OhioEPA

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

10/3/2014

Certified Mail

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

Todd Jonas
Rolling Hills Generating, LLC
1044 North 115th Street
Suite 400
Omaha, NE 68154

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0682000057
Permit Number: P0110152
Permit Type: OAC Chapter 3745-31 Modification
County: Vinton

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, Vinton County Courier. 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

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

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

Sincerely,

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

Cc: U.S. EPA Region 5 -*Via E-Mail Notification*
Ohio EPA-SEDO; Kentucky; West Virginia
Brad Ritterbeck, John Williams, Andrew Mulhern, Daryl Smith

PUBLIC NOTICE - PUBLIC HEARING
ROLLING HILLS GENERATING LLC

Issuance of Draft Air Pollution Permits-to-Install,
Issuance of Proposed National Pollutant Discharge Elimination
System Permit Modification

Notice is hereby given that on October 3, 2014, the Ohio Environmental Protection Agency (Ohio EPA), 50 West Town Street, Columbus Ohio, Division of Air Pollution Control issued two draft Permits-to-Install (permit numbers P0110152 and P0110708) and Ohio EPA Division of Surface Water issued a proposed National Pollutant Discharge Elimination System (NPDES) permit modification (No. 0IB00036*CD) to Rolling Hills Generating LLC, 43111 State Route 160, Wilkesville, OH 45695.

Comment Period and Public Hearing:

Ohio EPA is providing an opportunity for the public to comment on the permits. Comments received shall be considered by the director before a final decision on the permits. To be part of the official record, all comments must be received at Ohio EPA by 5 p.m., December 11, 2014.

A public information session and hearing will be held at 6 p.m. on Thursday, December 4, 2014 at the Wilkesville Community Center, 164 Main Street, Wilkesville, OH 45695. The meeting will end when everyone in attendance has had an opportunity to comment on the permits.

Surface Water Action:

The proposed NPDES modification, if issued as a final action, would authorize the discharge of cooling water blowdown and other power plant discharges via a new 16-mile-long outfall pipe from the existing plant site through Vinton, Gallia and Meigs counties to the Ohio River near Middleport, Ohio. An application for a permit to install for the wastewater treatment systems and the outfall pipe would be submitted to Ohio EPA for review and approval after a final action on the NPDES permit.

The new discharges from the facility, if approved, would result in degradation to, or lowering of, the water quality in the Ohio River; however, the chemical-specific water quality criteria developed to protect aquatic life and human health, as set forth in Ohio Administrative Code (OAC) 3745-1-07 will not be exceeded.

Comments regarding the proposed NPDES permit modification may be presented at the hearing or mailed to: Ohio EPA-DSW, attn.: Permits Processing Unit, P.O. Box 1049, Columbus, Ohio 43216-1049 or dswcomments@epa.ohio.gov. Please include DSW Public Notice No. 14-10-021 with your comments.

Air Pollution Permit:

The draft permits propose to allow the modification of four turbines to combined cycle blocks with heat recovery steam generators and duct burners, and installation of two new cooling towers.

This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by U.S. EPA (40 CFR 52.21) and the Ohio EPA permit-to-install requirements (OAC 3745-31). The proposed allowable PSD pollutant air emission rates are listed below, in tons per year.

Pollutant	Tons/yr (Scenario 1)	Tons/yr (Scenario 2)
PM	247	360
$PM_{10}/PM_{2.5}$	234	347
NO_x	435	450
CO	5074	5102
VOC	611	601
H_2SO_4	7.97	8.39
CO_2e/GHG	4,901,000	5,177,000

The U.S. EPA allows sources to consume no more than the maximum available ambient PSD increment(s) for each PSD pollutant. The Ohio EPA allows PSD sources to consume less than one half the available increment. This facility has demonstrated that the impact from the source is less than one half the available $PM_{2.5}$ increments, and is less than the PSD significant impact increments for NO_2 (1 ug/m^3 annual) and PM_{10} (1 ug/m^3 annual; 5 ug/m^3 24-hour). There are no PSD increments for NO_2 (1-hour) or CO. For these pollutants, Ohio EPA only allows a source to have impacts up to one quarter of the National Ambient Air Quality Standards. Based on this analysis, the project complies with the requirements.

Copies of the draft permits may be reviewed at http://epa.ohio.gov/dapc/permitsonline.aspx by entering the permit numbers. Additional information, including applications and technical support information, is available by first calling (740) 385-8501.

Comments concerning the draft air psermits may be presented at the hearing or mailed to: Sarah Harter, Ohio EPA DAPC-SEDO, 2195 Front Street, Logan, OH 43138 or sarah.harter@epa.ohio.gov.

Permit Strategy Write-Up

1. Check all that apply:

   _X_ Synthetic Minor Determination

   Netting Determination

2. Source Description:
   Rolling Hills Generating, L.L.C. (RHG) owns the Rolling Hills Generating Station (RHGS), which is comprised of five existing gas-fired simple cycle electric generating units located on State Route 160, in Vinton County (near Wilkesville, Ohio).

   RHG proposes to convert four of the five simple cycle peaking units (P001, P002, P004, & P005), SW501F turbines nominally rated at 209 megawatts (MW) each, to combined cycle configuration consisting of two 2x1 combined cycle blocks. The existing fifth unit (P003) will remain in simple cycle operation. Inherent to the proposed conversion involving the four units is the addition of four heat recovery steam generators (HRSGs), each of which will be equipped with a 550 MMBtu duct burners and a steam turbine generator.

