



10/21/2014

Certified Mail

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

Mr. John Hendricks  
Appalachian Power Co, Dresden Plant  
1 Riverside Plaza  
Columbus, OH 43215

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL

Facility ID: 0660000247  
Permit Number: P0112692  
Permit Type: OAC Chapter 3745-31 Modification  
County: Muskingum

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, Zanesville Times Recorder. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically 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. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall  
Permit Review/Development Section  
Ohio EPA, DAPC  
50 West Town Street, Suite 700  
P.O. Box 1049  
Columbus, Ohio 43216-1049

and Ohio EPA DAPC, Southeast District Office  
2195 Front Street  
Logan, OH 43138

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501.

Sincerely,

Erica R. Engel-Ishida, Interim Manager  
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 -Via E-Mail Notification  
Ohio EPA-SEDO; West Virginia

PUBLIC NOTICE  
Issuance of Draft Air Pollution Permit-To-Install  
Appalachian Power Co, Dresden Plant

Issue Date: 10/21/2014  
Permit Number: P0112692  
Permit Type: OAC Chapter 3745-31 Modification  
Permit Description: Chapter 31 modification to: increase the hours of operation of the duct burners, increase the length of startup and shut down (with allowable emission increase in startup and shutdown emissions) and increase the annual operating hours for the combustion turbines when burning natural gas by reducing the allowable annual operating hours while burning oil.  
Facility ID: 0660000247  
Facility Location: Appalachian Power Co, Dresden Plant  
9595 McGlade School Rd,  
Dresden, OH 43821  
Facility Description: Fossil Fuel Electric Power Generation

The Director of the Ohio Environmental Protection Agency issued the draft permit above. The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the permit # or: Mykal Mercer, Ohio EPA DAPC, Southeast District Office, 2195 Front Street, Logan, OH 43138. Ph: (740)385-8501





## Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

Appalachian Power Co., Dresden Plant (Dresden) located in Dresden, Ohio (Muskingum County). Dresden is a combined cycle turbine power plant operating under PTI P0108298. Dresden's significant emissions units are 2 – 171.7 MW GE 7FA natural gas/fuel oil fired dry low NOx combustion turbines operating in combined cycle mode controlled by SCR and a 65 mmbtu/hr auxiliary boiler. P0112692 is a Chapter 31 modification to P0108298, issued on 03/30/2012; Dresden currently has a 2,000 hour operating yearly limitation for the duct burners and this permit action will allow an operating hour increase up to 5,000 hours per year. Dresden has also requested to increase the allowable length of a startup and shut down cycle (SUSD) and increase the allowable SUSD emissions (NOx, CO, and VOC). Finally, Dresden has requested to increase the number of annual operating hours for the combustion turbines when burning natural gas by reducing the annual operating hours while burning oil. Currently, Dresden has an 8,260 hour operating limitation while burning natural gas and a 500 hour operating limitation while burning oil. For every hour Dresden operates above the 8,260 hour limitation while burning NG, the oil operating allowance will decrease by an hour.

Dresden first submitted an application described above on 01/28/2013, but SEDO requested clarifications regarding their calculations and the approach for determining if a significant increase will occur. On 05/31/2013, Dresden submitted a second modification request clarifying their first application. Ohio EPA deemed the 05/31/2013 application complete and began processing their request. Dresden used the emissions unit permitted PTE as their baseline emissions to determine if a significant increase will occur. According to OAC rule 3745-31-01(O)(3), allows a new emissions unit to use their permitted PTE if they have not been in operation for 24 months - OAC Rule 3745-31-01(MM) defines a new emissions unit as one that has operated less than 24 months. Dresden submitted initial start-up notifications on 10/17/2011 and 10/29/2011 for the EUs in question. Based on the rules above and the timeline of the EU's start-up, Ohio EPA agrees with Dresden's approach and that a significant emissions increase is not triggered.

In the original facility BACT analysis, the original applicant elected to limit the hours of duct burner operation to 2,000 hours. Nothing was cited for this limitation and it was not an obvious rule avoidance as they were already a major PSD source and completed the necessary application. In this permit action, Dresden is requesting to raise the duct burner hourly limitation to 5,000 hours and therefore electing to be subject to synthetic minor regulations in order to stay out of New Source review.

On 09/05/2014, facility requested Ohio EPA to not change the short term BAT limits.

3. Facility Emissions and Attainment Status:

As the facility is located in Dresden, Muskingum County, at present it is in attainment and is not an Appendix A area per OAC rule 3745-17-08.



4. Source Emissions:

These EUs are a source of NOx, CO, PE, SO<sub>2</sub>, VOC, NH<sub>4</sub>, formaldehyde, and sulfuric acid.

5. Conclusion:

The operational, monitoring, recordkeeping, reporting, and testing requirements are sufficient to ensure compliance with the emission limitation established in this permit.

6. Please provide additional notes or comments as necessary:

None

7. Total Permit Allowable Emissions Summary (for informational purposes only):

<u>Pollutant</u>	<u>Tons Per Year</u>
NOx	199.6
PE	99.3
SO <sub>2</sub>	32.4
CO	290.0
VOC	41.1
NH <sub>3</sub>	126.2
Formaldehyde	4.7
H <sub>2</sub> SO <sub>4</sub>	3.2



**DRAFT**

**Division of Air Pollution Control  
Permit-to-Install  
for  
Appalachian Power Co, Dresden Plant**

Facility ID:	0660000247
Permit Number:	P0112692
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	10/21/2014
Effective:	To be entered upon final issuance





**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
Appalachian Power Co, Dresden Plant

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**Draft Permit-to-Install**  
Appalachian Power Co, Dresden Plant  
**Permit Number:** P0112692  
**Facility ID:** 0660000247  
**Effective Date:** To be entered upon final issuance

## Authorization

Facility ID: 0660000247  
Facility Description: Power Plant.  
Application Number(s): A0046656, A0047942  
Permit Number: P0112692  
Permit Description: Chapter 31 modification to: increase the hours of operation of the duct burners, increase the length of startup and shut down (with allowable emission increase in startup and shutdown emissions) and increase the annual operating hours for the combustion turbines when burning natural gas by reducing the allowable annual operating hours while burning oil.  
Permit Type: OAC Chapter 3745-31 Modification  
Permit Fee: \$2,000.00 *DO NOT send payment at this time, subject to change before final issuance*  
Issue Date: 10/21/2014  
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

Appalachian Power Co, Dresden Plant  
9595 McGlade School Rd  
Dresden, OH 43821

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:

Ohio EPA DAPC, Southeast District Office  
2195 Front Street  
Logan, OH 43138  
(740)385-8501

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

Craig W. Butler  
Director



## Authorization (continued)

Permit Number: P0112692  
 Permit Description: Chapter 31 modification to: increase the hours of operation of the duct burners, increase the length of startup and shut down (with allowable emission increase in startup and shutdown emissions) and increase the annual operating hours for the combustion turbines when burning natural gas by reducing the allowable annual operating hours while burning oil.

