLC

**Table of Contents**

Authorization .....	1
A. Standard Terms and Conditions .....	3
1. Federally Enforceable Standard Terms and Conditions .....	4
2. Severability Clause .....	4
3. General Requirements .....	4
4. Monitoring and Related Record Keeping and Reporting Requirements.....	5
5. Scheduled Maintenance/Malfunction Reporting .....	6
6. Compliance Requirements .....	6
7. Best Available Technology .....	7
8. Air Pollution Nuisance .....	7
9. Reporting Requirements .....	7
10. Applicability .....	8
11. Construction of New Sources(s) and Authorization to Install .....	8
12. Permit-To-Operate Application .....	9
13. Construction Compliance Certification .....	9
14. Public Disclosure .....	9
15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations .....	10
16. Fees.....	10
17. Permit Transfers .....	10
18. Risk Management Plans .....	10
19. Title IV Provisions .....	10
B. Facility-Wide Terms and Conditions.....	11
C. Emissions Unit Terms and Conditions .....	14
1. Emissions Unit Group -turbines: P001,P002,P003,P004,.....	15





## Authorization

Facility ID: 0744000150  
Facility Description: 1270 MW Combined Cycle Power Plant  
Application Number(s): A0044967  
Permit Number: P0110487  
Permit Description: Administrative permit modification to PTI 07-00503 for four combustion turbines to remove the duct burners operating hours restriction and revised the hourly emission limitations without increasing the annual emission limitations.  
Permit Type: Administrative Modification  
Permit Fee: \$2,000.00  
Issue Date: 12/18/2012  
Effective Date: 12/18/2012

This document constitutes issuance to:

Duke Energy Hanging Rock II, LLC  
1395 County Rd 1A  
Ironton, OH 45638

of a Permit-to-Install for the emissions unit(s) identified on the following page.

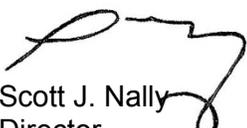
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Portsmouth City Health Dept., Air Pollution Unit  
605 Washington Street  
3rd Floor  
Portsmouth, OH 45662  
(740)353-5156

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

  
Scott J. Nally  
Director



## Authorization (continued)

Permit Number: P0110487  
 Permit Description: Administrative permit modification to PTI 07-00503 for four combustion turbines to remove the duct burners operating hours restriction and revised the hourly emission limitations without increasing the annual emission limitations.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

**Group Name: turbines**

<b>Emissions Unit ID:</b>	<b>P001</b>
Company Equipment ID:	HRSG 1GT1
Superseded Permit Number:	07-00503
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P002</b>
Company Equipment ID:	HRSG 1GT2
Superseded Permit Number:	07-00503
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P003</b>
Company Equipment ID:	HRSG 2GT1
Superseded Permit Number:	07-00503
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P004</b>
Company Equipment ID:	HRSG 2GT2
Superseded Permit Number:	07-00503
General Permit Category andType:	Not Applicable



**Final Permit-to-Install**  
Duke Energy Hanging Rock II, LLC  
**Permit Number:** P0110487  
**Facility ID:** 0744000150  
**Effective Date:** 12/18/2012

## **A. Standard Terms and Conditions**



## **1. Federally Enforceable Standard Terms and Conditions**

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
  - (1) Standard Term and Condition A.2.a), Severability Clause
  - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
  - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
  - (4) Standard Term and Condition A.9., Reporting Requirements
  - (5) Standard Term and Condition A.10., Applicability
  - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
  - (7) Standard Term and Condition A.14., Public Disclosure
  - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
  - (9) Standard Term and Condition A.16., Fees
  - (10) Standard Term and Condition A.17., Permit Transfers

## **2. Severability Clause**

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they 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 and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

## **3. 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 re-issuance, or modification.



- 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, 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 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.

#### **4. Monitoring and Related Record Keeping 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:
  - (1) The date, place (as defined in the permit), and time of sampling or measurements.
  - (2) The date(s) analyses were performed.
  - (3) The company or entity that performed the analyses.
  - (4) The analytical techniques or methods used.
  - (5) The results of such analyses.
  - (6) 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:
  - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Portsmouth City Health Dept., Air Pollution Unit.



