



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

3/11/2013

Certified Mail

Michael Valigosky
University of Toledo Health Science Campus
3000 Arlington Ave
Toledo, OH 43614-2598

No	TOXIC REVIEW
No	PSD
No	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
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL

Facility ID: 0448010247
Permit Number: P0112063
Permit Type: Initial Installation
County: Lucas

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, Toledo Blade. 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 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 Toledo Department of Environmental Services
348 South Erie Street
Toledo, OH 43604

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 Toledo Department of Environmental Services at (419)936-3015.

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
TDES; Michigan; Indiana; Canada



Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

The University of Toledo (UT) Health Science Campus, located at 3000 Arlington Avenue Toledo, Ohio 43614, has submitted an application for one 600 hp steam generator (25.8 mmBtu/hr) identical to the previous five boilers B008-B011 and B013, to be installed in the Steam Plant at Facilities Support Building (FSB) as emission unit B014. The new steam generator will be natural gas fired, with No.2 fuel oil back-up firing capabilities.

3. Facility Emissions and Attainment Status:

This facility is a major source for SO₂, NO_x, CO, and PM₁₀, and is a minor source of VOC and HAP.

Lucas County is classified as attainment for all criteria pollutants.

Significant Net

Pollutant	Emission Increase Levels	Attainment Status
PM _{2.5}	10 TPY	attainment
PM ₁₀	15 TPY	attainment
SO ₂	40 TPY	attainment
VOC	40 TPY	attainment
NO _x	40 TPY	attainment
CO	100 TPY	attainment

4. Source Emissions:

Each 25.8 mmBtu per hour boiler will have short term allowable emissions for CO, NO_x, SO₂, PE and OC based on natural gas and fuel oil usage along with a ton per year limit. There will also be a combined rolling – 12 month emission limitation for the six boilers: B008-B011, B013 and B014 (i.e., federally enforceable PTE) that will not exceed 31.50 tpy CO, 39.20 tpyNO_x, 3.28 tpy PE, 3.16 tpy SO₂ and 4.15 tpy OC.

Previously to avoid triggering a PSD review for NO_x and SO₂, the company requested a rolling, 12-month restriction of 800,000 gallons of distillate #2 fuel oil and 700,000,000 cubic feet of natural gas (700,000 mcf) combined for the five emissions units. In the new application for boiler #6 they have kept the same limitation and with these restrictions, the installation of these emissions units will not require a PSD review.



5. Conclusion:

None.

6. Please provide additional notes or comments as necessary:

The new steam generators will be natural gas fired, with No. 2 fuel oil back-up firing capabilities. To avoid a PSD review for SO₂ and NO_x, UT Health Science Campus requested a rolling 12-month restriction of 800,000 gallons of distillate fuel oil #2 and 700,000 mcf (thousand cubic feet) of natural gas. A restriction of 0.05 lb/mmBtu when combusting fuel oil for SO₂ and of ≤0.05% sulfur by weight in distillate fuel oil.

Applicable Regulations

OAC rule 3745-31-05(A)(3)	Best available technology.
OAC rule 3745-31-05(A)(3)(a)	Exemption from BAT for pollutants <10 tpy.
OAC rule 3745-31-05(D)	The permittee has requested federally enforceable restrictions on this emissions unit to avoid major new source review.
OAC rule 3745-17-07(A)(1)	20% opacity as a 6-minute average, unless otherwise specified by the rule
OAC rule 3745-17-10(B)(1)	0.020 lb PE/mmBtu actual heat input (gas) and 0.040 lb PE/mmBtu actual heat input (fuel oil)
OAC rule 3745-18-06(A)	exemption from OAC rule 3745-18-06(D) on days when only natural gas is fired
OAC rule 3745-18-06(D)	1.6 lbs SO ₂ /mmBtu actual heat input on days when No. 2 fuel oil is fired
OAC rule 3745-110-03	Exempt per OAC rule 3745-110-03(J)(8) due to only being used for space heating purposes
ORC 3704.03(T)	BAT for NO _x because greater than 10 tons/year

40 CFR Part 60, Subpart D_c

§ 60.40c Applicability and delegation of authority.

(a) the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).

§ 60.42c(d) no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 215 ng/J (0.50 lb/MMBtu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur.

60.42c(h) For (distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr)), compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under §60.48c(f), as applicable.

§ 60.43c Imposes no additional particulate restrictions on oil fired steam generating units of less than 8.7 MW (30 mmBtu/hr).