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

**Group Name: combustion turbines**

<b>Emissions Unit ID:</b>	<b>P001</b>
Company Equipment ID:	CT1A
Superseded Permit Number:	P0108298
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P002</b>
Company Equipment ID:	CT1B
Superseded Permit Number:	P0108298
General Permit Category andType:	Not Applicable



**Draft Permit-to-Install**  
Appalachian Power Co, Dresden Plant  
**Permit Number:** P0112692  
**Facility ID:** 0660000247  
**Effective Date:** To be entered upon final issuance

## **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) 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 Ohio EPA DAPC, Southeast District Office.



- (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 Ohio EPA DAPC, Southeast District Office. The written reports shall be submitted 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 to the Ohio EPA DAPC, Southeast District Office 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 Ohio EPA DAPC, Southeast District Office 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) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted



local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete

- b) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - (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.
- c) The permittee shall submit progress reports to the Ohio EPA DAPC, Southeast District Office 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 Ohio EPA DAPC, Southeast District Office.
- 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 Ohio EPA DAPC, Southeast District Office. 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, 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) not exempt from the requirement to obtain a Permit-to-Install.

**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 permittee 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 "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director 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.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- 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 operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.



**13. Construction Compliance Certification**

The applicant shall identify the following dates in the "Air Services" 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 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**



**Draft Permit-to-Install**  
Appalachian Power Co, Dresden Plant

**Permit Number:** P0112692

**Facility ID:** 0660000247

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

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.

## **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. The following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart GG: P001 and P002. The complete NSPS requirements may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District Office or local air agency.
3. The following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart Da: P001 and P002. The complete NSPS requirements may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District Office or local air agency.
4. 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. The permittee shall also comply with any subsequent federally mandated programs that may replace the CAIR program affecting electric generating facilities.
5. Clean Air Interstate Rule – OAC Chapter 3745-109.

P001 – 171.7 MW GE 7FA natural gas / fuel oil –fired dry low NO<sub>x</sub> (DLN) combustion turbine with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR);

P002 – 171.7 MW GE 7FA natural gas / fuel oil –fired dry low NO<sub>x</sub> (DLN) combustion turbine with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR):

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).



**Draft Permit-to-Install**  
Appalachian Power Co, Dresden Plant  
**Permit Number:** P0112692  
**Facility ID:** 0660000247  
**Effective Date:** To be entered upon final issuance