- (2) 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 Portsmouth City Health Dept., Air Pollution Unit. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
  - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the Portsmouth City Health Dept., Air Pollution Unit every six months, 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.
  - (4) This permit is for an emissions unit located at a Title V facility. 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.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## **5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Portsmouth City Health Dept., Air Pollution Unit 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).

## **6. Compliance Requirements**

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



- c) 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:
  - (1) 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.
  - (2) 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.
  - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - (4) 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.
- d) The permittee shall submit progress reports to the Portsmouth City Health Dept., Air Pollution Unit 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:
  - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - (2) 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.

## **7. Best Available Technology**

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

## **8. 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.

## **9. 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 Portsmouth City Health Dept., Air Pollution Unit.
- 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 Portsmouth City Health Dept., Air Pollution Unit. 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 (i.e., postmarked) quarterly, 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.)

## **10. 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).

## **11. Construction of New Sources(s) and Authorization to Install**

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. 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 this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit 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.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).



- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

No emissions unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

## **12. Permit-To-Operate Application**

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).

## **13. Construction Compliance Certification**

The applicant shall identify the following dates in the online facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

## **14. 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.



**15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations**

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., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**16. 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 any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

**17. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in Air Services once the transfer is legally completed. The change must be submitted through Air Services within thirty days of the ownership transfer date.

**18. 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.

**19. 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.



**Final Permit-to-Install**  
Duke Energy Hanging Rock II, LLC  
**Permit Number:** P0110487  
**Facility ID:** 0744000150  
**Effective Date:** 12/18/2012

## **B. Facility-Wide Terms and Conditions**



1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

a) None.

2. 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

3. **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 (tons per year)TPY Nitrogen Oxides (NO <sub>x</sub> ) 3.14 TPY Carbon Monoxide (CO) 0.369 TPY Organic Compounds (OC) 0.067 TPY Sulfur Dioxide (SO <sub>2</sub> ) 0.148 TPY Particulate Matter/Particulate Matter less than 10 microns (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 Volatile Organic Compounds (VOC) 0.024 TPY SO <sub>2</sub> 0.164 TPY PM/PM <sub>10</sub>
(5) fuel/chemical storage tanks	storage of diesel fuel or low vapor pressure material	less than 1 TPY VOC

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

4. 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, do 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. Should the HAP emissions exceed these values and become a major source of HAP emissions, then this facility may be subject to the requirements of a MACT standard (40 CFR Part 63).

5. The permittee shall ensure that any CAIR NO<sub>x</sub>, SO<sub>2</sub>, or NO<sub>x</sub> ozone season units complies with the requirements of OAC 3745-109, which includes submitting timely permit applications. The permittee shall ensure that the affected emissions units comply with those requirements as outlined in the permit application submitted as required by OAC rules 3745-109-03, 109-10 and 109-16 for the affected emissions units.
6. The permittee shall also comply with any subsequent federally mandated programs that may replace the CAIR program affecting electric generating facilities.
7. Clean Air Interstate Rule – OAC Chapter 3745-109.  
  
P001 – 172 MW combined cycle combustion turbine;  
P002 – 172 MW combined cycle combustion turbine;  
P003 – 172 MW combined cycle combustion turbine;  
P004 – 172 MW combined cycle combustion turbine;

Note: Ohio EPA DAPC has completed rule amendments for OAC Chapter 3745-14, specifically, OAC rule 3745-14-01 and OAC rule 3745-14-06, which facilitated the transition of the affected units from OAC Chapter 3745-14 into the federal Clean Air Interstate Rule (CAIR) program which began with the 2009 control periods. This began the process of “sunsetting” the parts of OAC Chapter 3745-14 which were no longer needed as a result of Ohio’s CAIR rules (OAC Chapter 3745-109).