   There are two alternative ways Rolling Hills is proposing to complete these modifications, hence the need for a permit to address both scenarios (once the final scenario has been chosen, Rolling Hills will submit a permit modification to 'clean-up' the permit language before the Title V permit is processed). Under Scenario 1, the four combustion turbines will not be modified. Under Scenario 2, the four combustion turbines will be modified to increase output and efficiency.

   New emission units to be added to the facility as part of this project include cooling towers, a fire pump engine, a diesel fuel tank, and circuit breakers. A separate PTI # P0110708, for 2 new cooling towers (P009, P010), each consisting of 9 multi-cells with mechanical draft will be constructed in conjunction with the modifications to the turbines.

3. Facility Emissions and Attainment Status:
   The facility is an existing PSD major and major source for Title V purposes.Vinton County is a non-Appendix A area in Ohio, and is classified by the United States Environmental Protection Agency (U.S. EPA) as "attainment/unclassifiable" for all regulated NSR pollutants.

4. Source Emissions:
   This project results in significant increases of CO, NO_X, VOC, H_2SO_4, and $PM/PM_{10}/PM_{2.5}$. Additionally, emissions of GHGs will be "subject to regulation" under the PSD program given that the emission increase exceeds 75,000 TPY CO_2e. The CCCTs and ancillary equipment are subject to BACT, for each pollutant requiring PSD permitting that is emitted by the particular piece of equipment. RHGS performed a top-down BACT analysis to support the control methods in this permit.

5. Conclusion:
   The terms and conditions (emissions limitations, operational restrictions, monitoring, recordkeeping,

reporting, and testing requirements) are sufficient to ensure federal enforceability, and that RHGS can comply with current rules and regulations. This permit is a chapter 31 major modification and being processed as Draft/Final PTI.

6. Please provide additional notes or comments as necessary: None

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

STAFF DETERMINATION FOR THE APPLICATION TO CONSTRUCT UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS FOR ROLLING HILLS GENERATING, LLC WILKESVILLE, OHIO (VINTON CO.) PTI NUMBER P0110152 AND P0110708

September 29, 2014

Ohio Environmental Protection Agency
Division of Air Pollution Control
Lazarus Government Center
50 West Town Street, Suite 700
Columbus, Ohio 43216

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

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

1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.

2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that has been achieved in practice.

2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.

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

For rural ozone nonattainment areas, the requirements are:

1) LAER - New major sources must install controls that represent the lowest emissions levels (highest control efficiency) that has been achieved in practice.

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

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

Site Description

The Rolling Hills Generating Station (RHGS) is a Title V/PSD source located in Vinton County (on Route 160, Wilkesville, Ohio vicinity). This area is classified as attainment/unclassifiable for all regulated NSR pollutants.

Facility Description

This facility was first permitted over a decade ago, consisting of five 209 MW gas-fired simple cycle electric generating turbines. The original units have been installed and begun operation in the last two years. The company, Rolling Hills Generating (RHG), is planning to convert four of the existing peaking units (P001, P002, P004 and P005) to combined cycle, consisting of two 2x1 combined cycle blocks, each with a 550 MMBtu duct burner, and each followed by a HRSG (steam turbine).

RHGS has developed the application submitted to identify two scenarios, but only one of these alternatives will be utilized, to be determined prior to making any source modifications. The main difference is that one scenario incorporates modifications to the existing four turbines to increase output (Scenario 2), while the other does not (Scenario 1). New equipment to be added as part of the project will be cooling towers, a fire pump engine, a diesel fuel tank and circuit breakers. Regardless of which scenario is ultimately selected, permit content related to the other option will be addressed through a permit modification request submitted by the applicant, to delete the other alternative.

New Source Review (NSR)/PSD Applicability

The emissions unit modifications will generate criteria pollutant emissions of particulates/PM_{10}/$PM_{2.5}$ (per prior USEPA guidance, PM_{10} may suffice as the surrogate for $PM_{2.5}$), CO, NO_x, SO_2, VOC, H_2SO_4 and GHG emissions. A PSD analysis is required for any increase in emissions of a pollutant exceeding the PSD threshold levels. Nonattainment NSR is not applicable, due to the attainment status of the area. Of the pollutants emitted by the proposed source modifications, particulates/PM_{10}/$PM_{2.5}$, CO, NO_x, VOC, H_2SO_4 and GHGs result in a net increase in annual emissions above PSD levels.

Potential HAP emissions do not exceed the standard levels of 10 tons/year for any single HAP and 25 tons/year for a combination of HAPs.

RHGS has requested restricted operational limits for some emissions unitsin the project. Table 1 below summarizes pollutant changes and emissions allowed under the draft PTI.