PSD would apply for SO₂ and NO_x because the uncontrolled emissions were above the significant emission increase thresholds, but to avoid triggering a PSD review, the company requested a rolling, 12-month restriction of 800,000 gallons of distillate #2 fuel oil and 700,000,000 cubic feet of natural gas (700,000 mcf) for the six boilers (B008-B011, B013 and B014) and the short-term SO₂ limit of 0.05 lb/mmBtu when combusting fuel oil for SO₂ and of ≤0.05% sulfur by weight in distillate fuel oil.

40 CFR Part 63, Subparts A & JJJJJJ

National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. This rule only applies to emissions from the combustion of oil and does not regulate natural gas combustion emissions

Source Emissions

BAT was established using the AP-42 emission factors for natural gas pollutants: CO, PE, SO₂, and OC and Fuel oil Pollutants: PE, SO₂, OC. AP-42, Fifth Edition, Volume I, Chapter 1:External Combustion Sources, Section 1.3 for Fuel Oil Combustion and Section 1.4 for Natural Gas Combustion.

Natural Gas and Fuel Oil AP-42 Emission Factors:

a sulfur restriction of 0.05% sulfur for No.2 Fuel oil is needed to pass air dispersion modeling for SO₂.

	Natural Gas EF		No.2 Fuel Oil EF	
	lb/mmscf	lb/mmBtu	lb/1000 gal	lb/mmBtu
CO	84	0.082	5	0.036
NO _x	50	0.049	20	0.143
PE	1.9	0.002	2	0.014
SO ₂	0.6	0.001	7.1	0.05
OC	11	0.011	0.556	0.004

NOTE: to convert from lb/mmscf to lb/mmBtu divide by 1020; to convert from lb/1000 gal to lb/mmBtu divide by 140.

The company submitted manufacturer's data indicating an emission factor of 0.08 pound of NO_x per mmBtu for natural gas while utilizing flue gas recirculation for control and 0.19 pound of NO_x per mmBtu for the uncontrolled combustion of #2 distillate fuel oil. Compared to the AP-42 emission factors, the emissions factors appeared high. The company stated that fuel oil is to be used as standby only and usage will be limited. The company also stated in a previous submission for installation of the same exact boilers, that the compact nature of a steam coil generator (when compared to a fire-tube boiler) may render the AP-42 emissions factors inapplicable for oil. Fuel gas recirculation during oil combustion is not an available option on this boiler. The manufacturer also indicated that their particulate emission factor for natural gas combustion is 0.0075 lb/mmBtu. We will accept the manufacturer's emissions as BAT.

Using the restrictions on fuel oil and natural gas usage, the combined ton per year permit allowable is summarized in the table below where 700,000 mcf/yr of natural gas converts to 714,000 mmBtu/yr (for conversion factor please see the note above)and 800,000 gallons/yr of fuel oil converts to 112,000 9mmBtu/yr.



Group TPY Permit Allowable based on restricted fuel usage for all 6 boilers:

	gas		fuel oil		Group Total
	lb/mmBtu	TPY	lb/mmBtu	TPY	TPY
CO	0.082	29.27	0.040	2.24	31.51
NOx	0.080	28.56	0.190	10.64	39.20
PE	0.0075	2.68	0.014	0.78	3.46
SO ₂	0.001	0.36	0.05	2.80	3.16
OC	0.011	3.93	0.004	0.22	4.15

NOTE: NOx, CO (for fuel oil) and PE (for natural gas) are from the manufacturer.

NOTE: NOx EF assumes the use of low-NOx burners; SO₂ limit for is a restriction to avoid PSD and to pass modeling and comes from AP-42, Section 1.3, Table 1.3.1 using 0.05% sulfur content in the fuel oil.

The permit allowable for each boiler was based on the individual worst case scenario for each pollutant using the highest emission factor times either the maximum capacity of the boiler (25.8 mmBtu/hr * 8760 hr/yr = 226,008 mmBtu/yr) or if the highest emission factor was the fuel oil, then the first 112,000 mmBtu/yr was used for the fuel oil portion with the balance times the natural gas emission factor.