**Final Permit-to-Install**  
Duke Energy Hanging Rock II, LLC  
**Permit Number:** P0110487  
**Facility ID:** 0744000150  
**Effective Date:** 12/18/2012

## **C. Emissions Unit Terms and Conditions**



**1. Emissions Unit Group -turbines: P001,P002,P003,P004,**

EU ID	Operations, Property and/or Equipment Description
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)
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)
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)
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)

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
- (1) b)(1)f, d)(9), d)(10), d)(11), d)12 and e)(8)
- b) Applicable Emissions Limitations and/or Control Requirements
- (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	40 CFR 52.21 and OAC rule 3745-31-(10) through (20)	<p><b>EMISSION LIMITS WITHOUT DUCT BURNER FIRING</b></p> <p>Nitrogen oxides (NO<sub>x</sub>) emissions shall not exceed 3.0 ppmvd at 15% oxygen (based on a 3-hour block averaging period).</p> <p>NO<sub>x</sub> emissions shall not exceed 21.1 pounds per hour (lbs/hr).</p> <p>Particulate (PM/PM<sub>10</sub>)emissions shall not exceed 15 lbs/hr.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emission shall not exceed 1.2lbs/hr.</p> <p>Carbon monoxide (CO) emissions shall not exceed 6 ppmvd at 15% oxygen (based on a 24-hour block averaging period).</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>CO emissions shall not exceed 25.7 lbs/hr.</p> <p>Volatile organic compounds (VOC) emissions shall not exceed 3.2 lbs/hr.</p> <p>Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) emissions shall not exceed 0.18lb/hr.</p> <p><b>EMISSION LIMITS WITH DUCT BURNER FIRING</b></p> <p>NO<sub>x</sub> emissions shall not exceed 3.0ppmvd at 15% oxygen (based on a 3-hour block averaging period).</p> <p>NO<sub>x</sub> emissions shall not exceed 27.6lbs/hr.</p> <p>PM/PM<sub>10</sub> emissions shall not exceed 19.9lbs/hr.</p> <p>SO<sub>2</sub>emissions shall not exceed 1.52lbs/hr.</p> <p>CO emissions shall not exceed 8 ppmvd at 15% oxygen (based on a 24-hour block averaging period).</p> <p>CO emissions shall not exceed 45.9lbs/hr.</p> <p>VOC emissions shall not exceed 7.3lbs/hr.</p> <p>H<sub>2</sub>SO<sub>4</sub> emissions shall not exceed 0.23lb/hr.</p> <p><b>TOTAL TONS PER YEAR</b></p> <p>NO<sub>x</sub> emissions shall not exceed 120.9 tons per year (tpy) based on a rolling, 12-month average, including startup and shutdown emissions.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>SO<sub>2</sub> emissions shall not exceed 6.7 tpybased on a rolling, 12-month average.</p> <p>PM/PM<sub>10</sub> emissions shall not exceed 87.2 tpybased on a rolling, 12-month average.</p> <p>CO emissions shall not exceed 278.0 tpybased on a rolling, 12-month average, including startup and shutdown emissions.</p> <p>VOCemissions shall not exceed 44.1 tpybased on a rolling, 12-month average, including startup and shutdown emissions.</p> <p>H<sub>2</sub>SO<sub>4</sub> emissions shall not exceed 1.01 tpybased on a rolling, 12-month average.</p> <p>See b)(2)d.</p>
b.	OAC rule 3745-31-05(A)(3)	<p>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).</p> <p><b>EMISSION LIMITS WITHOUT DUCT BURNER FIRING</b></p> <p>Ammonia (NH<sub>3</sub>) emissions shall not exceed 28 lbs/hr.</p> <p>Formaldehyde emissions shall not exceed 0.45 lb/hr.</p> <p><b>EMISSION LIMITS WITH DUCT BURNER FIRING</b></p> <p>NH<sub>3</sub> emissions shall not exceed 31.7lbs/hr.</p> <p>Formaldehyde emissions shall not exceed 0.45 lb/hr.</p> <p><b>TOTAL TONS PER YEAR</b></p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>NH<sub>3</sub> emissions shall not exceed 138.8 tpy.</p> <p>Formaldehyde emissions shall not exceed 1.97 tpy.</p> <p>Visible particulate emissions from any stack shall not exceed 10% opacity as a 6-minute average.</p> <p>See b)(2)e.</p>
c.	40 CFR Part 60, Subpart GG	See b)(2)b.
d.	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)	See b)(2)a.
e.	40 CFR Part 75 OAC rule 3745-103	See b)(2)c.
f.	OAC rule 3745-114	See d)(9) through d)(12) and e)(8).