TABLE 1
PRELIMINARY POLLUTANT EMISSION RATES
RHGS

Air Pollutant	**Total Allowable (tpy) Scenario 1 or 2**	**Project Net Inc (tpy) Scenario 1 or 2**	**PSD/NSR Threshold (tpy)**
Carbon Monoxide (CO)	5074 or 5102	5035 or 5063	100
Volatile Organic Compounds (VOC/OC)	611 or 601	611 or 601	40

Air Pollutant	Total Allowable (tpy) Scenario 1 or 2	Project Net Inc (tpy) Scenario 1 or 2	PSD/NSR Threshold (tpy)
Nitrogen Oxides (NO_x)	435 or 450	421 or 435	40
Particulate (TSP)	247 or 360	244 or 357	25
$PM_{10}/PM_{2.5}$	234 or 347	232 or 344	15/10
Sulfur Dioxide (SO_2)	29.2 or 30.8	29.1 or 30.8	40 (minor)
H_2SO_4	7.97 or 8.39	7.96 or 8.38	7
GHGs/CO_2e	4,901 k or 5,177 k	4,860 k or 5,135 k	75 k

Control Technology Review

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

BACT Evaluation Steps:

Identify all available potential control options;
Eliminate technically infeasible options;
Rank remaining technologies by control effectiveness;
Evaluate the feasible controls by performance and cost analysis; and
Select the most effective control based on energy, environmental and economic impacts (generally, the feasible technology that is also considered to be cost effective).

Summary of BACT Analysis

There are a number of gas-fired turbine installations in operation and included in the RBLC. The following tables show the results of the BACT analysis, including technologies found in the RBLC (see application for further details).

CCCTs	Ranked Type of Control, Feasibility, Cost Effectiveness (Y/N)		Description/Issues
$PM/PM_{10}/PM_{2.5}$	Fuel Specifications	Y	Use of only natural gas to achieve the rate of 9.5 - 15.9 lbs/hr w/o DB, 15.8 - 22.2 lbs/hr with DB
	Good Combustion	Y	Properly operate and maintain equipment.
	Baghouse	N	Filtration method not feasible for high flow, low particulate concentrations nor included in the RBLC for these source types.
	ESP	N	Charged particle collector not feasible for high flow, low particulate concentrations nor included in the RBLC for these source types.
	Wet Scrubber	N	Liquid collection of particles not feasible for high flow, low particulate concentrations nor included in the RBLC for these source types.
	Cyclone	N	Particle drop-out not feasible for high flow, low particulate concentrations nor included in the RBLC for these source types.
NO_x	SCR (SNCR)	Y	Injection of Nitrogen-based reagent into stream to produce N_2 and water, within a cat vessel for an SCR unit. This technology is typically utilized in RBLC (SNCR less effective), at the set emissions rate of 2.0 ppmvd @ 15% O_2, 3-

CCCTs	Ranked Type of Control, Feasibility, Cost Effectiveness (Y/N)		Description/Issues
			hr average (plus Startup/Shutdown).
	Good Combustion Control (Dry Low-No_x Combustors)	Y	Multi-stage Low-NO_x Burners ranging from O_2 deficient to excess O_2, it is feasible, used in the RBLC, but is less effective alone.
	Water/Steam Injection	Y	Lowers peak temperature, it is feasible, used in the RBLC for large units, but less effective.
	$SCONO_x$	N	Removes NOx, CO, VOC using oxidation catalyst, but not feasible nor included in RBLC.
	Xonox Cool Combustion	N	Turbine integrated catalyst to limit temperature NO_x, CO and VOC, but not feasible nor included in RBLC.
CO	Catalytic (Thermal) Oxidation	Y	This is the technology utilized (cost of $2694 - 3,559/ton), meeting the rate of 2.0 ppmvd @ 15% O_2 on a 24-hour rolling average basis (plus SU/SD).
	Good Combustion Control	Y	Operation at an O_2 range for complete combustion to minimize CO.
	$SCONO_x$	N	Removes NOx, CO, VOC using oxidation catalyst, but not installed on larger turbines.
VOC	Good Combustion Control	Y	Operation at an O_2 range for complete combustion to minimize VOC. This is the technology utilized, meeting the rates of 1.4 - 0.84 ppmvd @ 15% O_2 w/o DB, 3.1 - 2.6 ppmvd @ 15% O_2 with DB use (plus SU/SD).
	Catalytic (Thermal) Oxidation	N	Oxidation via increase in temperature (flame) of material stream in the presence of oxygen, but at a higher cost of $40,902 - 49,596/ton; thermal reported not effective for the type of source.
	$SCONO_x$	N	Removes NOx, CO, VOC using oxidation catalyst, but not installed on larger turbines.
H_2SO_4	Fuel Specifications	Y	Use of only natural gas to achieve the limit of 0.25 gr/100 scf fuel sulfur.
	Flue Gas Desulf	N	After contact with alkaline reagent, material is collected in wastewater or by PM control downstream, however not feasible nor included in RBLC for this source type.
	Dry Sorbent Injection	N	Injected sorbent forms solids removed by PM control, however not feasible nor included in RBLC for this source type.
GHGs	High Efficiency Design	Y	Less fossil fuel use to generate the same electricity output, and meet 7,471 Btu/kW-hr (HHV) and 4,900,878 - 5,176,335 tons/yr CO_2e.
	CCS	N	CO_2 capture, transport and injection for geologic storage is not feasible.

The following table summarizes BACT permit requirements for the Emissions Units (EUs) in the project.