Permit Allowables for each boiler, the allowable TPY limit will be based on the individual worst case scenario:

(based on max. capacity of each boiler = 25.8 mmBtu/hr * 8760 hr = 226,008 mmBtu/yr)

	Gas ¹		Fuel Oil ¹		Each boiler's limit ²	NOTES on Worst Case Scenario
	lb/mmBtu	TPY	lb/mmBtu	TPY	TPY	
CO	0.082	9.27	0.040	0.00	9.27	Worst case is using 226008 mmBtu/yr of gas
NOx	0.080	4.56	0.190	10.64	15.20	Worst case is using 112,000 mmBtu/yr for oil and the balance (114,008) for gas
PE	0.0075	0.43	0.014	0.78	1.21	Worst case is using 112,000 mmBtu/yr for oil and the balance (114,008) for gas
SO ₂	0.001	0.06	0.05	2.80	2.86	Worst case is using 112,000 mmBtu/yr for oil and the balance (114,008) for gas
OC	0.011	1.24	0.004	0.00	1.24	Worst case is using 226008 mmBtu/yr of gas



1. Each boiler's TPY limit was calculated first based on the maximum potential to emit using the maximum capacity of the boiler times 8760 hours per year and converted to tons per year.

2. The boilers annual limitation for a particular pollutant will be the sum of the gas and fuel oil tpy calculations.

NOTE: NOx, CO and PE (for natural gas) EF's are from the manufacturer.

The current permit allowables are the short-term limits for the pollutants for two scenario's using natural gas and fuel oil along with a single tpy limit (in bold in the above table). There is also a long-term limit (tpy) for the combined group emissions.

Once the SIP is approved for the 2006 submitted SIP for OAC rule 3745-31-05 then the PE limits for each boiler will be those stated in OAC rule 3745-17-10(B)(1) which are 0.020 lb PE/mmBtu when combusting natural gas and/or lb/mmBtu for No.2 fuel oil. Also, at that time, the current PE, CO and OC short-term and long term limits under OAC 3745-31-05(A)(3) will no longer apply. The short-term limit for SO₂ for fuel oil will still apply because it is a restriction and is federally enforceable.

7. Total Permit Allowable Emissions Summary (for informational purposes only):
(Following are limits for combined)

<u>Pollutant</u>	<u>Tons Per Year</u>
CO	31.51(no increase)
NOx	39.20(no increase)
PE	3.46(no increase)
SO ₂	3.16(no increase)
OC	4.15(no increase)

PUBLIC NOTICE
Issuance of Draft Air Pollution Permit-To-Install
University of Toledo Health Science Campus

Issue Date: 3/11/2013

Permit Number: P0112063

Permit Type: Initial Installation

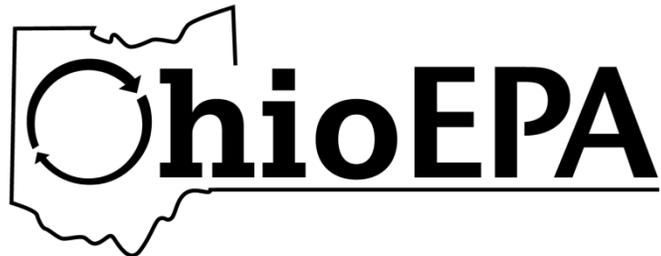
Permit Description: Initial installation permit for a natural gas/No. 2 fuel oil-fired boiler: Boiler #6 (B014).

Facility ID: 0448010247

Facility Location: University of Toledo Health Science Campus
3000 Arlington Ave,
Toledo, OH 43614-2598

Facility Description: Colleges, Universities, and Professional Schools

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: Babak Firoozi, Toledo Department of Environmental Services, 348 South Erie Street, Toledo, OH 43604. Ph: (419)936-3015



DRAFT

Division of Air Pollution Control
Permit-to-Install
for
University of Toledo Health Science Campus

Facility ID:	0448010247
Permit Number:	P0112063
Permit Type:	Initial Installation
Issued:	3/11/2013
Effective:	To be entered upon final issuance



Division of Air Pollution Control
Permit-to-Install
for
University of Toledo Health Science Campus

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Draft Permit-to-Install
University of Toledo Health Science Campus
Permit Number: P0112063
Facility ID: 0448010247
Effective Date: To be entered upon final issuance

Authorization

Facility ID: 0448010247
Facility Description: Medical college and hospital
Application Number(s): A0046159, A0046285, A0046337
Permit Number: P0112063
Permit Description: Initial installation permit for a natural gas/No. 2 fuel oil-fired boiler: Boiler #6 (B014).
Permit Type: Initial Installation
Permit Fee: \$400.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 3/11/2013
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

University of Toledo Health Science Campus
3000 Arlington Ave
Toledo, OH 43614-2598

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:

Toledo Department of Environmental Services
348 South Erie Street
Toledo, OH 43604
(419)936-3015

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
University of Toledo Health Science Campus
Permit Number: P0112063
Facility ID: 0448010247
Effective Date: To be entered upon final issuance

Authorization (continued)

Permit Number: P0112063

Permit Description: Initial installation permit for a natural gas/No. 2 fuel oil-fired boiler: Boiler #6 (B014).