(2) Additional Terms and Conditions

- a. The emissions limitation required by this applicable rule is equivalent to or less stringent than the emission limitation established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20).
- b. The emission limitations required by this applicable rule are equivalent to or less stringent than the emission limitations established pursuant to 40 CFR 52.21 and OAC rule 3745-31-(10) thru (20). Except as provided for in the terms and conditions of this permit, the permittee is not exempt from meeting any additional requirements of 40 CFR Part 60, Subpart GG.
- c. If the permittee is subject to the requirements of OAC chapter 103 and 40 CFR Parts 72 and 75 concerning acid rain, the permittee shall ensure that any effected 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.
- 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>.
- NO<sub>x</sub>- Use of DLN burners and employment of SCR with a controlled rate of 3.0ppmvd 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 8 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.

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).

c) Operational Restrictions

- (1) The permittee shall burn only pipeline quality natural gas in this emission unit. The maximum sulfur content of the natural gas shall not exceed 0.5 grain 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 b)(1)a.). 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



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 d) 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) This emission unit has been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of emissions upon issuance of this permit.

d) **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. number of start-ups, and the duration, in minutes, of each start-up;
  - d. number of shutdowns, and the duration, in minutes, of each shutdown;
  - e. the total number of start-up/shutdown cycles;
  - f. 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;
  - g. the total VOC emissions, in tons, not including start-up/shutdown emissions;
  - h. the total NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions;
  - i. the total CO emissions, in tons, including start-up/shutdown emissions;
  - j. the total VOC emissions, in tons, including start-up/shutdown emissions (i.e., f+g);
  - k. the total SO<sub>2</sub>, PM/PM<sub>10</sub>, NH<sub>3</sub>, formaldehyde, and sulfuric acid emissions, in pounds;
  - l. the rolling, 12-month summation of the NO<sub>x</sub> emissions, in tons, including start-up/shutdown emissions;
  - m. the rolling, 12-month summation of the total CO emissions, in tons, including start-up/shutdown emissions;



- n. the rolling, 12-month summation of the VOC emissions, in tons, including start-up/shutdown emissions; and
  - o. 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 operate and maintain equipment to continuously monitor\* and record NO<sub>x</sub> emissions from this emissions unit in units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 and/or 40 CFR Part 75, or as approved by Ohio EPA, Central Office.

The permittee shall maintain records of all data obtained by the continuous NO<sub>x</sub> monitoring system including, but not limited to:

- a. emissions of NO<sub>x</sub> in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;
- b. emissions of NO<sub>x</sub> in units established in this permit in the appropriate averaging period during Mode 6, and including start-up and shutdown;
- c. results of quarterly cylinder gas audits or linearity checks;
- d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
- e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- f. hours of operation of the emissions unit, continuous NO<sub>x</sub> monitoring system, and control equipment;
- g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO<sub>x</sub> monitoring system;
- h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO<sub>x</sub> monitoring system; and
- i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

In conjunction with the operation of the NO<sub>x</sub> CEMS, the permittee shall 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> 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 operate and maintain equipment to continuously monitor and record CO emissions 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/or 40 CFR Part 75, or as approved by the Ohio EPA, Central Office.