Description of Proposed Units	Control Technology Summary
CCCTs	*SCR*: 2.0 ppmvd @ 15% O_2, 3-hr average (plus Startup/Shutdown) for NOx. *Catalytic Oxidation*: 2.0ppmvd @ 15% O_2 (plus SU/SD) for CO; *Good combustion control*: 1.4 - 0.84 ppmvd @ 15% O_2 w/o DB, 3.1 - 2.6 ppmvd @ 15% O_2 with DB (plus SU/SD) for VOC. *Fuel Specification (gas) and good combustion*: 9.5 - 15.9 lbs/hr w/o DB, 15.8 - 22.2 lbs/hr with DB for PM; 0.25 gr/100 scf fuel sulfur for H_2SO_4. *High Efficiency*: 7,471 Btu/kW-hr (HHV) and 4,900,878 - 5,176,335 tons/yr CO_2e for GHGs.
Cooling Towers	*Advanced drift eliminators*: 0.0005 percent drift.
Fire Pump Engine	*Design Controls, Ultra-low S Diesel, Usage Limitations*: 3.0 g/hp-hrNO_x and NMHC, for NOx and VOC. 2.6 g/hp-hr CO 0.15 g/hp-hr PM 128.8 tpy GHG
Lube Oil Demister Vents	*Design and Work Practices*, VOC, PM.
Storage Tanks	*Design and Work Practices*, VOC.
Flange Leaks	*Design and Work Practices*, GHGs.
Steam Turbines	*Design and Work Practices*, GHGs.
Circuit Breakers	*Design and Work Practices*, GHGs.

Ambient Air Quality Monitoring Requirements

Rolling Hills Generating, LLC conducted ambient air quality modeling to determine the potential impact due to the proposed installation. The proposed modifications trigger PSD permitting requirements for CO, NO_x, PM_{10}, $PM_{2.5}$, VOC, and sulfuric acid mist. PSD review requirements were not triggered for SO_2, lead and other criteria pollutants. As VOC are photochemically reactive, and at present, U.S. EPA does not have a photochemical model capable of accounting for the smaller scales associated with single-source PSD modeling. CO impact is above its respective PSD monitoring de minimus level. Ohio EPA has identified representative CO data for use by Rolling Hills Generating in this project. Therefore, Rolling Hills Generating would not be required to perform preconstruction or postconstruction monitoring. The following are the projected impacts for both scenarios:

Pollutant	Averaging Period	De Minimus Monitoring Concentration (µg/m3)	Class II PSD Increment (µg/m3)	Modeled Impact Scenario 1 (µg/m3)	Modeled Impact Scenario 2 (µg/m3)
CO	1-hour	--	--	3,036.83	3,082.38
	8-hour	575	--	662.79	664.66
NO2	1-hour	--	--	81.64	82.87
	Annual	14	25	0.535	0.511
PM10	24-hour	10	30	3.41	4.39
	Annual	--	17	0.452	0.568
PM2.5	24-hour	4	9	3.37	4.36
	Annual	--	4	0.434	0.549

Modeling

Air quality dispersion was conducted to assess the effect of this modification on the national ambient air quality standards (NAAQS) and for the consumption of PSD increments. AERMOD (version 12345) was used in the regulatory default, rural mode. Based on recommendations from Ohio EPA, RHG used the Huntington Tri State Airport (HTS, WBAN# 03860) surface NWS observation station as a representative station, and Pittsburgh, Pennsylvania (PIT, WBAN# 94823) upper air observation data.Building downwash was incorporated into the AERMOD estimates. This modeling utilized the newly-release AERMINUTE (version 11325) meteorological data processing module to reduce the number of calm and variable wind conditions encountered and processed by the AERMOD model.

Peak impacts of CO, NO_2, and $PM_{2.5}$ were above their respective PSD significant impact levels for both scenarios proposed by Rolling Hills Generating. Therefore, additional modeling to address PSD increments where increments have been promulgated, and NAAQS were necessary.

For the non-PSD criteria pollutants (SO_2), no state-based modeling was required because the allowable increase associated with the project was less than the SER thresholds. Additionally, no state-based modeling for VOCs is required for fossil-fuel-burning only combustion sources.

PSD Increment

Pollutant	Averaging Period	Modeled Impact Scn. 1 (µg/m3)	Modeled Impact Scn. 2 (µg/m3)	Class II PSD Increment (µg/m3)
PM2.5	24-hour	2.74	3.30	9
	Annual	0.43	0.49	4

Ohio EPA's policy is that no single project should consume more than 50% of the available PSD increment, except in situations where the impact is localized, temporary or as part of a brownfields project. In such cases, the peak constraining concentration can consume up to 83.3% of the PSD increment.

NAAQS

Existing sources at the facility, existing sources above the PSD significant rates within the Rolling Hills Generating, LLC significant impact area (SIA), and sources greater than 100 tons/yr 50km outside of the SIA were modeled to determine the combined impact of existing and proposed sources. A background value was added to account for minor sources not explicitly included in the modeling.