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

Emissions Unit ID:	B014
Company Equipment ID:	FSB Steam Generator No. 6
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Draft Permit-to-Install
University of Toledo Health Science Campus
Permit Number: P0112063
Facility ID: 0448010247
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 Toledo Department of Environmental Services.



- (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 Toledo Department of Environmental Services. 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 Toledo Department of Environmental Services 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 Toledo Department of Environmental Services 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 Toledo Department of Environmental Services 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 Toledo Department of Environmental Services.
- 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 Toledo Department of Environmental Services. 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
University of Toledo Health Science Campus
Permit Number: P0112063
Facility ID: 0448010247
Effective Date: To be entered upon final issuance

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 the applicable requirements of 40 CFR Part 60, Subparts A and Dc: B014. The complete NSPS requirements, including the NSPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Toledo Division of Environmental Services.
3. The Ohio EPA has determined that this facility is subject to the requirements of 40 CFR Part 63 Subpart A and JJJJJJ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for General Provisions and National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. Although Ohio EPA has determined that this Generally Available Control Technology NESHAP (GACT) applies, at this time Ohio EPA does not have the authority to enforce this standard. Instead, U.S. EPA has the authority to enforce this standard. Please be advised, that all requirements associated with this rule are in effect and shall be enforced by U.S. EPA. For more information on the area source rules, please refer to the following U.S. EPA website: <http://www.epa.gov/ttn/atw/area/arearules.html>.



Draft Permit-to-Install
University of Toledo Health Science Campus
Permit Number: P0112063
Facility ID: 0448010247
Effective Date: To be entered upon final issuance

C. Emissions Unit Terms and Conditions



1. B014, FSB Steam Generator No. 6

Operations, Property and/or Equipment Description:

Thermogenics 600 hp steam generator #6

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(A)(3), as effective 11/30/2001	<p>The emissions of carbon monoxide (CO) shall not exceed 0.082 lb/mmBtu when combusting natural gas; 0.040 lb/mmBtu when combusting distillate fuel oil; and 9.27 tons per year.</p> <p>Particulate emissions (PE) shall not exceed 0.0075 lb/mmBtu when combusting natural gas; 0.014 lb/mmBtu when combusting distillate fuel oil; and 1.21 tons per year.</p> <p>The emissions of organic compounds (OC) shall not exceed 0.011 lb/mmBtu when combusting natural gas; 0.004 lb/mmBtu when combusting distillate fuel oil; and 1.24 tons per year.</p> <p>The emissions of sulfur dioxide (SO₂) shall not exceed 0.001 lb/mmBtu when combusting natural gas; 0.05 lb/mmBtu when combusting distillate fuel oil; and 2.86 tons per year.</p> <p>See b)(2)a., b)(2)b. and b)(2)e.</p>



Draft Permit-to-Install

University of Toledo Health Science Campus

Permit Number: P0112063

Facility ID: 0448010247

Effective Date: To be entered upon final issuance

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	ORC 3704.03(T)	<p>The emissions of nitrogen oxides (NO_x) shall not exceed 0.080 lb/mmBtu when combusting natural gas; 0.190 lb/mmBtu when combusting distillate fuel oil.</p> <p>See b)(2)a. and b)(2)b.</p>
c.	OAC rule 3745-31-05(D)	<p>The combined emissions of carbon monoxide (CO) from emissions units B008 through B011, B013 and B014 shall not exceed 31.51 tons per rolling, 12-month period;</p> <p>The combined emissions of nitrogen oxides (NO_x) from emissions units B008 through B011, B013 and B014 shall not exceed 39.20 tons per rolling, 12-month period;</p> <p>The combined particulate emissions (PE) from emissions units B008 through B011, B013 and B014 shall not exceed 3.46 tons per rolling, 12-month period;</p> <p>The combined emissions of sulfur dioxide (SO₂) from emissions units B008 through B011, B013 and B014 shall not exceed 3.16 tons per rolling, 12-month period; and</p> <p>The combined emissions of organic compounds (OC) from emissions units B008 through B011, B013 and B014 shall not exceed 4.15 tons per rolling, 12-month period.</p> <p>The emissions of sulfur dioxide (SO₂) shall not exceed 0.05 lb/mmBtu when combusting distillate fuel oil.</p> <p>See b)(2)g., c)(1) and c)(2)</p>
d.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	See b)(2)f.
e.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack serving this emissions unit shall not exceed 20% opacity, as a six-minute average, except as provided by rule.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 pound per million Btu of actual heat input when burning natural gas and/or number two fuel oil.
g.	OAC rule 3745-18-06(D)	Exempt, by the provisions of OAC rule 3745-18-06(A) during any calendar day in which natural gas is the only fuel burned. See b)(2)c.
h.	40 CFR Part 60, Subpart Dc	See b)(2)c. and b)(2)d.
i.	40 CFR Part 60, Subpart A	See b)(2)d
j.	40 CFR Part 63, Subpart A	Table 8 to Subpart JJJJJJ of 40 CFR Part 63 – Applicability of General Provisions to Subpart JJJJJJ shows which parts of the General Provisions in 40 CFR 63.1 – 16 apply.
k.	40 CFR Part 63, Subpart JJJJJJ	PE shall not exceed 0.03 pound per million Btu of heat input when burning fuel oil. (40 CFR 63.11201(a)) [Note that the requirements of 40 CFR Part 63, Subpart JJJJJJ do not apply to this emissions unit during periods of time when only natural gas is combusted as fuel.] see b)(2)h. and b)(2)i.