The permittee shall maintain all records of data obtained by the continuous CO monitoring system including, but not limited to:

- a. emissions of CO in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;
- b. emissions of CO in units established in this permit in the appropriate averaging period during Mode 6, and including start-up and shutdown;
- c. results of quarterly cylinder gas audits;
- d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
- e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- f. hours of operation of the emissions unit and continuous CO monitoring system;
- g. the date, time, and hours of operation of the emissions unit without the continuous CO monitoring system;
- h. the date, time, and hours of operation of the emissions unit during any malfunction of the continuous CO monitoring system; and
- i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

In conjunction with the operation of the CO CEMS, the permittee shall 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 CO CEMS.

- (4) The permittee shall operate and maintain equipment to continuously monitor and record O<sub>2</sub> emitted from this emissions unit in percent O<sub>2</sub>. The continuous monitoring and recording equipment shall comply with the requirements specified 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 data obtained by the continuous O<sub>2</sub> monitoring system including, but not limited to:

- a. percent O<sub>2</sub> for each cycle time of the analyzer, with no resolution less than one data point per minute required;
- b. results of quarterly cylinder gas audits or linearity checks;
- c. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
- d. results of required relative accuracy test audit(s);
- e. hours of operation of the emissions unit, continuous O<sub>2</sub> monitoring system;
- f. the date, time, and hours of operation of the emissions unit without the continuous O<sub>2</sub> monitoring system;
- g. the date, time, and hours of operation of the emissions unit during any malfunction of the continuous O<sub>2</sub> monitoring system; and
- h. the reason (if known) and the corrective actions taken (if any) for each such event in (f) and (g).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

- (5) The permittee shall 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 approved data substitution protocol.

Fuel flow data that is substituted in accordance with 40 CFR Part 75, Appendix D, is not to be used when verifying compliance with the hourly NO<sub>x</sub> and CO pounds per hour emission limits. Hours in which fuel flow is substituted should be included as NO<sub>x</sub> and CO monitoring system downtime.

- (6) 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 Part 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 Part 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 fuel's sulfur content is required annually and whenever the fuel supply sources change. Sampling and analysis of the fuel gross calorific value is required monthly.



- (7) The permittee shall determine the hourly heat input rate to the combustion turbine and duct burner from the fuel flow rate as determined in d)(5) and gross calorific value as determined in d)(6). The heat input rate shall be calculated in accordance with the procedures in section 5 of 40 CFR Part 75, Appendix F.
- (8) 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.
- (9) The permit to install for these emissions units (P001 – P004) was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
    - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
  - b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
  - c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$



- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or “worst case” toxic contaminant(s):

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  
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.

- (10) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, 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 new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
  - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" 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 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (11) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);



- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
  - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (12) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- e) 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. any record which shows that the sulfur content of the natural gas exceeded 0.5 grains per 100 standard cubic feet.
    - b. any record which shows that the start-up duration exceeded 250 minutes.
    - c. any record which shows that the shutdown duration exceeded 120 minutes.
    - d. any record which shows that the total number of start-up/shutdown cycles exceeded 260.
    - e. all exceedances of the NO<sub>x</sub>, CO, and/or VOC start-up limitations.
    - f. 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.

These quarterly reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous NO<sub>x</sub> monitoring system:
  - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA



District Office or local air agency, documenting all instances of NO<sub>x</sub> emissions in excess of any applicable limit specified in this permit and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

- b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
- i. the facility name and address;
  - ii. the manufacturer and model number of the continuous NO<sub>x</sub> and other associated monitors;
  - iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;
  - iv. the excess emissions report (EER)\*, i.e., a summary of any exceedances during the calendar quarter, as specified in e(3)a;
  - v. the total NO<sub>x</sub> emissions for the calendar quarter (tons);
  - vi. the total operating time (hours) of the emissions unit;
  - vii. the total operating time of the continuous NO<sub>x</sub> monitoring system while the emissions unit was in operation;
  - viii. results and dates of quarterly cylinder gas audits or linearity checks;
  - ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
  - x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO<sub>x</sub> monitor out-of-control and the compliant results following any corrective actions;
  - xi. the date, time, and duration of any/each malfunction\*\* of the continuous NO<sub>x</sub> monitoring system, emissions unit, and/or control equipment;
  - xii. the date, time, and duration of any downtime\*\* of the continuous NO<sub>x</sub> monitoring system and/or control equipment while the emissions unit was in operation; and
  - xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).