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



**1. Emissions Unit Group - 171.7 MW Turbines 1 and 2: P001, P002,**

EU ID	Operations, Property and/or Equipment Description
P001	Turbine No. 1 to generate electrical power. 171.7 MW GE 7FA natural gas / fuel oil – fired dry low NO <sub>x</sub> (DLN) combustion turbine with duct firing operating in combined cycle mode controlled by Selective Catalytic Reduction (SCR).
P002	Turbine No. 2 to generate electrical power. 171.7 MW GE 7FA natural gas / fuel oil – fired dry low NO <sub>x</sub> (DLN) combustion turbine 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) g)(1), g)(2), and g)(3)
- 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.	OAC rule 3745-31-05(A)(3) and ORC 3704.03(T)	<p><b>EMISSIONS LIMITS WHEN FIRING NATURAL GAS (WITHOUT DUCT BURNER FIRING), EXCEPT DURING PERIODS OF STARTUP/SHUTDOWN AS DEFINED IN c)(2)</b></p> <p>Nitrogen oxides (NO<sub>x</sub>) emissions shall not exceed 25.0 lbs/hr.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 1.6 lbs/hr.</p> <p>Particulate emissions (PE) shall not exceed 18.3 lbs/hr.</p> <p>See c)(1).</p> <p>Carbon monoxide (CO) emissions shall not exceed 22.0 lbs/hr.</p> <p>Volatile organic compounds (VOC) emissions shall not exceed 3.2 lbs/hr.</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Ammonia (NH<sub>3</sub>) emissions shall not exceed 26.0 lbs/hr.</p> <p>The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, OAC rule 3745-17-07(A), and OAC rules 3745-31-10 through 20.</p> <p><b>EMISSIONS LIMITS WHEN FIRING NATURAL GAS (WITH DUCT BURNER FIRING), EXCEPT DURING PERIODS OF STARTUP/SHUTDOWN AS DEFINED IN c)(2)</b></p> <p>NO<sub>x</sub> emissions shall not exceed 29.0 lbs/hr.</p> <p>SO<sub>2</sub> emissions shall not exceed 1.8 lbs/hr.</p> <p>PE shall not exceed 21.8 lbs/hr.</p> <p>See c)(1).</p> <p>CO emissions shall not exceed 49.0 lbs/hr.</p> <p>VOC emissions shall not exceed 6.6 lbs/hr.</p> <p>NH<sub>3</sub> emissions shall not exceed 31.0 lbs/hr.</p> <p>The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart Da and GG, OAC rule 3745-17-07(A), and OAC rules 3745-31-10 through 20.</p> <p><b>STARTUP AND SHUTDOWN EMISSIONS WHEN FIRING NATURAL GAS</b></p> <p>NO<sub>x</sub> emissions shall not exceed 37.6 tons per rolling, 12-month period.</p> <p>CO emissions shall not exceed 103.0 tons per rolling, 12-month period.</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>VOC emissions shall not exceed 16.0 tons per rolling, 12-month period.</p> <p>See c)(2), c)(3), c)(5), and c)(7).</p> <p><b>TOTAL TONS PER YEAR WHEN FIRING NATURAL GAS A MAXIMUM OF 8260 HOURS</b></p> <p>Emissions for each rolling 12-month period shall not exceed:</p> <p>150.9 tonsNO<sub>x</sub>;  84.3 tonsPE;  7.1 tonsSO<sub>2</sub>;  261.4 tonsCO;  37.7 tonsVOC ;  119.9 tonsNH<sub>3</sub>;  4.6 tons Formaldehyde; and  0.8 ton H<sub>2</sub>SO<sub>4</sub>.</p> <p>See c)(2), c)(3), c)(5), c)(7), c)(9), c)(11) and c)(12).</p> <p><b>EMISSIONS LIMITS WHEN FIRING NO. 2 OIL/DISTILLATE OIL, EXCEPT DURING PERIODS OF STARTUP/SHUTDOWN AS DEFINED IN c)(2)</b></p> <p>Note: Duct burner will not operate during the firing of No. 2 distillate (fuel) oil.</p> <p>NO<sub>x</sub> emissions shall not exceed 177 lbs/hr.</p> <p>PE shall not exceed 60 lbs/hr.</p> <p>SO<sub>2</sub>emissions shall not exceed 101 lbs/hr.</p> <p>See c)(1).</p> <p>CO emissions shall not exceed 72 lbs/hr.</p> <p>VOC emissions shall not exceed 8.0 lbs/hr.</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>NH<sub>3</sub> emissions shall not exceed 25 lbs/hr.</p> <p>Formaldehyde emissions shall not exceed 0.58 lb/hr.</p> <p>H<sub>2</sub>SO<sub>4</sub> emissions shall not exceed 9.5 lbs/hr.</p> <p>The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, 3745-17-07(A), and OAC rules 3745-31-10 through 20.</p> <p><b>STARTUP AND SHUTDOWN EMISSIONS WHEN FIRING # 2 OIL / DISTILLATE</b></p> <p>NO<sub>x</sub> emissions shall not exceed 4.45 tons per rolling, 12-month period.</p> <p>CO emissions shall not exceed 10.6 tons per rolling, 12-month period.</p> <p>VOC emissions shall not exceed 1.35 tons per rolling, 12-month period.</p> <p>See c)(2), c)(4), c)(6), and c)(8).</p> <p><b>TOTAL TONS PER YEAR WHEN FIRING # 2 OIL / DISTILLATE A MAXIMUM OF 500 HOURS</b></p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>48.7 tons NO<sub>x</sub>;          15.0 tons PE;          25.3 tons SO<sub>2</sub>;          28.6 tons CO;          3.4 tons VOC;          6.3 tons NH<sub>3</sub>;          0.1 ton formaldehyde; and          2.4 tons H<sub>2</sub>SO<sub>4</sub>.</p> <p>See c)(2), c)(4), c)(6), c)(8), c)(10) and c)(11).</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p><b>TOTAL TONS PER YEAR FOR THIS EMISSION UNIT WHEN FIRING NATURAL GAS 8760 HOURS.</b></p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>157.1 tonsNO<sub>x</sub>;            88.9 tonsPE;            27.7 tonsSO<sub>2</sub>;            266.9 tonsCO;            38.5 tonsVOC ;            126.4 tonsNH<sub>3</sub>;            4.9 tons Formaldehyde; and            2.9 ton H<sub>2</sub>SO<sub>4</sub>.</p> <p><b>TOTAL TONS PER YEAR FOR THIS EMISSION UNIT WHEN FIRING BOTH FUELS.</b></p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>199.6 tons NO<sub>x</sub>;            99.3 tons PE;            32.4 tons SO<sub>2</sub>;            290.0 tons CO;            41.1 tons VOC;            126.2 tons NH<sub>3</sub>;            4.7 tons formaldehyde; and            3.2 tons H<sub>2</sub>SO<sub>4</sub>.</p> <p>See c)(2) – c)(11).</p>
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	<p><b>EMISSIONS LIMITS WHEN FIRING NATURAL GAS (WITHOUT DUCT BURNER FIRING), EXCEPT DURING PERIODS OF STARTUP/SHUTDOWN AS DEFINED IN c)(2)</b></p> <p>Formaldehyde emissions shall not exceed 1.1 lbs/hr.</p> <p>Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) emissions shall not exceed 0.2 lb/hr.</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-10 through 20.</p> <p><b>EMISSIONS LIMITS WHEN FIRING NATURAL GAS (WITH DUCT BURNER FIRING), EXCEPT DURING PERIODS OF STARTUP/SHUTDOWN AS DEFINED IN c)(2)</b></p> <p>Formaldehyde emissions shall not exceed 1.3lbs/hr.</p> <p>H2SO4 emissions shall not exceed 0.2 lb/hr.</p> <p>The requirements of this rule also include compliance with the requirements OAC rules 3745-31-10 through 20.</p> <p><b>TOTAL TONS PER YEAR WHEN FIRING NATURAL GAS A MAXIMUM OF 8260 HOURS</b></p> <p>Emissions for each rolling 12-month period shall not exceed:</p> <p>4.6 tons Formaldehyde; and 0.8 ton H2SO4.</p> <p>See c)(2), c)(3), c)(5), c)(7), c)(9), c)(11) and c)(12).</p> <p><b>EMISSIONS LIMITS WHEN FIRING NO. 2 OIL/DISTILLATE OIL, EXCEPT DURING PERIODS OF STARTUP/SHUTDOWN AS DEFINED IN c)(2)</b></p> <p>Note: Duct burner will not operate during the firing of No. 2 distillate (fuel) oil.</p> <p>Formaldehyde emissions shall not exceed 0.58 lb/hr.</p> <p>H2SO4 emissions shall not exceed 9.5</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>lbs/hr.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-10 through 20.</p> <p><b>TOTAL TONS PER YEAR WHEN FIRING # 2 OIL / DISTILLATE A MAXIMUM OF 500 HOURS</b></p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>0.1 ton formaldehyde; and 2.4 tons H2SO4.</p> <p>See c)(2), c)(4), c)(6), c)(8), c)(10) and c)(11).</p> <p><b>TOTAL TONS PER YEAR FOR THIS EMISSION UNIT WHEN FIRING NATURAL GAS 8760 HOURS.</b></p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>4.9 tons Formaldehyde; and 2.9 ton H2SO4.</p> <p><b>TOTAL TONS PER YEAR FOR THIS EMISSION UNIT WHEN FIRING BOTH FUELS.</b></p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>4.7 tons formaldehyde; and 3.2 tons H2SO4.</p> <p>See c)(2) – c)(11).</p> <p>See b)(2)a. below</p>
c.	OAC rule 3745-31-05(D) (Synthetic minor restriction to avoid PSD increment).	<p>199.6 tons NOx per rolling 12-month period;</p> <p>99.3 tons PE per rolling 12-month period;</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		32.4 tons SO <sub>2</sub> per rolling 12-month period;  290.0 tons CO per rolling 12-month period;  41.1 tons VOC per rolling 12-month period;  126.2 tons NH <sub>3</sub> per rolling 12-month period;  4.7 tons formaldehyde, and  3.2 tons H <sub>2</sub> SO <sub>4</sub> per rolling 12-month period.  See c)(12) for restrictions to avoid new source review (NSR).
d.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/06	See b)(2)b. below.
e.	OAC rule 3745-17-07(A)	Visible PE from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
f.	OAC rules 3745-31-10 through 20	The following emissions limitations shall apply except during periods of startup/shutdown as defined in c)(2):  NO <sub>x</sub> emissions shall not exceed 3.5 ppmvd at 15% oxygen (O <sub>2</sub> ) when firing natural gas.  NO <sub>x</sub> emissions shall not exceed 21.8 ppmvd at 15% O <sub>2</sub> when firing No. 2 fuel oil.  CO emissions shall not exceed 6 ppmvd at 15% O <sub>2</sub> when firing natural gas without duct burning.  CO emissions shall not exceed 13.5 ppmvd at 15% O <sub>2</sub> when firing natural gas with duct burning.  CO emissions shall not exceed 38 ppmvd



