



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

2/15/2013

Certified Mail

Andrew Roebel  
Duke Energy Ohio, Wm. H. Zimmer Station  
P.O. Box 960, EM740  
Cincinnati, OH 45202

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL

Facility ID: 1413090154  
Permit Number: P0111498  
Permit Type: OAC Chapter 3745-31 Modification  
County: Clermont

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

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, The Clermont Sun. 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 Southwest Ohio Air Quality Agency  
250 William Howard Taft Rd.  
Cincinnati, OH 45219

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 Southwest Ohio Air Quality Agency at (513)946-7777.

Sincerely,

*Michael W. Ahern*  
Michael W. Ahern, Manager  
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 -Via E-Mail Notification  
SWOQA; Indiana; Kentucky





## Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

Duke Energy Ohio, proposes this Chapter 31 permit modification to refit the No. 2 oil burners with natural gas burners, on Auxiliary Boilers B007 and B008, which are identical units rated at 635 MMBtu/hr. No. 2 fuel oil fired boilers that incorporate Low-NOx burners. Short term emission limits are in units of heat input and are based on the emissions unit's potential to emit (PTE). Long term limits are combined emission limits for emissions units B007 and B008. The facility has elected to accept a voluntary production limit of 796,290 MMBtu/yr, or 7% of its annual capacity factor. This percentage restriction was chosen so as not trigger modeling, NSR or other major rules and to adhere to a 10% annual capacity factor limit as described in NSPS Db 40 CFR Part 60.41b. This limit is in place to avoid the requirement for a nitrogen oxide (NOx) continuous emission monitoring system (CEMS) under 40 Code of Federal Regulations (CFR) 60.48b(b)(1) and 60.46b(e). The facility proposes to keep the ability to burn No. 2 fuel oil as a back up only, during periods of natural gas curtailment. In addition to the 10% annual capacity factor, in order to avoid the requirement of having a NOx monitor per 40 CFR Part 60.41(b), these emissions units will have a requirement to complete NOx compliance testing once annually, or once every 400 hours of boiler operation whichever comes first, for each individual boiler.

40 CFR 60.41b, NSPS Db, also limits any No.2 fuel oil, fired during any natural gas curtailment, to 0.05% SO<sub>2</sub> and 0.3% nitrogen content. The currently active permit for emissions units B007&B008 shows compliance with the 10% maximum operation capacity by limiting fuel use annually. Duke Energy has proposed for permit P0111498 to limit the boilers by heat input instead and to modify the annual emission limits to combined annual limits, as opposed to limits for individual boilers, which will allow them the flexibility to use one boiler more than the other if necessary. Although each individual boiler may operate up to 10% of its own capacity, the combined limit for both boilers = 7% total production and the units annual combined emission limits are based on PTE at combined 7% annual production.

$$[(796,290\text{MMbtu/yr. combined limit})/((635\text{MMbtu/hr.} * 8760\text{hrs/yr.}) * 2 \text{ EU's})] = \underline{7\% \text{ annual production limit.}}$$

The original PTI for these units includes Prevention of Significant Deterioration (PSD) requirements under 40 CFR 52.21, with Best Available Control Technology (BACT) requirements for start-up/shut-down definitions, and a 0.5% by weight sulfur dioxide (SO<sub>2</sub>), No.2 fuel oil requirement. Those requirements have been persevered in P011498.

OAC rule 3745-31-05(D) applies to this permit for NOx, particulate emissions (PE), particulate matter 10 microns and less in diameter (PM-10), particulate matter 2.5 microns and less in diameter (PM2.5), carbon monoxide (CO) and greenhouse gasses (GHG) emissions because in absence of the 10% annual capacity restriction, these emissions are over 100 tons per year (TPY) or trigger the major stationary source emission threshold levels for GHG respectively. Long-term emission rates are again based on potential to emit (PTE) at 7% annual capacity and are rolling 12 month limitations. Limits for



GHG under 3745-31-05(D) were established under the assumption of fuel oil as the primary fuel to represent max PTE for the GHG emissions.

BAT, OAC 3745-31-05(A)(3) and ORC 3704.03(T) emission limits were determined via the procedures outlined in the various OEPA BAT guidance's and the BAT Flow Diagrams 5/18/2010. Emissions for NOx, CO and GHG are above 10 TPY after the voluntary 7% annual capacity restriction and are therefore regulated by ORC 3704.03. PE, PM-10, PM2.5, SO2 and VOC are under 10 TPY after the 7% capacity restriction and are regulated by OAC 3745-31-05(A)(3) and include the applicable language from both the 11/30/01 and 12/01/06 BAT guidance's, as well as reference the sunset language.

These emissions units are subject to 40 CFR Part 60, Subpart Db, and 40 CFR Part 63, Subpart DDDDD.