Each report shall address the operations conducted and data obtained during the previous calendar quarter. These reports shall also contain the total NO<sub>x</sub> 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. Data substitution procedures from 40 CFR 75 are not to be used for showing compliance with the short term OAC 3745-31-05(A)(3) rule-based or NSPS-based limitation(s) in this permit.

\* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

\*\* each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit.

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) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous CO monitoring system:
- a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of CO emissions in excess of any applicable limit specified in this permit and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).
  - b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
    - i. the facility name and address;
    - ii. the manufacturer and model number of the continuous CO and other associated monitors;
    - iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;
    - iv. the excess emissions report (EER)\*, i.e., a summary of any exceedances during the calendar quarter, as specified in e(4)a;



- v. the total CO emissions for the calendar quarter (tons);
- vi. the total operating time (hours) of the emissions unit;
- vii. the total operating time of the continuous CO monitoring system while the emissions unit was in operation;
- viii. results and dates of quarterly cylinder gas audits;
- ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
- x. unless previously submitted, the results of any relative accuracy test audit showing the continuous CO monitor out-of-control and the compliant results following any corrective actions;
- xi. the date, time, and duration of any/each malfunction\*\* of the continuous CO monitoring system and/or emissions unit;
- xii. the date, time, and duration of any downtime\*\* of the continuous CO monitoring system while the emissions unit was in operation; and
- xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter. These reports shall also contain the total 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. Data substitution procedures from 40 CFR 75 are not to be used for showing compliance with the short term OAC 3745-31-05(A)(3) rule-based or NSPS-based limitation(s) in this permit.

\* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

\*\* each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit

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.

- (5) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous O<sub>2</sub> monitoring system:
  - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR Parts 60.7 and 60.13(h) and



the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of continuous O<sub>2</sub> monitoring system downtime and malfunction while the emissions unit was on line.

- b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
- i. the facility name and address;
  - ii. the manufacturer and model number of the continuous O<sub>2</sub>;
  - iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;
  - iv. the total operating time (hours) of the emissions unit;
  - v. the total operating time of the continuous O<sub>2</sub> monitoring system while the emissions unit was in operation;
  - vi. results and dates of quarterly cylinder gas audits or linearity checks;
  - vii. unless previously submitted, results and dates of the relative accuracy test audit(s) (during appropriate quarter(s));
  - viii. unless previously submitted, the results of any relative accuracy test audit showing the continuous O<sub>2</sub> monitor out-of-control and the compliant results following any corrective actions;
  - ix. the date, time, and duration of any/each malfunction\* of the continuous O<sub>2</sub> monitoring system while the emissions unit was in operation;
  - x. the date, time, and duration of any downtime\* of the continuous O<sub>2</sub> monitoring system while the emissions unit was in operation; and
  - xi. the reason (if known) and the corrective actions taken (if any) for each event in (b)(ix) and (x).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

\* each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit

- (6) 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.



- (7) 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 April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report.
- (8) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic AirContaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) 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 a 3-hour block averaging period);

21.1 lbs/hr without duct firing;

27.6 lbs/hr with duct firing; and

120.9 tpy, based on a rolling, 12-month summation, including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the allowable outlet concentration, and the lb/hr emission limitations was demonstrated by emission testing performed in August, 2012.

Ongoing compliance with these emission limitations, including startup and shutdown emissions, shall be demonstrated based upon the NO<sub>x</sub> and O<sub>2</sub>CEMs and the records required pursuant to this permit.

b. Emission Limitation:

PM/PM<sub>10</sub> emissions shall not exceed:

15 lb/shr without duct burner firing;

19.9 lbs/hr with duct burner firing; and

87.2 tpy, based on a rolling, 12-month summation.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitations may be demonstrated through the record keeping requirements specified in this permit and the emissions unit



specific PM/PM<sub>10</sub> emission factors established during the emissions testing that demonstrated that the emissions unit was in compliance.