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>at 15% O<sub>2</sub> when firing No. 2 fuel oil.</p> <p>See b)(2)a. through b)(2)e. and c)(1).</p> <p>Emissions for each rolling, 12-month period shall not exceed:</p> <p>199.6 tons NO<sub>x</sub>;            32.4 tons SO<sub>2</sub>            99.3 tons PE;            290.0 tons CO;            41.1 tons VOC; and            3.2 tons H<sub>2</sub>SO<sub>4</sub></p>
g.	OAC rule 3745-17-11(B)(4)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).
h.	OAC rule 3745-18-06(F)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).
i.	40 CFR Part 60, Subpart GG [In accordance with 40 CFR 60.330(a) and (b), this emissions unit is a stationary gas turbine with a heat input at peak load equal to or greater than 10.7 gigajoules per hour which commenced construction after October 3, 1977, and is subject to the emissions limitations/control measures specified in this section.]	<p>No owner or operator shall cause to be discharged into the atmosphere any emissions in excess of:</p> <p>99 ppmvd NO<sub>x</sub> at 15% O<sub>2</sub>; and            150 ppmvd SO<sub>2</sub> at 15% O<sub>2</sub>;</p> <p>No owner or operator shall burn any fuel which contains total sulfur in excess of 0.8%, by weight.</p> <p>The emissions limitations specified by this rule are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(A)(3) and OAC rules 3745-31-10 through 20.</p>
j.	40 CFR Part 60, Subpart Da [In accordance with 40 CFR 60.40Da(a) and (e), this emissions unit is an electric utility combined cycle gas turbine other than an IGCC capable of combusting more than 73 MW heat input of fossil fuel which commenced construction after September 18, 1978. In accordance with 60.40Da(e)(2), only emissions	<p>No owner or operator shall cause to be discharged into the atmosphere any emissions in excess of:</p> <p>13 ng/J (0.03 lb/mmBtu) PM;</p> <p>20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity;</p>



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	resulting from the combustion of fuels in the steam generating unit (i.e. duct burners) are subject to the emissions limitations/control measures specified in this section.]	86 ng/J (0.20 lb/mmBtu) SO <sub>2</sub> , as a 30-day rolling average;  200 ng/J gross energy output (1.6 lb/MWh) NO <sub>x</sub> , as a 30-day rolling average, except as provided under 40 CFR 60.48Da(k); and  65 ng/J heat input (0.15 lb/mmBtu) NO <sub>x</sub> , as a 30-day rolling average.
k.	40 CFR 60.1-60.19	The owner or operator shall comply with all applicable requirements of this rule, except as provided in 40 CFR Part 60, Subpart GG and 40 CFR Part 60, Subpart Da.
l.	40 CFR Part 75	If the permittee is subject to the requirements of 40 CFR Part 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.
m.	OAC rule 3745-103	If the permittee is subject to the requirements of 40 CFR Part 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.

(2) Additional Terms and Conditions

- a. As part of the Best Available Control Technology (BACT) determination for NO<sub>x</sub>, the permittee shall install and maintain dry low NO<sub>x</sub> burners, a selective catalytic reduction (SCR) system, and a water injection system on this emissions unit. Operation of these control systems shall reduce emissions to the NO<sub>x</sub> limitations specified in b)(1)c.
- b. As part of the Best Available Control Technology (BACT) determination for CO, the permittee shall establish and maintain a plan to ensure that the burners are operated in accordance with good combustion practices as recommended by the burner manufacturer.



- c. As part of the Best Available Control Technology (BACT) determination for PM/PM<sub>10</sub> and SO<sub>2</sub>, the permittee shall only use natural gas or low sulfur No. 2 fuel oil (as specified in c)(1)) in this emissions unit.
- d. As part of the Best Available Control Technology (BACT) determination for VOC, the permittee shall install and maintain dry low NO<sub>x</sub> burners, and shall establish and maintain a plan to ensure that the burners are operated in accordance with good combustion practices as recommended by the burner manufacturer.
- e. In accordance with good engineering practices, the dry low NO<sub>x</sub> burners, SCR system, and water injection system on this emissions unit 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 manuals, as provided by the manufacturer.
- f. The emissions of Hazardous Air Pollutants (HAPs), as defined in Section 112 (b) of the Clean Air Act, from emissions units P001 and P002 combined, shall not exceed 9.9 tons per year for an individual HAP and 24.9 tons per year for any combination of HAPs, per rolling 12 month period.
- g. The permittee shall evaluate CO emissions from the combustion turbine in accordance with e)(10) to determine whether a lower CO emission limit may be reliably achieved when the duct burners are being fired while complying with other emission limits and without significant risk to equipment or personnel. This evaluation shall also examine whether there will be significant increase in NO<sub>x</sub> or ammonia emissions, as well as unreasonable increase in maintenance and repair needed for the combustion turbine.

Based upon the results of this evaluation if Ohio EPA finds that the combustion turbine can consistently comply with a more stringent emissions limitation for CO emissions when the duct burners are being fired, it may set those limitations as a result of this evaluation. Additional parameters or factors, e.g., the firing rate of the duct burners may be included in such limits to address particular modes of operation during which such limits may or may not be readily achievable.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas or No.2 distillate (fuel) oil in this emissions unit. The maximum sulfur content of the natural gas shall not exceed 0.3 grains per 100 standard cubic feet. The maximum sulfur content of the No. 2 fuel oil is 0.05 percent sulfur content by weight.
- (2) Startup shall be defined as the operating period prior to reaching Mode 6Q following the initiation operations and shutdown shall be defined as the operating period when the combustion turbine leaves Mode 6Q following the initiation of the cessation of operations. Under no circumstances shall startups exceed 6 hours in duration nor shall shutdowns exceed 1 hour in duration. Startups and shutdowns shall be limited to 285 cycles (one startup and one shutdown per cycle) per year for natural gas and 22 cycles (one startup and one shutdown per cycle) per year for fuel oil.



Hot Start - startup occurs within eight (8) hours after plant shutdown  
 Warm Start - startup occurs between eight (8) hours to seventy-two (72) hours after a plant shutdown  
 Cold Start - startup occurs more than seventy-two (72) hours after a plant shutdown

- (3) Startup and shutdown emissions when firing natural gas shall not cause emissions of NO<sub>x</sub> to exceed 37.6 tons, as a rolling, 12-month summation based on monitoring data from the NO<sub>x</sub> continuous emissions monitoring system. Additionally, each startup/shutdown cycle shall not exceed 842 lbsNO<sub>x</sub>.
- (4) Startup and shutdown emissions when firing No. 2 fuel oil shall not cause emissions of NO<sub>x</sub> to exceed 4.45 tons, as a rolling, 12-month summation based on monitoring data from the NO<sub>x</sub> continuous emissions monitoring system. Additionally, each startup/shutdown cycle shall not exceed 604 lbsNO<sub>x</sub>.
- (5) Startup and shutdown emissions when firing natural gas shall not cause emissions of CO to exceed 103.0 tons, as a rolling, 12-month summation based on monitoring data from the CO continuous emissions monitoring system. Additionally, each startup/shutdown cycle shall not exceed 2,031 lbs CO.
- (6) Startup and shutdown emissions when firing No. 2 fuel oil shall not cause emissions of CO to exceed 10.6 tons, as a rolling, 12-month summation based on monitoring data from the CO continuous emissions monitoring system. Additionally, each startup/shutdown cycle shall not exceed 4,208 lbs CO.
- (7) Startup and shutdown emissions when firing natural gas shall not cause emissions of VOC to exceed 16.0 tons, as a rolling, 12-month summation based on the following equations:

$$X = \sum_{i=1}^n ((CS * VOC_c) + (CS_2 * VOC_{c2}) + (WS * VOC_w) + (WS_2 * VOC_{w2}) + (HS * VOC_h)) / 2000$$

where:  
 X = total tons of VOC emissions per month  
 CS = number of cold startup/shutdown cycles per month when firing natural gas  
 VOC<sub>c</sub> = VOC emission factor for cold startup/shutdown cycle (586 lbs/startup/shutdown)  
 CS<sub>2</sub> = number of cold startup/shutdown cycles per month when firing natural gas with second unit on-line  
 VOC<sub>c2</sub> = VOC emission factor for cold startup/shutdown cycle with other unit on-line (86 lbs/startup/shutdown)  
 WS = number of warm startup/shutdown cycles per month when firing natural gas  
 VOC<sub>w</sub> = VOC emission factor for warm startup/shutdown cycle (122 lbs/startup/shutdown)  
 WS<sub>2</sub> = number of warm startup/shutdown cycles per month when firing natural gas with second unit on-line  
 VOC<sub>w2</sub> = VOC emission factor for warm startup/shutdown cycle with other unit on-line (18 lbs/startup/shutdown)