(2) Additional Terms and Conditions

- a. The lb/mmBtu actual heat input emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.
- b. The requirements of this rule also include compliance with the requirements of 40 CFR Part 60, Subpart Dc, OAC rule 3745-17-07(A)(1), OAC rule 3745-17-10(B)(1), and 40 CFR Part 63, Subpart JJJJJJ.
- c. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) and/or 40 CFR Part 60, Subpart Dc for sulfur dioxide.



- d. The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.
- e. 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)(1)a., b)(2)e., f)(1)g., h., j., k., l., n., o., p., r., s., and t.
- f. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the uncontrolled carbon monoxide (CO) emissions, particulate emissions (PE) and organic compound (OC) emissions from this air contaminant source since the uncontrolled potential to emit for CO, PE and OC is less than 10 tons per year.
- g. Permit to install P0112063 for this air containment source takes into account the following voluntary restrictions as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) for SO₂:
 - i. the maximum sulfur content of distillate oil burned in this emissions unit shall not exceed 0.05% by weight.
- h. As specified in 40 CFR 63.11201(b), the permittee shall comply with the following applicable work practice standards, emission reduction measures and management practices.
 - i. The permittee shall minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.



- ii. The permittee shall conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.
 - i. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-17-10(B)(1).
- c) **Operational Restrictions**
 - (1) The permittee shall only burn natural gas or distillate fuel oil with $\leq 0.05\%$ sulfur by weight in this emissions unit, or the quality of the oil burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitation specified in this permit (0.05 pound SO₂ per million Btu of heat input).
 - (2) See 40 CFR Part 63, Subpart JJJJJJ (40 CFR 63.11193 – 63.11237)
- d) **Monitoring and/or Recordkeeping Requirements**
 - (1) For each day during which the permittee burns a fuel other than natural gas or distillate fuel oil with $\leq 0.05\%$ sulfur by weight, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
 - (2) For each shipment of oil received for burning at this facility, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in pounds per million Btu). The sulfur dioxide emission rate shall be calculated in accordance with the formula(s) specified in OAC rule 3745-18-04(F) and 40 CFR 60.44c. A shipment may be comprised of multiple tank truck loads from the same supplier's batch, or may be represented by single or multiple pipeline deliveries from the same supplier's batch, and the quality of the oil for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods, such as D240 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.
 - (3) The permittee shall maintain monthly records of the following information:
 - a. the total natural gas usage rate (in mscf, on an as received basis) for each month for B008, B009, B010, B011, B013 and B014 combined; and
 - b. the rolling, 12-month summation of the group total natural gas usage rates (in mscf) for B008, B009, B010, B011, B013 and B014 combined.
 - c. the group total distillate fuel oil usage rate (in gallons, on an as received basis) for each month for B008, B009, B010, B011, B013 and B014 combined; and
 - d. the rolling, 12-month summation of the total distillate fuel oil usage rates (in gallons) for B008, B009, B010, B011, B013 and B014 combined.



(4) See 40 CFR Part 63, Subpart JJJJJJ (40 CFR 63.11193 – 63.11237)

e) Reporting Requirements

(1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas or distillate fuel oil with $\leq 0.05\%$ sulfur by weight was burned in this emissions unit. Each report shall be submitted electronically through Ohio EPA Air Services within 30 days after the deviation occurs.

(2) The permittee shall notify the director (the Toledo Division of Environmental Services) in writing of any record which shows a deviation from the allowable sulfur dioxide emission limitation contained in this permit, based upon the sulfur dioxide emission rates calculated in accordance with the formula(s) specified in OAC rule 3745-18-04(F) and 40 CFR 60.44c. The notification shall include a copy of such record and shall be submitted electronically through Ohio EPA Air Services within 45 days after the deviation occurs.