These emissions units are not subject to 40 CFR Part 63, Subpart UUUUU because they do not supply electricity to the grid, these emission units provide plant heat and steam, during periods of shutdown and startup of Duke Zimmer Station's main steam and electric generating unit B006.

These units are also not subject to OAC 3745-110-03, per paragraph (J)(9) of that rule which exempts any Auxiliary Units from the pertinent rules and emission limitations.

3. Facility Emissions and Attainment Status:

Duke Energy Zimmer Station is located in Clermont County which is currently in attainment status for all criteria pollutants with the exception of Ozone.

2011 Duke Zimmer Facility Wide Emissions per 2011 Annual Fee Emission Report:

SO2	18,046.2	Tons
NOX	8,459.9	Tons
OC	87.7	Tons
PM-FIL	438.9	Tons
PM10-FIL	245.4	Tons
PM2.5-FIL	99.6	Tons
VOC	54.5	Tons

4. Source Emissions:

Maximum permitted emissions, based on modified limits and on permit modification calculations:

Pollutant	Emissions Unit		Combined Emissions
	Aux Boiler A (tons/year)	Aux Boiler B (tons/year)	Aux Boiler A&B (tons/year)
NO <sub>x</sub>	19.9	19.9	<b>39.8</b>
CO	8.0	8.0	<b>16.0</b>
PM	0.8	0.8	<b>1.6</b>
PM-10	0.6	0.6	<b>1.2</b>



PM2.5	0.5	0.5	<b>0.8</b>
SO <sub>2</sub>	0.2	0.2	<b>0.4</b>
VOC	1.0	1.0	<b>2.0</b>
GHG	32471	32471	<b>64941</b>

5. Conclusion:

This permit is a modification of PTI 14-1036 for emissions units B007 and B008. The proposed modification will allow the facility an increase in NOx and CO emissions and will reduce allowable emissions of PM, PM-10, PM2.5, SO2 and VOC. GHG's will now be regulated under the Mandatory GHG Reporting Rule and PSD applicability for GHG. BAT, PSD/BACT, NSPS Db and MACT subpart DDDDD requirements apply.

6. Please provide additional notes or comments as necessary:

Please also refer to the calculations sheets constructed by Duke Energy, checked and modified by M. Schierloh (SWOQA) as well as the other explanatory attachments to this write-up provided by Duke to the nature and reason for the requested modification.

DUKE ENERGY EXPLANTION OF REQUESTED OPERATIONAL RESTRICTION AND CALCULATED EMISSIONS:

First, it was determined which pollutant would experience the greatest annual increase with an increase in annual operation. Based on manufacturer's guaranteed emission rates, it was determined that NOx would experience the greatest annual increase.

It was then determined what would be considered a significant emissions increase for NOx (40 tons/year) and what level of emissions increase in NOx would require an air quality modeling analysis (25 tons/year). In an effort to avoid an air quality modeling analysis, it was decided that an annual NOx increase of no greater than 20 tons/year would be requested. Twenty tons/year represents the total combined annual NOx increase from the two Aux Boilers. The current permitted annual NOx emissions are 10.1 tons/year for each Aux Boiler, or 20.2 tons/year combined. The current annual NOx emission limit plus the requested increase equals 40.2 tons/year (40.0 tons/year is requested).

The requested combined annual operating restriction of 800,100 MMBtu/year was arrived at by multiplying the requested annual NOx value of 40 tons/year by 2,000 lbs/ton, then dividing by the NOx emission rate of 0.1 lb/MMBtu.

An assumption was then made that each Aux Boiler would operate a maximum of 100 full load-equivalent hours/year using #2 fuel oil during periods of natural gas curtailment. Given that the rated heat capacity of the Aux Boilers with the dual-fuel burners will be 635 MMBtu/hr, each Aux Boiler would have an annual heat input from #2 fuel oil of 63,500 MMBtu/year (635 MMBtu/hr \* 100 hrs/year). This equates to a total combined annual heat input from #2 fuel oil of 127,000 MMBtu/year. Subtracting this total from the annual heat input requested (800,100 MMBtu/year) equals 673,100 MMBtu/year. This represents the total combined annual heat input from natural gas.