Compliance with the tpy emission limitation shall be demonstrated by multiplying the appropriate hourly emission rate by the actual monthly hours of operation, and then dividing by 2000 lbs/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling, 12-month total emissions.

If required, the permittee shall demonstrate compliance with the hourly emission limitations through emission testing performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and 40 CFR Part 51, Appendix M, Method 202. Alternative USEPA-approved test methods may be used with prior approval by Ohio EPA.

c. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed:

- 1.2lb/hr without duct burner firing;
- 1.52lb/hr with duct burner firing; and
- 6.7 tpy, based on a rolling, 12-month summation.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitations shall be demonstrated by the record keeping requirements specified in this permit.

Compliance with the tpy emission limitation shall be demonstrated by multiplying the appropriate hourly emission rate by the actual monthly hours of operation, and then dividing by 2000 lbs/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling, 12-month total emissions.

If required, the permittee shall demonstrate compliance with the hourly emission limitations through emission testing performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 6.

d. Emission Limitation:

VOC emissions shall not exceed:

- 3.2 lbs/hr without duct burner firing;
- 7.3lbs/hr with duct burner firing; and
- 44.1 tpy, based on a rolling, 12-month summation, including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitations may be demonstrated through the record keeping requirements specified in this permit and the emissions unit



specific VOC emission factors established during the emission testing that demonstrated that the emissions unit was in compliance.

Compliance with the tpy emission limitation, including startup and shut down emissions, shall be demonstrated by multiplying the appropriate hourly emission rate by the actual monthly hours of operation, and then dividing by 2000 lbs/ton. The monthly emissions shall be added to the previous 11 months to determine the rolling, 12-month total emissions.

If required, the permittee shall demonstrate compliance with the hourly emission limitations through emission testing performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 25.

e. Emission Limitation:

CO emissions shall not exceed:

- 6 ppmvd at 15% oxygen without duct burner firing (based on a 24-hour block averaging period);
- 8 ppmvd at 15% oxygen with duct burner firing (based on a 24-hour block averaging period);
- 25.7 lbs/hr without duct burner firing;
- 45.9lbs/hr with duct burner firing; and
- 278.0 tpy, based on a rolling, 12-month summation, including startup and shutdown emissions.

Applicable Compliance Method:

Compliance with the allowable outlet concentration, and the lb/hr emission limitations was demonstrated by emission testing performed in August, 2012. Ongoing compliance with these emission limitations, including startup and shutdown emissions, shall be demonstrated based upon the CO and O<sub>2</sub>CEMs and the records required pursuant to this permit.

f. Emission Limitation:

NH<sub>3</sub> emissions shall not exceed:

- 28 lbs/hr without duct burner firing;
- 31.7 lbs/hr with duct burner firing; and
- 138.8 tpy.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitations may be demonstrated through the record keeping requirements specified in this permit and the emissions unit specific NH<sub>3</sub> emission factors established during the emission testing that demonstrated that the emissions unit was in compliance.



Compliance with the tpy emission limitation shall be demonstrated by multiplying the appropriate hourly emission rate by the actual annual hours of operation, and then dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the hourly emission limitations through emission testing performed in accordance with CTM-027 or other USEPA-approved methods.

g. Emission Limitation:

Formaldehyde emission shall not exceed:

0.45 lbs/hr without duct burner firing;  
0.45lbs/hr with duct burner firing; and  
1.97 tpy.

Applicable Compliance Method:

Compliance with the lbs/hr emission limitations may be demonstrated through the record keeping requirements specified in this permit and the emissions unit specific formaldehyde emission factors established during the emission testing that demonstrated that the emissions unit was in compliance.

Compliance with the tpy emission limitation shall be demonstrated by multiplying the hourly emission rate by the actual annual hours of operation, and then dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the hourly emission limitations through emission testing performed in accordance with SW-846 Method 0011 or EPA Method 316 or other USEPA-approved methods.

h. Emission Limitation:

H<sub>2</sub>SO<sub>4</sub> emissions shall not exceed:

0.18 lb/hr without duct burner firing;  
0.23 lb/hr with duct burner firing; and  
1.01 tpy, based on a rolling, 12-month summation.