(3) The permittee shall submit quarterly deviation (excursion) reports summarizing the content of the deviation reports above, and that identify all exceedances of the rolling, 12-month total fuel usage limitation(s) and, for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative total fuel usage limitations for B008, B009, B010, B011, B013 and B014 combined.

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a quarterly report that states no deviations (excursions) occurred during the calendar quarter.

The quarterly reports shall be submitted electronically through Ohio EPA Air Services each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

(4) Pursuant to the NSPS requirements, the permittee is required to report the following information at the appropriate times (if the information has not already been reported):

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date);
- d. date of performance testing (if required, at least 30 days prior to testing); and
- e. the design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

Reports are to be sent to the Toledo Division of Environmental Services and to:



Ohio Environmental Protection Agency

DAPC - Permit Management Unit

P.O. Box 1049

Columbus, Ohio 43216-1049

- (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 JJJJJJ (40 CFR 63.11193 – 63.11237)
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:

Visible particulate emissions from the stack serving this emissions unit shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).
 - b. Emission Limitation:

0.080 pound NO_x per mmBtu of heat input when combusting natural gas

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit using flue gas recirculation based upon manufacturer's emissions factors.

required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-4 and Method 7 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.
 - c. Emission Limitation:

0.190 pound NO_x per mmBtu of heat input when combusting fuel oil



Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit based upon manufacturer's emissions factors.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-4 and Method 7 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

d. Emission Limitation:

The combined emissions of NOx from emissions units B008 through B011, B013 and B014 shall not exceed 39.20 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for six emissions units (B008-B011, B013 and B014) utilizing the allowable quantity of fuel oil (800,000 gallons per year) and the allowable quantity of natural gas (700,000 mscf per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 112,000 mmBtu of heat input per year. At 1,020 Btu per scf, natural gas oil usage accounts for 714,000 mmBtu of heat input per year.

The annual emissions of NOx may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the technical emissions limitation (0.190 pound of NOx per mmBtu of heat input - from the manufacturer for fuel oil) by the distillate fuel oil heat input (112,000 million Btu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.080 pound of NOx per mmBtu of heat input - from the manufacturer for natural gas) by the natural gas heat input (714,000 million Btu per year) and dividing by 2000 pounds per ton.

$$(0.190 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 10.64 \text{ tpy}$$

$$(0.080 \text{ lb/mmBtu})(714,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 28.56 \text{ tpy}$$

e. Emission Limitation:

0.05 pound of SO2 per mmBtu when combusting fuel oil

Applicable Compliance Method:

Compliance with the allowable sulfur dioxide emission limitation may be demonstrated by using the AP-42 emission factor from "Compilation of Air Pollutant Emission Factors", 5th Edition (5/10), Section 1.3, Table 1.3.1 of 142S (lb/1000 gal) where S equals 0.05% sulfur in the fuel oil. Convert to lb/mmBtu by dividing by 140 mmBtu/1000 gallons fuel.



The permittee shall demonstrate compliance with this emission limitation through the recording requirements under the Monitoring and Recordkeeping Requirements in section d)(2) of this permit. If required, the permittee shall demonstrate compliance with this emission limitation through the methods and procedures of OAC rule 3745-18-04(E)(3). Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

f. Emission Limitation:

combust no oil that contains greater than 0.05 weight percent sulfur

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation through the recording requirements under the Monitoring and Recordkeeping Requirements in section d) of this permit.

g. Emission Limitation:

0.001 pound SO₂ per mmBtu of heat input when combusting natural gas.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit based upon the natural gas emission factor (0.6 pound of SO₂ per million cubic feet of natural gas) from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98).

If required, the permittee shall demonstrate compliance with this emission limitation through the methods and procedures of OAC rule 3745-18-04(E)(3). Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

h. Emission Limitation:

2.86 tons SO₂ per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit operating at maximum capacity (25.8 mmBtu per hour) for 8760 hours per year (226,008 mmBtu per year), while utilizing the maximum allowable quantity of fuel oil (800,000 gallons per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 112,000 mmBtu of heat input per year. The balance of the heat input from the combustion of natural gas (226,008 - 112,000) equals 114,008 mmBtu per year.