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HS = number of hot startup/shutdown cycles per month when firing natural gas  
 VOC<sub>h</sub> = VOC emission factor for hot startup/shutdown cycle (18 lbs/startup/shutdown)  
 n = total number of startup/shutdown cycles per month when firing natural gas

Note: Emission factors for startup/shutdown cycles are the same operating with and without the other unit on-line.

and

$$\sum_{i=1}^{n=12} (X_i) \leq 16.0 \text{ tons VOC, as a rolling, 12-month summation}$$

Note: The above emission factors may be revised based upon Ohio EPA validated emissions testing.

- (8) Startup and shutdown emissions when firing No. 2 fuel oil shall not cause emissions of VOC to exceed 1.35 tons, as a rolling, 12-month summation based on the following equations:

$$X = \sum_{i=1}^n ((CS * VOC_c) + (CS_2 * VOC_{c2}) + (WS * VOC_w) + (WS_2 * VOC_{w2}) + (HS * VOC_h)) / 2000$$

where:

X = total tons of VOC emissions per month  
 CS = number of cold startup/shutdown cycles per month when firing No. 2 fuel oil  
 VOC<sub>c</sub> = VOC emission factor for cold startup/shutdown cycle (382 lbs/startup/shutdown)  
 CS<sub>2</sub> = number of cold startup/shutdown cycles per month when firing No. 2 fuel oil with second unit on-line  
 VOC<sub>c2</sub> = VOC emission factor for cold startup/shutdown cycle with other unit on-line (123 lbs/startup/shutdown)  
 WS = WS = number of warm startup/shutdown cycles per month when firing No. 2 fuel oil  
 VOC<sub>w</sub> = VOC emission factor for warm startup/shutdown cycle (114 lbs/startup/shutdown)  
 WS<sub>2</sub> = number of warm startup/shutdown cycles per month when firing No. 2 fuel oil with second unit on-line  
 VOC<sub>w2</sub> = VOC emission factor for warm startup/shutdown cycle with other unit on-line (77 lbs/startup/shutdown)  
 HS = number of hot startup/shutdown cycles per month when firing No. 2 fuel oil  
 VOC<sub>h</sub> = VOC emission factor for startup/shutdown cycle (77 lbs/startup/shutdown)  
 n = total number of startup/shutdown cycles per month when firing No. 2 fuel oil

Note: Emission factors for hot startup/shutdown cycles are the same operating with and without the other unit on-line.



and

$$\sum_{i=1}^{n=12} (X_i) \leq 1.35 \text{ tons VOC, as a rolling, 12-month summation}$$

Note: The above emission factors may be revised based upon Ohio EPA validated emissions testing.

- (9) The maximum annual hours of operation of the turbine for this emissions unit shall not exceed 8,260 hours, based upon a rolling, 12-month summation for the firing of natural gas.

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

<u>Month</u>	<u>Cumulative hours of Operation for Natural Gas</u>
1	720
1-2	1,440
1-3	2,160
1-4	2,880
1-5	3,600
1-6	4,320
1-7	5,040
1-8	5,760
1-9	6,480
1-10	7,200
1-11	7,920
1-12	8,260

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

- (10) The maximum annual hours of operation of the turbine for this emissions unit shall not exceed 500 hours, based upon a rolling, 12-month summation when firing No. 2 fuel oil.

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

<u>Month</u>	<u>Cumulative hours of Operation for No.2 Distillate (Fuel) Oil</u>
1	500



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1-2	500
1-3	500
1-4	500
1-5	500
1-6	500
1-7	500
1-8	500
1-9	500
1-10	500
1-11	500
1-12	500

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

- (11) The permittee may operate this emissions unit in excess of the 8,260 hours based upon a rolling, 12-month summation for the firing of natural gas as specified in c)(9) of this section by reducing the maximum annual hours of operation of the turbine specified in c)(10) of 500 hours, based upon a rolling, 12-month summation when firing No. 2 fuel oil. For every hour the permittee operates this emissions unit in excess of the 8,260 hours based upon a rolling, 12-month summation for the firing of natural gas, the permittee shall subtract the allowable maximum hours, based upon a rolling, 12-month summation when firing No. 2 fuel oil by an hour. The permittee may not operate this emissions unit in excess of the maximum 500 hours, based upon a rolling, 12-month summation when firing No. 2 fuel oil.
- (12) The maximum annual hours of operation of the duct burners for this emissions unit shall not exceed 5,000 hours, based upon a rolling, 12-month summation.

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

<u>Month</u>	<u>Cumulative hours of Operation</u>
1	720
1-2	1, 440
1-3	5,000
1-4	5,000
1-5	5,000
1-6	5,000
1-7	5,000
1-8	5,000
1-9	5,000
1-10	5,000
1-11	5,000
1-12	5,000



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

(13) Continuous NO<sub>x</sub> Monitoring - Certified Systems  
Statement of Certification

Prior to the installation of the continuous NO<sub>x</sub> monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 6 for approval by the Ohio EPA, Central Office.

Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of such equipment pursuant to the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specifications 2, and 6, as well as 40 CFR Part 75. (40 CFR Part 75 NO<sub>x</sub> mass emissions determinations as allowed in 40 CFR Part 75, Appendix F, using the emissions unit's heat input may be used in lieu of certification testing to show compliance with 40 CFR Part 60, Appendix B, Performance Specification 6.). Personnel from the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the appropriate Ohio EPA District Office or local air agency within 60 days after the test is completed. Copies of the test results shall be sent to the appropriate Ohio EPA District Office or local air agency and the Ohio EPA, Central Office. Certification of the continuous NO<sub>x</sub> monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 6, and 40 CFR Part 75.

- (14) Within 180 days of initial unit startup, the permittee shall develop 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. The plan shall follow the requirements of the appropriate sections 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.

(15) Continuous CO Monitoring - Certified Systems  
Statement of Certification

Prior to the installation of the continuous CO monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 and 6 for approval by the Ohio EPA, Central Office.



Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous CO monitoring system pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specifications 4 and 6. (CO mass emissions may be calculated in the same manner as NO<sub>x</sub> emissions as allowed in Section II(6), using the appropriate CO values in place of the cited NO<sub>x</sub> values.). Personnel from the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the appropriate Ohio EPA District Office or local air agency within 60 days after the test is completed. Copies of the test results shall be sent to the appropriate Ohio EPA District Office or local air agency and the Ohio EPA, Central Office. Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 4 and 6.

- (16) Within 180 days of initial unit startup, the permittee shall develop a written quality assurance/quality control plan for the continuous CO monitoring system designed to ensure continuous valid and representative readings of CO. 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.
- (17) Continuous O<sub>2</sub> Monitoring - Certified Systems  
Statement of Certification

Prior to the installation of the continuous O<sub>2</sub> monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 3 for approval by the Ohio EPA, Central Office.

Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of such equipment pursuant to the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 3, and 40 CFR Part 75. Personnel from the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the appropriate Ohio EPA District Office or local air agency within 60 days after the test is completed. Copies of the test results shall be sent to the appropriate Ohio EPA District Office or local air agency and the Ohio EPA, Central Office.

Certification of the continuous O<sub>2</sub> monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of the appropriate sections of ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 3, and 40 CFR Part 75.



- (18) Within 180 days of initial unit startup, the permittee shall develop 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. The plan shall follow the requirements of the appropriate sections 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.
  - (19) This source shall be constructed such that emissions testing in accordance with 40 CFR Part 60.8 may be accomplished, if required.
  - (20) See 40 CFR Part 60, Subpart GG (40 CFR 60.330-60.335).
  - (21) See 40 CFR Part 60, Subpart Da (40 CFR 60.40Da-60.52Da).
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information for this emissions unit:
    - a. the natural gas usage rate for each month (in million standard cubic feet); and
    - b. the No. 2 fuel oil usage for each month in gallons.
  - (2) The permittee shall maintain monthly records of the following information for this emissions unit:
    - a. hours of operation of the turbine;
    - b. hours of operation of the duct burners;
    - c. hours of operation when firing No. 2 fuel;
    - d. beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the hours of operation for each of a. though c. above; and
    - e. also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative hours of operation for each calendar month for each of a. though c. above.
  - (3) The permittee shall operate and maintain existing equipment to continuously monitor and record NO<sub>x</sub> from this emissions unit in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 and 40 CFR Part 75.

The permittee shall maintain records of all data obtained by the continuous NO<sub>x</sub> monitoring system including, but not limited to, parts per million NO<sub>x</sub> on an instantaneous (one-minute) basis, emissions of NO<sub>x</sub> in units of the applicable standard in the



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

- (4) The permittee shall operate and maintain equipment to continuously monitor and record CO from this emissions unit in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of all data obtained by the continuous CO monitoring system including, but not limited to, parts per million CO on an instantaneous (one minute) basis, emissions of CO in units of the applicable standard in the appropriate averaging period, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

- (5) The permittee shall operate and maintain equipment to continuously monitor and record O<sub>2</sub> from this emissions unit in percent O<sub>2</sub>. Such continuous monitoring and recording equipment shall comply with the requirements in the appropriate sections specified in 40 CFR Part 60.13 and 40 CFR Part 75.

The permittee shall maintain records of all data obtained by the continuous O<sub>2</sub> monitoring system including, but not limited to, percent O<sub>2</sub> on an instantaneous (one-minute) basis, emissions of O<sub>2</sub> in units of the applicable standard in the appropriate averaging period, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

- (6) The permittee shall install, calibrate, operate, and maintain continuous monitoring systems to monitor and record the average hourly fuel consumption of the combustion turbine and duct burner. The fuel flow monitoring systems shall comply with the requirements of 40 CFR Part 75, Appendix D.

- (7) The permittee shall monitor the sulfur content and gross calorific value of the fuel being fired in the combustion turbine and duct burner. Fuel sampling and analysis shall be conducted according to the procedures and at the frequency specified by 40 CFR Part 75, Appendix D and 40 CFR Part 60, Subpart GG.

- (8) The permittee shall determine the hourly heat input rate to the combustion turbine and duct burner from the fuel flow rate as determined in term d)(6) and fuel gross calorific value as determined in term d)(7). The heat input rate shall be calculated in accordance with the procedures in Section 5 of 40 CFR Part 75, Appendix F.

- (9) The permittee shall maintain monthly records of the following information for each emissions unit:

- a. number of cold, warm, and hot startup/shutdown cycles when firing natural gas and when firing No. 2 fuel oil with only one unit on-line (P001 or P002);
- b. number of cold, warm, and hot startup/shutdown cycles when firing natural gas and when firing No. 2 fuel oil with the other unit on-line (P001 or P002);
- c. the duration of each startup;
- d. number of shutdowns, and the duration of each shutdown;



- e. NO<sub>x</sub>, CO, and VOC emissions when firing natural gas and when firing No. 2 fuel oil as determined in accordance with c)(3) through c)(8), in tons; and,
  - f. rolling, 12-month total NO<sub>x</sub>, CO, and VOC startup/shutdown emissions when firing natural gas and when firing No. 2 fuel oil.
- (10) The permittee shall maintain hourly records of the NO<sub>x</sub> and CO emissions rates, in lbs/hr, as obtained from d)(3) and (4) based upon an hourly averaging period as allowed in the appropriate sections of 40 CFR Part 60.
- (11) The permittee shall maintain monthly records of the following information for this emissions unit:
- a. during the first 12 calendar months of operation, the cumulative NO<sub>x</sub>, PE, SO<sub>2</sub>, CO, VOC, NH<sub>3</sub>, formaldehyde, and H<sub>2</sub>SO<sub>4</sub> emissions, in tons;
  - b. beginning after the first 12 calendar months of operation, the rolling, 12-month NO<sub>x</sub>, PE, SO<sub>2</sub>, CO, VOC, NH<sub>3</sub>, formaldehyde, and H<sub>2</sub>SO<sub>4</sub> emissions, in tons.
- (12) For each day during which the permittee burns a fuel other than natural gas or No. 2 fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in the emissions unit.
- (13) See 40 CFR Part 60, Subpart GG (40 CFR 60.330-60.335).
- (14) See 40 CFR Part 60, Subpart Da (40 CFR 60.40Da-60.52Da).
- e) Reporting Requirements
- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas or No. 2 fuel oil fuel was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurred.
- (2) The permittee shall submit deviation (excursion) reports which identify the following:
- a. all exceedances of the rolling, 12-month operating hours limitations specified in c)(9) through c)(11);
  - b. all exceedances of the rolling, 12-month NO<sub>x</sub>, PE, SO<sub>2</sub>, CO, VOC, NH<sub>3</sub>, formaldehyde, and H<sub>2</sub>SO<sub>4</sub> emissions, in tons;
  - c. for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative operating hours limitations;
  - d. For the first 12 calendar months of operation, all exceedances of the cumulative NO<sub>x</sub>, PE, SO<sub>2</sub>, CO, VOC, NH<sub>3</sub>, formaldehyde, and H<sub>2</sub>SO<sub>4</sub> emissions, in tons;
- These reports are due by the date described in the Standard Terms and Conditions of this permit.
- (3) Pursuant to OAC rule 3745-15-04, ORC sections 3704.03(l) and 3704.031, and 40 CFR Parts 60.7 and 60.13(h), 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 the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO<sub>x</sub> values in excess of the applicable limits specified in 40 CFR Part 76 or any limitations specified in the terms and conditions of this permit or variance. These reports shall also contain the total NO<sub>x</sub> emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter through the Ohio EPA's eBusiness Center: Air Services online web portal documenting any continuous NO<sub>x</sub> monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