Pollutant	Averaging Period	Modeled Impact Scn. 1 (µg/m3)	Modeled Impact Scn. 2 (µg/m3)	Primary and Secondary NAAQS (µg/m3)	Modeled Impact with Background Scn. 1 (µg/m3)	Modeled Impact with Background Scn. 2 (µg/m3)
CO	1-hour	3,518.64	3,563.15	40,000 (35 ppm)	6,147.21	6,191.72
	8-hour	664.44	666.97	10,000 (9 ppm)	2,775.55	2,778.08
NO2	**1-hour**	**974.82**	**974.82**	**188 (100 ppb)**	**1,020.32**	**1,020.32**
PM2.5	24-hour	2.75	3.52	35	20.48	21.25
	Annual	0.52	0.62	12	9.59	9.69

A cause or contribute analysis for the exceedance of the 1-hour NO_2 NAAQS was conducted for both scenarios. It was determined that the 5-year average 1-hr NO_2 concentrations attributable to Rolling Hills Generating are below the SIL for modeled exceedances under both proposed scenarios. Therefore, Rolling Hills Generating does not cause or contribute to any exceedances of the 1-hr NO_2 NAAQS.

Toxics Analysis

The Ohio Air Toxics Policy requires evaluation of increases in air toxics above the one ton/year threshold. As the units at Rolling Hills Generating will fire only pipeline-quality natural gas, these units are exempt from air toxics modeling. However, Division (F)(4)(f)(ii) of section 3704.03 of the Revised Code, effective August 3, 2006, provides for the director to request additional information from a source for the purposes of air toxic contaminant modeling if there is reason to believe the source will potentially cause an increase in ground level concentration beyond the facility's boundary that exceeds the MAGLC.

Rolling Hills Generating has presented the air toxic modeling analysis of ammonia, acetaldehyde, toluene, and xylenes. Ohio EPA is in agreement with results presented by letter/e-mail dated September 15, 2014 (corrected from 9/12), submitted by Trinity Consultants (RE: Revised – Air Toxic Impacts Analysis for Combined Cycle Conversion Project PSD Permitting, Rolling Hills Generating, LLC -Wilkesville, Ohio). The analyses demonstrated that the combined cycle conversion project will not cause exceedances of any of the applicable MAGLCs for toxic air contaminants.

Secondary Impact Analysis

Rolling Hills Generating has demonstrated that the predicted pollutant concentrations throughout the study area are below the secondary NAAQS thresholds and that the project at Rolling Hills Generating does not cause or contribute to modeled violations of the 1-hour NO_2 NAAQS. The secondary NAAQS are designed to limit the amount of pollutants in the ambient air to levels below those which could have an adverse impact on human welfare, soils and vegetation. The modeling analyses demonstrate that no significant impacts on human welfare, soils or vegetation will occur from the proposed modification.

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

Pursuant to draft guidance issued by USEPA in March 2013, addressing secondarily formed $PM_{2.5}$ in a NAAQS compliance demonstration under the PSD program, Rolling Hills Generating submitted an analysis of secondary $PM_{2.5}$ formation based on the increase in SO_2 and NOx emissions from the facility. Although no formal procedure has been promulgated for analysis of secondary $PM_{2.5}$, Ohio EPA reviewed the qualitative/quantitative results submitted by Rolling Hills Generating and is in agreement that secondary $PM_{2.5}$ formation will not consume additional PSD increments nor cause a violation of the 24-hour and Annual $PM_{2.5}$ NAAQS.

Pursuant to USEPA guidance addressing secondarily formed ozone, Rolling Hills Generating submitted an analysis of secondary ozone formation based on the increase of NOx and VOC emissions from the facility. Ohio EPA reviewed the submitted analysis, which included an analysis of regional meteorology, past USEPA modeling, current ozone monitor values in the area, and an inventory analysis of existing facilities in the region. Ohio EPA agrees, based on these analyses, that the Rolling Hills Generation facility will not cause a substantial increase in ozone concentrations via secondary formation. Furthermore, Ohio EPA agrees with an additional ozone-formation-regime analysis, which indicates that the region is likely NOx-limited in terms of ozone formation chemistry. Thus, the relatively small increase in VOC from the project is unlikely to impact secondary ozone formation.

Most workers associated with phases of the project/construction already reside in the region and thus would not cause growth in infrastructure/mobile sources, or emission increases and subsequent air quality impacts.

Conclusion

Based upon the review of the permit to install application and supporting documentation provided by the applicant, the Ohio EPA staff has determined the installation will comply with all applicable State and Federal environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to RHGS for modifications to the turbine installation at their current facility.

DRAFT

Division of Air Pollution Control
Permit-to-Install
for
Rolling Hills Generating, LLC

Facility ID:	0682000057
Permit Number:	P0110152
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	10/3/2014
Effective:	To be entered upon final issuance

Division of Air Pollution Control
Permit-to-Install
for
Rolling Hills Generating, LLC

Table of Contents

Authorization

Facility ID:	0682000057
Facility Description:	Electrical Services.
Application Number(s):	A0044076, A0045568, A0047123, A0048150, A0050616
Permit Number:	P0110152
Permit Description:	Chapter 31 major modification to convert four of the existing five simple cycle peaking units, SW501F turbines nominally rated at 209 megawatts (MW) each, to combined cycle configuration consisting of two 2x1 combined cycle blocks, the addition of four heat recovery steam generators (HRSGs), each of which will be equipped with duct burners, and two steam turbine generators.
Permit Type:	OAC Chapter 3745-31 Modification
Permit Fee:	$4,000.00*DO NOT send payment at this time, subject to change before final issuance*
Issue Date:	10/3/2014
Effective Date:	To be entered upon final issuance

This document constitutes issuance to:

Rolling Hills Generating, LLC
43111 State Route 160
Wilkesville, OH 45695

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

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

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

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler
Director

Authorization (continued)

Permit Number: P0110152
Permit Description: Chapter 31 major modification to convert four of the existing five simple cycle peaking units, SW501F turbines nominally rated at 209 megawatts (MW) each, to combined cycle configuration consisting of two 2x1 combined cycle blocks, the addition of four heat recovery steam generators (HRSGs), each of which will be equipped with duct burners, and two steam turbine generators.