Applicable Compliance Method:

Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the emission factor of 0.00009 lb/MMBTU (supplied by permittee) by the maximum heat input. Compliance with the tpy emission limitation shall be demonstrated based upon the record keeping requirements specified in this permit.

If required, the permittee shall demonstrate compliance by emission testing in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 8.



i. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

g) Miscellaneous Requirements

(1) In accordance with good engineering practices, the SCR units on emissions units P001 – 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) The permittee shall maintain a written quality assurance/quality control plan for the continuous NO<sub>x</sub> monitoring system, designed to ensure continuous valid and representative readings of NO<sub>x</sub> emissions in units of the applicable standard(s). The fuel flow monitor/meter shall be maintained as required in Part 75, Appendix D. Except as allowed below, the plan shall follow the requirements of 40 CFR Part 60, Appendix F and 40 CFR Part 75, Appendix B. The quality assurance/quality control plan and a logbook dedicated to the continuous NO<sub>x</sub> monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct relative accuracy test audits for the continuous NO<sub>x</sub> monitoring system in accordance with the frequencies required pursuant to 40 CFR Part 60 and 40 CFR Part 75; or may follow relative accuracy test audit frequency requirements for monitoring systems subject to 40 CFR 75, Appendix B, in lieu of frequencies required in 40 CFR Part 60. In either case, results shall be recorded and reported in units of the applicable standard(s) in accordance with 40 CFR Part 60.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits pursuant to 40 CFR Part 60, and linearity checks pursuant to 40 CFR Part 75; however, linearity checks completed pursuant to 40 CFR Part 75, Appendix B, may be substituted for the quarterly cylinder gas or relative accuracy audits required per 40 CFR Part 60.

(3) The permittee shall maintain a written quality assurance/quality control plan for the continuous CO monitoring system, designed to ensure continuous valid and representative readings of CO emissions in units of the applicable standard(s). The fuel flow monitor/meter shall be maintained as required in Part 75, Appendix D. Except as allowed below, the plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.



The plan shall include the requirement to conduct relative accuracy test audits for the continuous CO monitoring system in accordance with the frequencies required for monitoring systems subject to 40 CFR 60, or may follow relative accuracy test audit frequency requirements for monitoring systems subject to 40 CFR 75, Appendix B. In either case, results shall be recorded and reported in units of the applicable standard(s) in accordance with 40 CFR Part 60.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; however, the quarterly cylinder gas audit and relative accuracy audit frequency requirements may be adjusted to coincide with linearity checks completed for continuous emissions monitoring systems subject to 40 CFR Part 75, Appendix B requirements.

- (4) The permittee shall maintain a written quality assurance/quality control plan for the continuous O<sub>2</sub> monitoring system, designed to ensure continuous valid and representative readings of O<sub>2</sub> emissions in units of the applicable standard(s). Except as allowed below, the plan shall follow the requirements of 40 CFR Part 60, Appendix F and 40 CFR Part 75, Appendix B. The quality assurance/quality control plan and a logbook dedicated to the continuous O<sub>2</sub> monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct relative accuracy test audits for the continuous O<sub>2</sub> monitoring system in accordance with the frequencies required pursuant to 40 CFR Part 60 and 40 CFR Part 75; or may follow relative accuracy test audit frequency requirements for monitoring systems subject to 40 CFR 75, Appendix B, in lieu of frequencies required in 40 CFR Part 60. In either case, results shall be recorded and reported in units of the applicable standard(s) in accordance with 40 CFR Part 60.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits pursuant to 40 CFR Part 60, and linearity checks pursuant to 40 CFR Part 75; however, linearity checks completed pursuant to 40 CFR Part 75, Appendix B, may be substituted for the quarterly cylinder gas or relative accuracy audits required per 40 CFR Part 60.