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

- (4) Pursuant to OAC rule 3745-15-04, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.
- (5) Pursuant to OAC rule 3745-15-04, ORC sections 3704.03(I) and 3704.031, and 40 CFR Parts 60.7 and 60.13(h), 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 the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of CO values in excess of any applicable limitation(s) specified in OAC Chapter 3745-21, 40 CFR Part 60, or any limitation(s) specified in the terms and conditions of this permit, in units of the standard. These reports shall also contain the total CO emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter through the Ohio EPA's eBusiness Center: Air Services online web portal documenting any continuous CO monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the



emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

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

- (6) Pursuant to 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter through the Ohio EPA's eBusiness Center: Air Services online web portal documenting all instances of continuous O<sub>2</sub> monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall be included in the quarterly report. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
- (7) The permittee shall submit deviation (excursion) reports that identify any record which shows that the sulfur content of the natural gas exceeded 0.3 grains per 100 standard cubic foot and 0.05 percent sulfur content by weight for No. 2 fuel oil. These reports are due by the date described in the Standard Terms and Conditions of this permit.
- (8) The permittee shall submit deviation (excursion) reports that identify each time when this emissions unit was not in compliance with the startup and shutdown requirements of condition c)(2) above, or the lbs/startup/shutdown cycle emissions, or the rolling, 12-month total NO<sub>x</sub>, CO, and VOC startup/shutdown emissions as described in c)(3) through c)(8). These reports are due by the date described in the Standard Terms and Conditions of this permit.
- (9) 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.
- (10) The permittee shall perform the evaluation of CO emissions from the combustion turbine when the duct burners are being fired, as required by section b)(2)f. in accordance with a plan submitted through the Ohio EPA's eBusiness Center: Air Services online web portal for review and comment. The plan shall be submitted to the appropriate Ohio EPA District Office or local air agency for review and comment no later than 1 year after initial start-up of the combustion turbine

The plan shall describe the permittee's findings with respect to control of CO emissions during the shakedown of the combustion turbine, which highlights possible areas of



concern for the evaluation. The plan shall then provide for systematic evaluation of changes, within the normal or feasible range of operation of the combustion turbine/duct burners, in the following elements as related to the monitored CO emissions:

- a. operating load and operating settings of duct burners; and
- b. combustion turbine and combustion settings, including excess oxygen.

(11) See 40 CFR Part 60, Subpart GG (40 CFR 60.330-60.335).

(12) See 40 CFR Part 60, Subpart Da (40 CFR 60.40Da-60.52Da).

f) Testing Requirements

(1) Compliance with the allowable emissions limitations in this permit shall be determined according to the following methods:

- a. Emissions Limitations:

NO<sub>x</sub> emissions shall not exceed:

when firing natural gas:

3.5 ppmvd at 15% O<sub>2</sub> with or without duct burner firing

25.0 lbs/hr without duct burner firing

29.0 lbs/hr with duct burner firing

150.9 tons per rolling, 12-month period, which includes 37.6 tons for startup/shutdown emissions

when firing No. 2 fuel oil:

21.8 ppmvd at 15% O<sub>2</sub> without duct burner firing

177 lbs/hr without duct burner firing

48.7 tons per rolling, 12-month period, which includes 4.45 tons for startup/shutdown emissions

99 ppmvd at 15% O<sub>2</sub>

200ng/J gross energy output (1.6lb/MWh), as a 30-day rolling average, except as provided under 40 CFR 60.48Da(k) with duct burner firing

65 ng/J heat input (0.15 lb/mmBtu), as a 30-day rolling average, with duct burner firing

Total NO<sub>x</sub> emissions shall not exceed 199.6 tons per rolling 12-month period.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the hourly emission limitations shall be demonstrated by the performance testing as described in condition f)(1) and continual compliance with those limitations shall be demonstrated by the use of the CEM in d)(3) based upon an hourly averaging period as allowed in 40 CFR Part 60.



Ongoing compliance with the annual emissions limitations, including natural gas, No.2 fuel, and start-up and shutdown emissions, shall be demonstrated based upon the CEM data and the records required pursuant to this permit.

b. Emissions Limitations:

PE emissions shall not exceed:

when firing natural gas:

18.3 lbs/hr without duct burner firing

21.8 lbs/hr with duct burner firing

84.3 tons per rolling, 12-month period

when firing No. 2 fuel oil:

60.0 lbs/hr without duct burner firing

15.0 tons per rolling, 12-month period

13ng/J (0.03 lb/mmBtu) with duct burner firing

Total PE emissions shall not exceed 99.3 tons per rolling 12-month period.

Applicable Compliance Method:

Compliance with the hourly emission limitations shall be demonstrated by the performance testing in f)(1). Compliance with the annual emission limitation for each fuel type shall be determined by multiplying the tested hourly emission rate by the actual rolling, 12-month hours of operation both with and without the duct burner firing (as recorded in d)(2)), and dividing by 2000 lbs/ton.

Total PE emissions shall be determined by adding the rolling, 12-month emissions for both natural gas and No.2 fuel oil.

c. Emissions Limitations:

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

when firing natural gas:

1.6 lbs/hr without duct burner firing

1.8 lbs/hr with duct burner firing

7.1 tons per rolling, 12-month period

when firing No. 2 fuel oil:

101 lbs/hr without duct burner firing

25.3 tons per rolling, 12-month period

150 ppmvd at 15% O<sub>2</sub>

86 ng/J (0.20 lb/mmBtu), as a 30-day rolling average, with duct burner firing

Total SO<sub>2</sub> emissions shall not exceed 32.4 tons per rolling 12-month period.



Applicable Compliance Method:

Compliance with the hourly emission limitation without duct burning shall be determined by the record keeping required in condition d)(1), (2), and (7). Compliance with the short term emission limitation with duct burner firing shall be demonstrated by the performance testing in f)(1). Compliance with the annual emission limitation for each fuel type shall be determined by multiplying the hourly emission rate by the actual rolling, 12-month hours of operation both with and without the duct burner firing (as recorded in d)(2)), and dividing by 2000 lbs/ton.

Total SO<sub>2</sub> emissions shall be determined by adding the rolling, 12-month emissions for both natural gas and No.2 fuel oil.

d. Emissions Limitations:

VOC emissions shall not exceed:

when firing natural gas:

3.2 lbs/hr without duct burner firing

6.6 lbs/hr with duct burner firing

37.7 tons per rolling, 12-month period, which includes 16.0 tons for startup/shutdown emissions

when firing No. 2 fuel oil:

8.0 lbs/hr without duct burner firing

3.4 tons per rolling, 12-month period, which includes 1.35 tons for startup/shutdown emissions

Total VOC emissions shall not exceed 41.1 tons per rolling 12-month period.