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

Group Name: Combined Cycle Combustion Turbin

Emissions Unit ID:	**P001**
Company Equipment ID:	CT-1
Superseded Permit Number:	06-07747
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**P002**
Company Equipment ID:	CT-2
Superseded Permit Number:	06-07747
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**P004**
Company Equipment ID:	CT-4
Superseded Permit Number:	06-07747
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**P005**
Company Equipment ID:	CT-5
Superseded Permit Number:	06-07747
General Permit Category andType:	Not Applicable

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:

(1) Standard Term and Condition A.2.a), Severability Clause

(2) Standard Term and Condition A.3.c) through A. 3.e)General Requirements

(3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements

(4) Standard Term and Condition A.9., Reporting Requirements

(5) Standard Term and Condition A.10., Applicability

(6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install

(7) Standard Term and Condition A.14., Public Disclosure

(8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

(9) Standard Term and Condition A.16., Fees

(10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

a) Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.

b) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d) This permit does not convey any property rights of any sort, or any exclusive privilege.

e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

4. Monitoring and Related Record Keeping and Reporting Requirements

a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

(1) The date, place (as defined in the permit), and time of sampling or measurements.

(2) The date(s) analyses were performed.

(3) The company or entity that performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of such analyses.

(6) The operating conditions existing at the time of sampling or measurement.

b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

(1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Southeast District Office.

(2) Quarterly written reports of (i) any deviations from federally enforceable emissionlimitations, operationalrestrictions, andcontroldeviceoperatingparameterlimitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Ohio EPA DAPC, Southeast District Office. The written reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.

(3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, andreportingrequirements contained in this permit shall be submitted to the Ohio EPA DAPC, Southeast District Office every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

(4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to theOhio EPA DAPC, Southeast District Officein accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

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

6. Compliance Requirements

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

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

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

b) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

(1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.

(3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

(4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c) The permittee shall submit progress reports to the Ohio EPA DAPC, Southeast District Office concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

(1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

(2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

7. Best Available Technology

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

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Southeast District Office.

b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to theOhio EPA DAPC, Southeast District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s)not exempt from the requirement to obtain a Permit-to-Install.

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

a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual

obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the permittee shows good cause for any such extension.

c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).

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

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

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

12. Permit-To-Operate Application

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

13. Construction Compliance Certification

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

a) Completion of initial installation date shall be enteredupon completion of construction and prior to start-up.

b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. Public Disclosure

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

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

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

16. Fees

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

17. Permit Transfers

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

18. Risk Management Plans

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

19. Title IV Provisions

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

B. Facility-Wide Terms and Conditions

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

   a) None.

2. Under Scenario 1, the following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines: P001, P002, P004 and P005. 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 appropriate Ohio EPA District office or local air agency.

3. Under Scenario 1, the duct burners associated with the following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart Da, Standards of Performance for Electric Utility Steam Generating Units for any period of operation with duct burners firing: P001, P002, P004 and P005. 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 appropriate Ohio EPA District office or local air agency.

4. Under Scenario 2, the following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart KKKK, Standards of Performance for New Stationary Sources (NSPS) Stationary Combustion Turbines: P001, P002, P004and P005. 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 appropriate Ohio EPA District office or local air agency.

   On August 29, 2012, USEPA published proposed amendments to 40 CFR Part 60, Subpart KKKK. The permittee shall comply with all applicable requirements in the final promulgation of 40 CFR Part 60, Subpart KKKK.Thepermittee shall also comply with all applicable requirements of 40 CFR Part 60, Subpart A (General Provisions).

5. The permittee shall ensure that any CAIR NOx, SO2, or NOx ozone season units complies with the requirements of OAC Chapter 3745-109, which includes submitting timely permit applications. The permittee shall ensure that the affected emissions units comply with those requirements as outlined in the permit application submitted as required by OAC rules 3745-109-03, 3745-109-10 and 3745-109-16 for the affected emissions units.

   The permittee shall also comply with any subsequent federally mandated programs that may replace the CAIR program affecting electric generating facilities.

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

   On July 6, 2010, US EPA announced the proposed CAIR replacement rule, the “Transport Rule” as required by the original court vacatur of the federal CAIR program in July 2008. The current time frame for the requirements of this program, as far as new state emission budgets, was to begin with the 2012 control periods, but has now been delayed as a result of a stay of Cross State Air Pollution Rule

(CSAPR) by the courts on December 30, 2011 and the subsequent court ruling vacating CSAPR on August 21, 2012. The CAIR allowances for affected units and requirements of the CAIR will continue for the 2012 control periods and pending the promulgation of a valid replacement.