The number of full load-equivalent hours burning natural gas is determined as follows:  
 $673,100 \text{ MMBtu/year} / (635 \text{ MMBtu/hr} * 2 \text{ boilers}) = 530 \text{ hours/year/boiler}$

Therefore, the total full load-equivalent hours would be:

$100 \text{ hours/year/boiler on \#2 fuel oil} + 530 \text{ hours/year/boiler on natural gas} = 630 \text{ hours/year/boiler}$

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

<b>Pollutant</b>	<b>(tons / year)</b>
NO <sub>x</sub>	<b>39.8</b>
CO	<b>16.0</b>
PM	<b>1.6</b>
PM-10	<b>1.2</b>
PM2.5	<b>0.8</b>
SO <sub>2</sub>	<b>0.4</b>
VOC	<b>2.0</b>
GHG	<b>64941</b>

PUBLIC NOTICE  
Issuance of Draft Air Pollution Permit-To-Install  
Duke Energy Ohio, Wm. H. Zimmer Station

Issue Date: 2/15/2013

Permit Number: P0111498

Permit Type: OAC Chapter 3745-31 Modification

Permit Description: Chapter 31 Modification of 635 MMBtu/hr Auxiliary Boilers (emissions units B007 & B008) from No. 2 fuel oil-fired boilers to natural gas-fired, with No. 2 fuel oil firing capabilities during periods of natural gas curtailment only.

Facility ID: 1413090154

Facility Location: Duke Energy Ohio, Wm. H. Zimmer Station  
1781 US Route 52,  
Moscow, OH 45153-9705

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/permitonline.aspx> by entering the permit # or: Alberta Mellon, Southwest Ohio Air Quality Agency, 250 William Howard Taft Rd., Cincinnati, OH 45219. Ph: (513)946-7777





**DRAFT**

**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
Duke Energy Ohio, Wm. H. Zimmer Station

Facility ID:	1413090154
Permit Number:	P0111498
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	2/15/2013
Effective:	To be entered upon final issuance





**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
Duke Energy Ohio, Wm. H. Zimmer Station

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**Draft Permit-to-Install**  
Duke Energy Ohio, Wm. H. Zimmer Station  
**Permit Number:** P0111498  
**Facility ID:** 1413090154  
**Effective Date:** To be entered upon final issuance

## Authorization

Facility ID: 1413090154  
Facility Description: Electric Power Generating Facility  
Application Number(s): A0045661  
Permit Number: P0111498  
Permit Description: Chapter 31 Modification of 635 MMBtu/hr Auxiliary Boilers (emissions units B007 & B008) from No. 2 fuel oil-fired boilers to natural gas-fired, with No. 2 fuel oil firing capabilities during periods of natural gas curtailment only.  
Permit Type: OAC Chapter 3745-31 Modification  
Permit Fee: \$3,750.00 *DO NOT send payment at this time, subject to change before final issuance*  
Issue Date: 2/15/2013  
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

Duke Energy Ohio, Wm. H. Zimmer Station  
1781 US Route 52  
Moscow, OH 45153-9705

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:

Southwest Ohio Air Quality Agency  
250 William Howard Taft Rd.  
Cincinnati, OH 45219  
(513)946-7777

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally  
Director



**Draft Permit-to-Install**  
 Duke Energy Ohio, Wm. H. Zimmer Station  
**Permit Number:** P0111498  
**Facility ID:** 1413090154  
**Effective Date:** To be entered upon final issuance

## Authorization (continued)

Permit Number: P0111498

Permit Description: Chapter 31 Modificaton of 635 MMBtu/hr Auxiliary Boilers (emissions units B007 & B008) from No. 2 fuel oil-fired boilers to natural gas-fired, with No. 2 fuel oil firing capabilities during periods of natural gas curtailment only.

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

**Group Name: Auxillary Boilers**

<b>Emissions Unit ID:</b>	<b>B007</b>
Company Equipment ID:	Auxiliary Boiler A
Superseded Permit Number:	
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B008</b>
Company Equipment ID:	Auxiliary Boiler B
Superseded Permit Number:	
General Permit Category andType:	Not Applicable



**Draft Permit-to-Install**  
Duke Energy Ohio, Wm. H. Zimmer Station  
**Permit Number:** P0111498  
**Facility ID:** 1413090154  
**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) The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.



- b) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

#### **4. Monitoring and Related Record Keeping and Reporting Requirements**

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - (1) The date, place (as defined in the permit), and time of sampling or measurements.
  - (2) The date(s) analyses were performed.
  - (3) The company or entity that performed the analyses.
  - (4) The analytical techniques or methods used.
  - (5) The results of such analyses.
  - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Southwest Ohio Air Quality Agency.



- (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 Southwest Ohio Air Quality Agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
  - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the Southwest Ohio Air Quality Agency 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 Southwest Ohio Air Quality Agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

## 6. Compliance Requirements

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.



- c) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- d) The permittee shall submit progress reports to the Southwest Ohio Air Quality Agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - (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 Southwest Ohio Air Quality Agency.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have



been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Southwest Ohio Air Quality Agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

## **10. Applicability**

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

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

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).