Applicable Compliance Method:

Compliance with the hourly emissions limitations shall be demonstrated by the performance testing described in condition f)(1). Compliance with the annual emission limitation shall be determined by multiplying the tested hourly emissions rate by the actual rolling, 12-month hours of operation with and without the duct burner firing (as recorded in d)(2)), dividing by 2000 lbs/ton, summing the values and adding the startup/shutdown cycle emissions. The emissions associated with the startup/shutdown cycles shall be based upon the equations specified in c)(7) and c)(8) and the records required pursuant to d)(9).

Total VOC emissions shall be determined by adding the rolling, 12-month emissions for both natural gas and No.2 fuel oil.

e. Emissions Limitations:

CO emissions shall not exceed:



when firing natural gas:

22.0 lbs/hr without duct burner firing

6 ppmvd at 15% O<sub>2</sub> without duct burner firing

49.0 lbs/hr with duct burner firing

13.5 ppmvd at 15% O<sub>2</sub> without duct burner firing

261.4 tons per rolling, 12-month period, which includes 103.0 tons for startup/shutdown emissions

when firing No. 2 fuel oil:

72 lbs/hr without duct burner firing

38 ppmvd at 15% O<sub>2</sub> without duct burner firing

28.6 tons per rolling, 12-month period, which includes 10.6 tons for startup/shutdown emissions

Total CO emissions shall not exceed 290.0 tons per rolling, 12-month period.

Applicable Compliance Method:

Initial compliance with the allowable outlet concentration, and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition f)(1) and continual compliance with those limitations shall be demonstrated by the use of the CEM in d)(4) based upon an hourly averaging period as allowed in 40 CFR Part 60.

Ongoing compliance with the annual emissions limitations, including natural gas, No.2 fuel, and start-up and shutdown emissions, shall be demonstrated based upon the CEM data and the records required pursuant to this permit.

f. Emissions Limitations:

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

when firing natural gas:

26.0 lbs/hr without duct burner firing

31.0 lbs/hr with duct burner firing

119.9 tons per rolling, 12-month period

when firing No. 2 fuel oil:

25.0 lbs/hr without duct burner firing

6.3 tons per rolling, 12-month period

Total NH<sub>3</sub> emissions shall not exceed 126.2 tons per rolling, 12-month period.

Applicable Compliance Method:



Compliance with the hourly emission limitation shall be demonstrated by multiplying the emissions factors provided by the permittee (natural gas: 26 lbs ammonia/hr without duct burner firing, 31 lbs ammonia/hr with duct burner firing; and No.2 fuel oil: 24 lbs / hr). If required, the permittee shall demonstrate compliance by emissions testing in accordance with approved US EPA test methods. Compliance with the annual emission limitation for each fuel type shall be determined by multiplying the hourly emissions rate by the actual rolling, 12-month hours of operation both with and without the duct burner firing (as recorded in d)(2)), and dividing by 2000 lbs/ton.

Total NH<sub>3</sub> emissions shall be determined by adding the rolling, 12-month emissions for both natural gas and No.2 fuel oil.

g. Emissions Limitations:

Formaldehyde emissions shall not exceed:

when firing natural gas:

- 1.1 lbs/hr without duct burner firing
- 1.13 lbs/hr with duct burner firing
- 4.6 tons per rolling, 12-month period

when firing No. 2 fuel oil:

- 0.58 lbs/hr without duct burner firing
- 0.1 ton per rolling, 12-month period

Total formaldehyde emissions shall not exceed 4.7 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance with the hourly emissions limitations shall be demonstrated by the performance testing in f)(1). Compliance with the annual emission limitation shall be determined by multiplying the tested hourly emission rate by the actual rolling, 12-month hours of operation both with and without duct burner firing (as recorded in d)(2)) and dividing by 2000 lbs/ton.

h. Emissions Limitations:

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

when firing natural gas:

- 0.2 lb/hr with or without duct burner firing
- 0.8 ton per rolling, 12-month period

when firing No. 2 fuel oil:

- 9.5 lbs/hr without duct burner firing
- 2.4 tons per rolling, 12-month period



Total H<sub>2</sub>SO<sub>4</sub> emissions shall not exceed 3.2 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance with the hourly emission limitation shall be demonstrated by multiplying the emissions factors supplied by the permittee (natural gas: 0.2 lb H<sub>2</sub>SO<sub>4</sub>/hr with or without duct burner firing; and No.2 fuel oil: 9.5 lbs/hr). If required, the permittee shall demonstrate compliance by emission testing in accordance with approved US EPA test methods. Compliance with the annual emissions limitations for each fuel type shall be determined by multiplying the hourly emission rates by the actual rolling, 12-month hours of operation, and dividing by 2000 lbs/ton.

Total H<sub>2</sub>SO<sub>4</sub> emissions shall be determined by adding the rolling, 12-month emissions for both natural gas and No.2 fuel oil.

i. Emissions Limitations:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average.

No owner or operator shall cause to be discharged into the atmosphere any emissions in excess of 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity, with duct burner firing.

Applicable Compliance Method:

Compliance with the visible emissions limitation shall be demonstrated by USEPA Method 9. See f)(1).

g) Miscellaneous Requirements

- (1) The emission limitations specified in this permit were established using the Ohio EPA's "Air Toxic Policy" and are based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for each pollutant using the SCREEN 3.0 model (or other Ohio EPA approved model) and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling:

Pollutant: Formaldehyde  
TLV (ug/m3): 271 (Converted from the STEL)  
Maximum Hourly Emission Rate (lbs/hr): 2.14\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 0.3  
MAGLC (ug/m3): 6.45

Pollutant: Sulfuric Acid  
TLV (ug/m3): 1000



Maximum Hourly Emission Rate (lbs/hr): 4.4\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.5  
MAGLC (ug/m3): 23.8

Pollutant: Ammonia  
TLV (ug/m3): 25,000  
Maximum Hourly Emission Rate (lbs/hr): 69.2\*  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 39.2  
MAGLC (ug/m3): 595.2

\* This was modeled for emissions units P001 & P002 combined.

- (2) OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a “modification” as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a “modification”:
- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value specified in the above table;
  - b. changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an “allowable” emission limitation specified in the terms and conditions of this permit], reduced exhaust gas flow rate, and decreased stack height);
  - c. changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and,
  - d. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.
- (3) The Ohio EPA will not consider any of the above-mentioned as a “modification” requiring a permit to install, if the following conditions are met:
- a. the change is not otherwise considered a “modification” under OAC Chapter 3745-31;
  - b. the permittee can continue to comply with the allowable emission limitations specified in its permit to install; and,
  - c. prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or



**Draft Permit-to-Install**

Appalachian Power Co, Dresden Plant

**Permit Number:** P0112692

**Facility ID:** 0660000247

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

would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.