[Authority for term: OAC rules 3745-109 and 3745-77-07(A)(5)]

6. The following emissions units (EUs) are also being installed or modified as part of this project:

EU	Associated Permit	Technology	Emissions
Cooling Tower 1	PTIO P0110708	Advanced drift eliminators	6.47 TPY PM/PM_{10}
Cooling Tower 2	PTIO P0110708	Advanced drift eliminators	6.47 TPY PM/PM_{10}
Fire Pump Engine	PBR 09593	Limited to less than 500 hours of operation per rolling 12-month period	0.310 lb/MMBtu $PM/PM_{10}/PM_{2.5}$

7. Scenario 1 NO_x Limitation

a) Operational Restriction

(1) Under Scenario 1, the number of startup and shutdown events, and the number of hours in normal operation with and without duct burners, shall not cause NO_x emissions from P001, P002, P004, and P005, combined to exceed 435.30 tons per rolling 12-month period based on the following equation:

$(H * EH + W * EW + C * EC + S * ES + B* EB + N * EN) / 2{,}000 \leq E$

Where:

E = Rolling, 12-month NO_x emissions (tons)

H = Rolling, 12-month total number of hot startups for all CCCTs

EH = NO_x emission factor for hot startups (lb/event)

W = Rolling, 12-month total number of warm startups for all CCCTs

EW = NO_x emission factor for warm startups (lb/event)

C = Rolling, 12-month total number of cold startups for all CCCTs

EC = NO_x emission factor for cold startups (lb/event)

S = Rolling, 12-month total number of shutdowns for all CCCTs

ES = NO_x emission factor for shutdowns (lb/event)

B = Rolling, 12-month hours of duct burner operation for all CCCTs

EB = NO_x emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for all CCCTs

EN = NO_x emission rate without duct burner (lb/hr)

b) Monitoring and Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information for P001, P002, P004, and P005 combined:

a. the total rolling, 12-month summation of NO_x emissions (including startup/shutdown);

b. the rolling, 12-month total number of hot startups for all CCCTs;

c. the rolling, 12-month total number of warm startups for all CCCTs;

d. the rolling, 12-month total number of cold startups for all CCCTs;

e. the rolling, 12-month total number of shutdowns for all CCCTs;

f. the rolling, 12-month hours of duct burner operation for all CCCTs; and

g. the rolling, 12-month hours of normal operation without duct burner for all CCCTs.

(2) As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

c) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the operational restriction specified in 7.a)(1).

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

The quarterly reports shall be submitted 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).

d) Applicable Compliance Method

(1) The limitation in 7.a)(1) was established based upon the following inputs, as submitted by the facility:

(400 * 192 + 400 * 257 + 200 * 324 + 1,000 * 82 + 21,600* 18.7 + 9,543 * 14.7) / 2,000 ≤ **435.30tons NO_xper rolling 12 month period for P001, P002, P004, and P005 combined**

(a) The permittee shall use the above variables until CEMs data is available.

(b) Ongoing compliance shall be based on the recordkeeping in 7.b), Section C.2.d)(3), Section C.2.d)(6) through Section C.2.d)(8), Section C.2.d)(10) through Section C.2.d)(11), and Section C.2.d)(13).

8. Scenario 1 CO Limitation

a) Operational Restriction

(1) Under Scenario 1, the number of startup and shutdown events, and the number of hours in normal operation with and without duct burners, shall not cause CO emissions from P001, P002, P004, and P005, combined to exceed 5074.08 tons per rolling 12-month period based on the following equation:

(H * EH + W * EW + C * EC + S * ES + B* EB + N * EN) / 2,000 ≤ E

Where:

E = Rolling, 12-month CO emissions (tons)

H = Rolling, 12-month total number of hot startups for all CCCTs

EH = CO emission factor for hot startups (lb/event)

W = Rolling, 12-month total number of warm startups for all CCCTs

EW = CO emission factor for warm startups (lb/event)

C = Rolling, 12-month total number of cold startups for all CCCTs

EC = CO emission factor for cold startups (lb/event)

S = Rolling, 12-month total number of shutdowns for all CCCTs

ES = CO emission factor for shutdowns (lb/event)

B = Rolling, 12-month hours of duct burner operation for all CCCTs

EB = CO emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for all CCCTs

EN = CO emission rate without duct burner (lb/hr)

b) Monitoring and Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information for P001, P002, P004, and P005 combined:

a. the total rolling, 12-month summation of CO emissions (including startup/shutdown);

b. the rolling, 12-month total number of hot startups for all CCCTs;

c. the rolling, 12-month total number of warm startups for all CCCTs;

d. the rolling, 12-month total number of cold startups for all CCCTs;

e. the rolling, 12-month total number of shutdowns for all CCCTs;

f. the rolling, 12-month hours of duct burner operation for all CCCTs; and

g. the rolling, 12-month hours of normal operation without duct burner for all CCCTs.

(2) As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

d) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the operational restriction specified in 8.a)(1).

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

The quarterly reports shall be submitted 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).

d) Applicable Compliance Method

(1) The limitation in 8.a)(1) was established based upon the following inputs, as submitted by the facility:

(400 * 4,531 + 400 * 7,699 + 200 * 10,506 + 1,000 * 2,776 + 21,600* 12.95 + 9,543 * 10.4) / 2,000 ≤ **5,074.08tons CO per rolling 12 month period for P001, P002, P004, and P005 combined**

(a) The permittee shall use the above variables until CEMs data is available.