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

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

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

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

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

## **13. Construction Compliance Certification**

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

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

## **14. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.



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

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**16. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

**17. Permit Transfers**

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

**18. Risk Management Plans**

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

**19. Title IV Provisions**

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



**Draft Permit-to-Install**  
Duke Energy Ohio, Wm. H. Zimmer Station  
**Permit Number:** P0111498  
**Facility ID:** 1413090154  
**Effective Date:** To be entered upon final issuance

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



**Draft Permit-to-Install**  
Duke Energy Ohio, Wm. H. Zimmer Station

**Permit Number:** P0111498

**Facility ID:** 1413090154

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

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.



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



**1. Emissions Unit Group -Auxiliary Boilers: B007, B008**

EU ID	Operations, Property and/or Equipment Description
B007	Natural Gas Fired Auxiliary Boiler
B008	Natural Gas Fired Auxiliary Boiler

- 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) None.
- 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(D)  Synthetic minor to avoid PSD and Nonattainment New Source Review	Nitrogen Oxide (NOx) emissions shall not exceed 39.8 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.  Carbon Monoxide (CO) emissions shall not exceed 16.0 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.  Particulate matter (PM) shall not exceed 1.6 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.  Particulate Matter 10 microns and less in diameter (PM10) emissions shall not exceed 1.2 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.  Particulate Matter 2.5 microns and less in diameter (PM2.5) emissions shall not exceed 0.8 ton per year as a rolling 12 month average for emissions units B007 and B008 combined.



**Draft Permit-to-Install**

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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Green House Gas (GHG) emissions shall not exceed 64,941.0 tons (as carbon dioxide equivalent (CO <sub>2</sub> e) emissions) per year as a rolling 12 month average for emissions units B007 and B008 combined.
b.	ORC 3704.03(T)	Nitrogen Oxide (NO <sub>x</sub> ) emissions shall not exceed 0.1 lb/MMBtu.  Carbon Monoxide (CO) emissions shall not exceed 0.04 lb/MMBtu.
c.	OAC rules 3745-31-10 through 3745-31-20 (PTI 14-1036 issued on 2/5/87)	The PM, sulfur dioxide(SO <sub>2</sub> ), and NO <sub>x</sub> emission limitations established pursuant to these rules are equivalent to, or less stringent than, the emission limitations for fuel oil combustion established pursuant to OAC rule 3745-31-05(A)(3), except for PM.
d.	OAC rule 3745-31-05(A)(3) as effective 11/30/01	See b)(2)c., b)(2)d., b)(2)e., b)(2)g., and b)(2)k.  Compliance with this rule also includes compliance with OAC rule 3745-18-06(A) and OAC rule 3745-31-05(D) ), except for PM.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06.	See b)(2)(b).
f.	40 CFR Part 60, Subpart Db	The visible particulate, sulfur dioxide, and nitrogen oxides emission limitations specified in this subpart (20% opacity as a 6 minute average, except for one 6 minute period per hour of not more than 27% opacity, 0.20 lb/MMBtu, and 0.10 lb/MMBtu, respectively) are equivalent to, or less stringent than, the visible particulate, sulfur dioxide, and nitrogen oxides emission limitations established pursuant to OAC rule 3745-31-05(A)(3).  See b)(2)g. and b)(2)j.
g.	OAC rule 3745-17-07(A)(1)	The visible particulate emission limitation specified in this rule (20% opacity as a 6-minute average, except as provided by rule) is less stringent than the visible particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
h.	OAC rule 3745-17-10(B)(1)	Particulate emissions shall not exceed 0.020 lb/MMBtu of actual heat input.
i.	OAC rule 3745-18-06(A)	Fuel burning equipment is exempt from paragraphs (D), (F) and (G) of OAC rule 3745-18-06, and from OAC rules 3745-18-07 to 3745-18-94 of the Administrative Code during any calendar day in which natural gas is the only fuel burned.
j.	OAC rule 3745-18-06(D)	The sulfur dioxide emission limitation specified in this rule (1.6 lbs/MMBtu actual heat input) is less stringent than the sulfur dioxide limitations established pursuant to OAC rule 3745-31-05(A)(3).
k.	<p>40 CFR Part 63, Subpart DDDDD (40 CFR 63.7480 – 7575)</p> <p>National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters</p> <p>(In accordance with 63.7490 and 63.7499, this emissions unit is an existing boiler installed before June 4, 2010 (actual installation date of 6/2009) designed to burn Gas 1 fuel and light liquid fuel. The emissions units meet the criteria in the definition of limited-use boiler or process heater based on an annual capacity factor of no more than 10 percent. The permittee has committed to burning No. 2 fuel oil only during periods of natural gas curtailment.</p>	<p>Limited-use boilers and process heaters must complete a tune-up every five years as specified in 40CFR63.7540. They are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, the annual tune-up or the energy assessment requirements in Table 3 to this subpart, or the operating limits in Table 4 to this subpart.</p> <p>40CFR63.7500(c).</p>
l.	40 CFR Part 63, Subpart A (40 CFR 63.7505)	Table 10 to 40 CFR Part 63, Subpart DDDDD – Applicability of General Provisions (Subpart A) to Subpart DDDDD shows which parts of the General Provisions in 40 CFR Part 63.1-15 apply.
m.	OAC rule 3745-110-03	Exempt pursuant to OAC rule 3745-110-03(J)(9).