The annual emissions of SO₂ may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the technical emissions limitation (0.05 pound of SO₂ per mmBtu of heat input – SO₂ limit is a restriction



to avoid PSD and to pass modeling and comes from AP-42, Section 1.3, Table 1.3.1 using 0.05% sulfur content in the fuel oil.) by the distillate fuel oil heat input (112,000 mmBtu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.001 pound of SO₂ per mmBtu of natural gas - comes from AP-42, Section 1.3, Table 1.3.1) by the maximum fuel oil usage rate (114,008 mmBtu of natural gas per year) and dividing by 2000 pounds per ton.

$$(0.05 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 2.80 \text{ tpy}$$

$$(0.001 \text{ lb/mmBtu})(114,008 \text{ mmBtu /yr})(1 \text{ t}/2000 \text{ lb}) = 0.06 \text{ tpy}$$

i. Emission Limitation:

The combined emissions of sulfur dioxide (SO₂) from emissions units B008 through B011, B013 and B014 shall not exceed 3.16 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for six emissions units(B008-B011, B013 and B014) utilizing the allowable quantity of fuel oil (800,000 gallons per year) and the allowable quantity of natural gas (700,000 mscf per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 714,000 mmBtu of heat input per year.

The rolling 12-month emissions of SO₂ may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the technical emissions limitation (0.05 pound of SO₂ per mmBtu of heat input– SO₂ limit is a restriction to avoid PSD and to pass modeling and comes from AP-42, Section 1.3, Table 1.3.1 using 0.05% sulfur content in the fuel oil.) by the distillate fuel oil heat input (112,000 million Btu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.001 pound of SO₂ per mmBtu of natural gas- comes from AP-42, Section 1.3, Table 1.3.1) by the maximum natural gas usage rate (714,000 mmBtu of natural gas per year) and dividing by 2000 pounds per ton.

$$(0.05 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 2.80 \text{ tpy}$$

$$(0.001 \text{ lb/mmBtu})(714,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 0.36 \text{ tpy}$$

j. Emission Limitation:

0.0075 pound PE per mmBtu of heat input when combusting natural gas

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit using flue gas recirculation based upon manufacturer's emissions factors.



If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-5 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

k. Emission Limitation:

0.014 pound PE per mmBtu of heat input when combusting fuel oil

Applicable Compliance Method:

Compliance with this emission limitation may be determined by dividing the distillate fuel oil emission factor (2 pounds of PE per 1000 gallons) from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10), by the distillate fuel oil heat content (140 mmBtu per 1000 gallons).

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-5 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

l. Emissions Limitation:

1.21 tons PE per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit operating at maximum capacity (25.8 mmBtu per hour) for 8760 hours per year (226,008 mmBtu per year), while utilizing the maximum allowable quantity of fuel oil (800,000 gallons per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 112,000 mmBtu of heat input per year. The balance of the heat input from the combustion of natural gas (226,008 - 112,000) equals 114,008 mmBtu per year.

The annual emissions of PE may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the emissions limitation (0.014 pound of PE per mmBtu of heat input) by the distillate fuel oil heat input (112,000 mmBtu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.0075 pound of PE per mmBtu) by the maximum gas heat input (114,008 mmBtu per year) and dividing by 2000 pounds per ton.

$$(0.014 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 0.78 \text{ tpy}$$

$$(0.0075 \text{ lb/mmBtu})(114,008 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 0.43 \text{ tpy}$$



m. Emission Limitation:

The combined emissions of PE from emissions units B008 through B011, B013 and B014 shall not exceed 3.46 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for six emissions units (B008 - B011, B013 and B014) utilizing the allowable quantity of fuel oil (800,000 gallons per year) and the allowable quantity of natural gas (700,000 mscf per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 112,000 mmBtu of heat input per year. At 1,020 Btu per scf, natural gas oil usage accounts for 714,000 mmBtu of heat input per year.

The rolling 12-month emissions of PE may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the emissions limitation (0.014 pound of PE per mmBtu of heat input) by the distillate fuel oil heat input (112,000 million Btu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.0075 pound of PE per mmBtu of heat input) by the natural gas heat input (714,000 million Btu per year) and dividing by 2000 pounds per ton.

$$(0.014 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 0.78 \text{ tpy}$$

$$(0.0075 \text{ lb/mmBtu})(714,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 2.68 \text{ tpy}$$

n. Emission Limitation:

0.082 pound CO per mmBtu of heat input when combusting natural gas

Applicable Compliance Method:

Compliance with this emission limitation may be determined by dividing the natural gas emission factor (84 lb pounds of CO per mmscf) from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98), by the natural gas heat content (1020 Btu per scf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-4 and 10 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

o. Emission Limitation:

0.040 pound CO per mmBtu of heat input when combusting fuel oil



Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit using flue gas recirculation based upon manufacturer's emissions factors.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-4 and 10 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

p. Emissions Limitation:

9.27 tons CO per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit operating at maximum capacity (25.8 mmBtu per hour) for 8760 hours per year, while utilizing the maximum allowable quantity of natural gas heat input (226,008 mmBtu/yr).

Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.082 pound of CO per mmBtu – from AP-42) by the maximum gas heat input (226,008 mmBtu per year) and dividing by 2000 pounds per ton.

q. Emission Limitation:

The combined emissions of CO from emissions units B008 through B011, B013 and B014 shall not exceed 31.51 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for six emissions units (B008-B011, B013 and B014) utilizing the allowable quantity of fuel oil (800,000 gallons per year) and the allowable quantity of natural gas (700,000 mscf per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 112,000 mmBtu of heat input per year. At 1,020 Btu per scf, natural gas oil usage accounts for 714,000 mmBtu of heat input per year.

The rolling 12-month emissions of CO may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the emissions limitation (0.036 pound of CO per mmBtu of heat input) by the distillate fuel oil heat input (112,000 million Btu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.082 pound of CO per mmBtu of heat input) by the natural gas heat input (714,000 million Btu per year) and dividing by 2000 pounds per ton.

$$(0.040 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 2.24 \text{ tpy}$$



$(0.082 \text{ lb/mmBtu})(714,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 29.27 \text{ tpy}$

r. Emission Limitation:

0.011 pound OC per mmBtu of heat input when combusting natural gas

Applicable Compliance Method:

Compliance with this emission limitation may be determined by dividing the natural gas emission factor (11 lb pounds of OC per mmscf) from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98), by the natural gas heat content (1020 Btu per scf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-4 and 25 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

s. Emission Limitation:

0.004 pound OC per mmBtu of heat input when combusting fuel oil

Applicable Compliance Method:

Compliance with this emission limitation may be determined by dividing the distillate fuel oil emission factor (0.556 pounds of OC per 1000 gallons) from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-3 (5/10), by the distillate fuel oil heat content (140 mmBtu per 1000 gallons).

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-4 and 25 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

t. Emissions Limitation:

1.24 tons OC per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit operating at maximum capacity (25.8 mmBtu per hour) for 8760 hours per year (226,008 mmBtu per year), while utilizing the maximum allowable quantity of natural gas (226,008 mmBtu per year).

Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.011 pound of OC per mmBtu) by the maximum gas heat input (226,008 mmBtu per year) and dividing by 2000 pounds per ton.



u. Emission Limitation:

The combined emissions of OC from emissions units B008 through B011, B013 and B014 shall not exceed 4.15 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for six emissions units utilizing the allowable quantity of fuel oil (800,000 gallons per year) and the allowable quantity of natural gas (700,000 mscf per year). At 140 mmBtu per 1000 gallons, fuel oil usage accounts for 112,000 mmBtu of heat input per year. At 1,020 Btu per scf, natural gas oil usage accounts for 714,000 mmBtu of heat input per year.

The rolling-12 month emissions of OC may be calculated as the sum of the emissions from fuel oil combustion added to the emissions from natural gas combustion. Fuel oil emissions may be calculated by multiplying the emissions limitation (0.004 pound of OC per mmBtu of heat input) by the distillate fuel oil heat input (112,000 million Btu per year) and dividing by 2000 pounds per ton. Natural gas emissions may be calculated by multiplying the technical emissions limitation (0.011 pound of OC per mmBtu of heat input) by the natural gas heat input (714,000 million Btu per year) and dividing by 2000 pounds per ton.

$$(0.004 \text{ lb/mmBtu})(112,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 0.22 \text{ tpy}$$

$$(0.011 \text{ lb/mmBtu})(714,000 \text{ mmBtu/yr})(1 \text{ t}/2000 \text{ lb}) = 3.93 \text{ tpy}$$

v. Emission Limitation:

0.020 pound of PE per million Btu of actual heat input when combusting natural gas and/or number two fuel oil.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1-5 of 40 CFR, Part 60 Appendix A. Alternate, equivalent methods may be used upon approval by the Toledo Division of Environmental Services.

w. Emission Limitation:

PE shall not exceed 0.03 pound per million Btu heat input when combusting fuel oil

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance according to the procedures for particulate matter specified in Table 4 to 40 CFR Part 63, Subpart JJJJJJ.



Draft Permit-to-Install
University of Toledo Health Science Campus
Permit Number: P0112063
Facility ID: 0448010247
Effective Date: To be entered upon final issuance

g) Miscellaneous Requirements

(1) None.