(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.
- b. These rule paragraphs apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

The Permit to Install for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) for PM10/PM2.5, SO<sub>2</sub>, and VOC:

- i. the annual heat-input limitation outlined in c)(2);
- ii. the fuel oil limitation specified in b)(2)i; and
- iii. the use of low-NO<sub>x</sub> burners as specified in b)(2)h.

The "Best Available Technology (BAT)" requirements under OAC rule 3745-31-05(A)(3) are not applicable to the particulate emissions (PE) emitted from this emissions unit (PE is emitted in the form of filterable PM10 emissions). BAT is only applicable to emissions of an air contaminant or precursor of an air contaminant for which a national ambient air quality standard (NAAQS) has been adopted under the Clean Air Act. Particulate emissions (also referred to as total suspended particulate or particulate matter) is an air contaminant without an established NAAQS.

- c. The following emission limitations shall not be exceeded when burning natural gas:

Particulate Matter 10 microns and less in diameter (PM10) and Particulate Matter 2.5 microns and less in diameter (PM2.5) shall not exceed 0.002 lb/MMBtu of actual heat input.

Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.0006 lb/MMBtu of actual heat input.



Nitrogen Oxide (NO<sub>x</sub>) emissions shall not exceed 0.10 lb/MMBtu of actual heat input.

Carbon Monoxide (CO) emissions shall not exceed 0.04 lb/MMBtu of actual heat input.

Volatile Organic Compound (VOC) emissions shall not exceed 0.006 lb/MMBtu of actual heat input.

- d. The following emission limitations shall not be exceeded when burning No. 2 fuel oil:

PM<sub>10</sub> emissions shall not exceed 0.007 lb/MMBtu of actual heat input.

PM<sub>2.5</sub> emissions shall not exceed 0.002 lb/MMBtu of actual heat input.

SO<sub>2</sub> emissions shall not exceed 0.002 lb/MMBtu of actual heat input.

NO<sub>x</sub> emissions shall not exceed 0.10 lb/MMBtu of actual heat input.

CO emissions shall not exceed 0.04 lb/MMBtu of actual heat input.

VOC emissions shall not exceed 0.002 lb/MMBtu of actual heat input.

- e. The following emission limitations shall not be exceeded when burning natural gas or No. 2 fuel oil:

Particulate Matter 10 microns and less in diameter (PM<sub>10</sub>) shall not exceed 1.2 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.

Particulate Matter 2.5 microns and less in diameter (PM<sub>2.5</sub>) shall not exceed 0.8 ton per year as a rolling 12 month average for emissions units B007 and B008 combined.

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average.

Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.4 ton per year for emissions units B007 and B008 combined.

Nitrogen Oxide (NO<sub>x</sub>) emissions shall not exceed 39.8 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.

Carbon Monoxide (CO) emissions shall not exceed 16.0 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.

Volatile Organic Compound (VOC) emissions shall not exceed 2.0 tons per year for emissions units B007 and B008 combined.



Green House Gas (GHG) emissions shall not exceed 64,941.0 tons (as carbon dioxide equivalent (CO<sub>2</sub>e) emissions) per year as a rolling 12 month average for emission units B007 and B008 combined.

- f. Except as stated in b)(2)g, below, the emission limitations specified in b)(2)c. and b)(2)d. above shall not apply during periods of start-up and shutdown.

Start-up for this emissions unit is defined as the period not to exceed one hour, commencing with the initial firing of the emissions unit unless the permittee demonstrates to the satisfaction of the Director that a longer time period is needed.

Shutdown is defined as the one hour period commencing one-half hour before the last burner is turned off.

- g. The sulfur dioxide and nitrogen oxides emission limitations specified in 40 CFR Part 60, Subpart Db (0.20 lb/MMBtu and 0.10 lb/MMBtu, respectively) apply at all times, including periods of start-up, shutdown, and malfunction.
- h. Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of natural gas or No. 2 fuel oil, an annual heat input limitation, the fuel oil sulfur content limitation, the use of low-NO<sub>x</sub> burners, the visible emission limitation, and compliance with the mass emission limitations.
- i. This emissions unit is only fired with very low sulfur oil (0.5% by weight), as defined in 40 CFR Part 60.41b. Therefore, pursuant to 40 CFR Part 60.47b(f) and the records required in d)(2), the permittee is not required to employ a continuous emission monitoring system for the measurement of sulfur dioxide emissions from this emissions unit.
- j. The permittee is not required to employ a continuous emission monitoring system for the measurement of nitrogen oxides emissions from this emissions unit provided that:

- i. this emissions unit is restricted to an annual capacity factor (as defined in 40 CFR Part 60.41b) of 10%, or less;
- ii. the nitrogen content of the very low sulfur oil fired in this emissions unit does not exceed 0.3%, by weight;
- iii. the permittee conducts a 3-hour performance test (conducted in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7, 7A, 7E, or other approved reference methods) to demonstrate compliance with the applicable nitrogen oxides emission limitation after every 400 hours of emissions unit operation or once per calendar year, whichever comes first;
- iv. the permittee maintains the following records:
  - (a) the calendar date for each day that this emissions unit is operated;



- (b) the number of hours of operation for each day;
      - (c) the hourly steam load, in MMBtu; and
    - v. the permittee submits quarterly reports in accordance with the Standard Terms and Conditions of this permit that include the following information:
      - (a) the annual capacity factor over the previous 12 months;
      - (b) the results of any nitrogen oxides emission tests required in the quarter;
      - (c) the total hours of operation during each month of the quarter; and
      - (d) the total hours of operation since the last nitrogen oxides emission tests.
  - k. Visible particulate emissions shall not exceed 20% opacity as a 6-minute average.
- c) Operational Restrictions
  - (1) The permittee shall burn only natural gas or No. 2 fuel oil in this emissions unit.
  - (2) Emissions units B007 and B008 has been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12 month summation of the heat input rate, upon issuance of this permit. The maximum annual heat input rate for emissions units B007 and B008 combined shall not exceed 796,290 MMBtu per year, based upon a rolling, 12 month summation of the heat input rates.
  - (3) The quality of the oil burned in this emissions unit shall have a combination of heat and sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitations.
  - (4) This emissions unit shall not be used to provide electric output to the utility power distribution system for sale. This emissions unit is to be used to provide steam during start-up and shutdown conditions, and occasionally for plant heating.
- d) Monitoring and/or Recordkeeping Requirements
  - (1) The permittee shall operate and maintain equipment to continuously monitor and record the opacity of the visible particulate emissions from this emissions unit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

Each continuous opacity monitoring system consists of all the equipment used to acquire data and includes the data recording/processing hardware and software.



The permittee shall maintain a certification letter from the Ohio EPA documenting that the continuous opacity monitoring system has been certified in accordance with the requirements of 40 CFR Part 60, Appendix B, Performance Specification 1. The letter of certification shall be made available to the Director upon request.

The permittee shall maintain records of the following data obtained by the continuous opacity monitoring system: percent opacity on a 6-minute block average basis, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

- (2) For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content, nitrogen content, and heat content, and the calculated sulfur dioxide emission rate (in lbs/MMBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).) A shipment may be comprised of multiple tank truck loads from the same supplier's batch and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analyses for sulfur content, nitrogen content, and heat content in accordance with the most recent version of the following ASTM methods: ASTM method D4294 for sulfur content; ASTM method D3431 for nitrogen content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the Southwest Ohio Air Quality Agency.

- (3) 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 this emissions unit.
- (4) The permittee also shall maintain the following records:
  - a. the calendar date for each day that this emissions unit is operated;
  - b. the number of hours of operation for this emissions unit for each day;
  - c. the hourly steam loads for this emissions unit for each day, in MMBtu/hr;
  - d. the actual monthly heat input rate for this emissions unit, in MMBtu/month;
  - e. the rolling, 12-month heat input limitation in c)(2);
  - f. the rolling, 12-month average annual capacity factor for this emissions unit, in percent;
  - g. the hours of operation for this emissions unit since the last nitrogen oxides emission test;
  - h. the monthly natural gas usage rate for this emissions unit, in standard cubic feet;



- i. the monthly natural gas usage rate for emissions units B007 and B008 combined;
  - j. the monthly number two fuel oil usage rate for this emissions unit, in gallons;
  - k. the monthly number two fuel oil usage rate for emissions units B007 and B008 combined;
  - l. the date, commencement and completion times, and duration of each start-up and shutdown period for this emissions unit.
- (5) The permittee shall calculate and maintain monthly records of the NO<sub>x</sub>, CO, PE, PM<sub>10</sub>, PM<sub>2.5</sub> and GHG emissions and the rolling 12-month emissions of NO<sub>x</sub>, CO, PE, PM<sub>10</sub>, PM<sub>2.5</sub> and GHG.
- (6) See 40 CFR Part 63, Subpart DDDDD (40 CFR 63.7480-63.7575) for applicable monitoring and record keeping requirements.
- e) Reporting Requirements
- (1) The permittee shall submit reports within 30 days following the end of each calendar quarter to the Southwest Ohio Air Quality Agency documenting all instances of opacity values in excess of the limitation specified in b)(1)f, b)2)e, and b)(2) k. above, detailing the date, commencement and completion times, duration, magnitude (percent opacity), reason (if known), and corrective action(s) taken (if any) of each 6-minute block average above the applicable opacity limitation.
- The reports shall also document any continuous opacity 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 be included in the quarterly report.
- If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s) taken for each time period of monitoring system malfunction. 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 year.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
- a. any rolling, 12-month average annual capacity factor values greater than 10%;



- b. all periods of time when number two fuel oil with a sulfur content greater than 0.5%, by weight, was fired in this emissions unit;
- c. all periods of time when number two fuel oil with a nitrogen content greater than 0.3%, by weight, was fired in this emissions unit;
- d. all start-up and shutdown periods that exceed the durations specified in b)(2)f; and
- e. any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from d)(2) above.
- f. all exceedances of the rolling, 12-month heat input limitation in c)(2).
- g. all exceedances of the rolling, 12-month emission limitation for NO<sub>x</sub>, CO, PE, PM<sub>10</sub>, PM<sub>2.5</sub> and GHG emissions.

The quarterly deviation reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.

- (3) The permittee also shall submit quarterly summaries that include the following:
  - a. the results of any nitrogen oxides emission tests required in the quarter;
  - b. the total hours of operation for this emissions unit during the quarter; and
  - c. the total hours of operation for this emissions unit since the last nitrogen oxides emission test.

These reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

- (4) The permittee shall submit annual reports that specify the total PE, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO and VOC emissions from this emissions unit for the previous calendar year. The reports also shall specify the combined number two fuel oil usage (in gallons) for emissions units B007 and B008 for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report.
- (5) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- (6) See 40 CFR Part 63, Subpart DDDDD (40 CFR 63.7480-63.7575) for applicable reporting requirements.



f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

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

Applicable Compliance Method:

Compliance with this emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

No visible emission observations are specifically required to demonstrate compliance with this emission limitation, but may be required pursuant to OAC rule 3745-15-04(A).

b. Emission Limitations when burning natural gas:

Particulate Matter 10 microns and less in diameter (PM10), and Particulate Matter 2.5 microns and less in diameter (PM2.5) shall not exceed 0.002 lb/MMBtu of actual heat input.

PE emissions shall not exceed 0.020 lb/MMBtu of actual heat input.

Emission Limitations when burning fuel oil:

PE emissions shall not exceed 0.020 lb/MMBtu of actual heat input;

PM10 emissions shall not exceed 0.007 lb/MMBtu of actual heat input when burning fuel oil, and

PM2.5 emissions shall not exceed 0.002 lb/MMBtu of actual heat input.

Applicable Compliance Method:

When burning natural gas:

Compliance may be determined by multiplying the hourly gas burning capacity of the emissions unit (668,421 cubic feet per hour) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 1.9 lbs. of PE/PM10/PM2.5 per million cubic feet, and then dividing by the maximum hourly heat input capacity of the emissions unit (635 MMBtu/hr.)



When burning No. 2 fuel oil:

Compliance may be determined by multiplying the maximum fuel oil capacity of the emissions unit (4669 gallons/hr.) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-6 for industrial boilers (revised 5/10) emission factor (2, 1.00 and 0.25 lbs of PE/PM10/PM2.5 per 1000 gallons of fuel, respectively), and then dividing by the maximum hourly heat input capacity of the emissions unit (635 MMBtu/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBtu emission limitations in accordance with USEPA reference Methods 1-5 of 40 CFR, Part 60, Appendix A.

c. Emission Limitations:

SO<sub>2</sub> emissions shall not exceed 0.0006 lb/MMBtu of actual heat input when burning natural gas; and

SO<sub>2</sub> emissions shall not exceed 0.002 lb/MMBtu of actual heat input when burning No. 2 fuel oil.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the lb/MMBtu emission limitations in accordance with USEPA reference Method 6, Method 6A, Method 6B, or Method 6C, whichever is appropriate, of 40 CFR, Part 60, Appendix A.

d. Emission Limitation:

Nitrogen oxides emissions shall not exceed 0.10 lb/MMBtu actual heat input when burning natural gas or No. 2 fuel oil.

Applicable Compliance Method:

When burning natural gas or No. 2 fuel oil:

The permittee shall conduct, or have conducted, nitrogen oxides emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate of 0.10 lb/MMBtu actual heat input in accordance with the following requirements:

The nitrogen oxides emission testing shall be conducted after every 400 hours of operation of this emissions unit or once per calendar year, whichever occurs first.

Compliance with allowable nitrogen oxides emission limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7, 7A, 7E, or other approved reference methods.

The test(s) shall be conducted over a minimum of 3 consecutive emissions unit operating hours while the emissions unit is operating near its maximum heat input capacity.



Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Southwest Ohio Air Quality Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Southwest Ohio Air Quality Agencies' refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Southwest Ohio Air Quality Agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Southwest Ohio Air Quality Agency.

e. Emission Limitations:

CO emissions shall not exceed 0.04 lb/MMBtu of actual heat input when burning natural gas or No. 2 fuel oil.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the lb/MMBtu emission limitation in accordance with Method 10, 40 CFR, Part 60, Appendix A.

f. Emission Limitations:

VOC emissions shall not exceed 0.006 lb/MMBtu of actual heat input when burning natural gas; and

VOC emissions shall not exceed 0.002 lb of VOC/MMBtu of actual heat input when burning No. 2 fuel oil.

Applicable Compliance Method:

When burning natural gas:

Compliance may be determined by multiplying the hourly gas burning capacity of the emissions unit (668,421 cubic feet per hour) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 5.5 lbs. of VOC per million cubic feet, and then dividing by the maximum hourly heat input capacity of the emissions unit (635 MMBtu/hr.)



When burning No. 2 fuel oil:

Compliance may be determined by multiplying the maximum fuel oil capacity of the emissions unit (4669 gallons/hr.) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-3 (revised 5/10) emission factor of 0.2 lbs. of VOC per 1000 gallons, and then dividing by the maximum hourly heat input capacity of the emissions unit (635 MMBtu/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBtu limitations in accordance with Method 25 (or M25A as deemed appropriate by the administrator), in 40 CFR, Part 60, Appendix A.

g. Emission Limitations:

Particulate emissions (PE) shall not exceed 1.6 tons per year for emissions units B007 and B008 combined.

Particulate Matter 10 microns and less in diameter (PM10) shall not exceed 1.2 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.

Particulate Matter 2.5 microns and less in diameter (PM2.5) shall not exceed 0.8 ton per year as a rolling 12 month average for emissions units B007 and B008 combined.

Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.4 ton per year for emissions units B007 and B008 combined.

Nitrogen Oxide (NO<sub>x</sub>) emissions shall not exceed 39.8 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.

Carbon Monoxide (CO) emissions shall not exceed 16.0 tons per year as a rolling 12 month average for emissions units B007 and B008 combined.

Volatile Organic Compound (VOC) emissions shall not exceed 2.0 tons per year for emissions units B007 and B008 combined.

Applicable Compliance Method:

Compliance with the rolling, 12-month NO<sub>x</sub>, PE, PM10, PM2.5 and CO emissions limitation in b)(2) shall be determined by the record keeping in d)(5).

Compliance with the annual emission limitations shall be determined by multiplying the total heat input rate for emissions units B007 and B008 combined, by the respective pollutant-specific emission factor (listed above in the fuel-specific Applicable Compliance Method) for each pollutant and then dividing by 2000 lbs/ton.



h. Emission Limitations:

Green House Gas (GHG) emissions shall not exceed 64,941.0 tons (as carbon dioxide equivalent (CO<sub>2</sub>e) emissions) per year as a rolling 12 month average, while burning natural gas, for emission units B007 and B008 combined.

Applicable Compliance Method:

Compliance with the rolling, 12-month GHG emission limitation in b)(2) shall be determined by the record keeping in d)(5).

Actual GHG emissions for emissions units referenced in b)(2) shall be determined based on the following equation:

GHG (CO<sub>2</sub>e) emissions = (CO<sub>2</sub> emissions from fuel oil combustion) + (CO<sub>2</sub>e emissions from natural gas combustion), where:

CO<sub>2</sub>e emissions from natural gas combustion = [796,290 MMBtu/yr) x (53.02 kg CO<sub>2</sub> per MMBtu) + {(0.0001 kg CH<sub>4</sub> (CO<sub>2</sub>e) per million Btu heat content) \* global warming potential (GWP) 21} + {(0.0001 kg N<sub>2</sub>O (CO<sub>2</sub>e) per million Btu heat content) \* global warming potential (GWP) 310} / (907.18 kg/ton)] = TPY of CO<sub>2</sub>e.

i. Emission Limitation:

The maximum annual heat input rate for emissions units B007 and B008 combined shall not exceed 796,290 MMBtu per year a rolling, 12-month summation.

Applicable Compliance Method:

Compliance with the maximum annual heat input restriction for emissions units B007 and B008 combined shall be determined by the record keeping requirements specified in d)(4).

- (2) Compliance with the sulfur content limitation for No. 2 fuel oil specified in b)(2)i shall be determined by the record keeping requirements specified in d)(2).
- (3) See 40 CFR Part 63, Subpart DDDDD (40 CFR 63.7480-63.7575) for applicable testing requirements.

g) Miscellaneous Requirements

- (1) None.