(b) Ongoing compliance shall be based on the recordkeeping in 8.b), Section C.2.d)(4), Section C.2.d)(6) through Section C.2.d)(8), Section C.2.d)(10) through Section C.2.d)(11), and Section C.2.d)(14).

9. Scenario 1 VOC Limitation

a) Operational Restriction

(1) Under Scenario 1, the number of startup and shutdown events, and the number of hours in normal operation with and without duct burners, shall not cause VOC emissions from P001, P002, P004, and P005, combined to exceed 611.14 tons per rolling 12-month period based on the following equation:

$(H * EH + W * EW + C * EC + S * ES + B* EB + N * EN) / 2{,}000 \leq E$

Where:

E = Rolling, 12-month VOC emissions (tons)

H = Rolling, 12-month total number of hot startups for all CCCTs

EH = VOC emission factor for hot startups (lb/event), as defined in Section C.b)(2)e

W = Rolling, 12-month total number of warm startups for all CCCTs

EW = VOC emission factor for warm startups (lb/event), as defined in Section C.b)(2)e

C = Rolling, 12-month total number of cold startups for all CCCTs

EC = VOC emission factor for cold startups (lb/event), as defined in Section C.b)(2)e

S = Rolling, 12-month total number of shutdowns for all CCCTs

ES = VOC emission factor for shutdowns (lb/event), as defined in Section C.b)(2)e

B = Rolling, 12-month hours of duct burner operation for all CCCTs

EB = VOC emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for all CCCTs

EN = VOC emission rate without duct burner (lb/hr)

b) Monitoring and Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information for P001, P002, P004, and P005 combined:

a. the total rolling, 12-month summation of VOC emissions (including startup/shutdown);

b. the rolling, 12-month total number of hot startups for all CCCTs;

c. the rolling, 12-month total number of warm startups for all CCCTs;

d. the rolling, 12-month total number of cold startups for all CCCTs;

e. the rolling, 12-month total number of shutdowns for all CCCTs;

f. the rolling, 12-month hours of duct burner operation for all CCCTs; and

g. the rolling, 12-month hours of normal operation without duct burner for all CCCTs.

(2) As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

c) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the operational restriction specified in 9.a)(1).

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

The quarterly reports shall be submitted 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).

d) Applicable Compliance Method

(1) The limitation is 9.a)(1) was established based upon the following inputs, as submitted by the facility:

(400 * 440 + 400 * 740 + 200 * 1,004 + 1,000 * 261 + 21,600* 11.5 + 9,543 * 4.2) / 2,000 **≤ 611.14 tons VOC per rolling 12 month period for P001, P002, P004, and P005 combined**

(a) Ongoing compliance shall be based on the recordkeeping in 9.b), Section C.2.d)(6) through Section C.2.d)(7).

10. Scenario 2 NO_x Limitation

a) Operational Restriction

(1) Under Scenario 2, the number of startup and shutdown events, and the number of hours in normal operation with and without duct burners, shall not cause NO_x emissions from P001, P002, P004, and P005, combined to exceed 449.31 tons per rolling 12-month period based on the following equation:

(H * EH + W * EW + C * EC + S * ES + B* EB + N * EN) / 2,000 ≤ E

Where:

E = Rolling, 12-month NO_x emissions (tons)

H = Rolling, 12-month total number of hot startups for all CCCTs

EH = NO_x emission factor for hot startups (lb/event)

W = Rolling, 12-month total number of warm startups for all CCCTs

EW = NO_x emission factor for warm startups (lb/event)

C = Rolling, 12-month total number of cold startups for all CCCTs

EC = NO_x emission factor for cold startups (lb/event)

S = Rolling, 12-month total number of shutdowns for all CCCTs

ES = NO_x emission factor for shutdowns (lb/event)

B = Rolling, 12-month hours of duct burner operation for all CCCTs

EB = NO_x emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for all CCCTs

EN = NO_x emission rate without duct burner (lb/hr)

b) Monitoring and Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information for P001, P002, P004, and P005 combined:

a. the total rolling, 12-month summation of NO_x emissions (including startup/shutdown);

b. the rolling, 12-month total number of hot startups for all CCCTs;

c. the rolling, 12-month total number of warm startups for all CCCTs;

d. the rolling, 12-month total number of cold startups for all CCCTs;

e. the rolling, 12-month total number of shutdowns for all CCCTs;

f. the rolling, 12-month hours of duct burner operation for all CCCTs; and

g. the rolling, 12-month hours of normal operation without duct burner for all CCCTs.

(2) As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

c) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the operational restriction specified in 10.a)(1).

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

The quarterly reports shall be submitted 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).

d) Applicable Compliance Method

(1) The limitation is 10.a)(1) was established based upon the following inputs, as submitted by the facility:

(400 * 192 + 400 * 257 + 200 * 324 + 1,000 * 82 + 21,600* 19.6 + 9,543 * 15.6) / 2,000 ≤ **449.31tons NO_xper rolling 12 month period for P001, P002, P004, and P005 combined**

(a) The permittee shall use the above variables until CEMs data is available.

(b) Ongoing compliance shall be based on the recordkeeping in 10.b),Section C.2.d)(3), Section C.2.d)(6) through Section C.2.d)(8), Section C.2.d)(10) through Section C.2.d)(11), and Section C.2.d)(13).

11. Scenario 2 CO Limitation

a) Operational Restriction

(1) Under Scenario 2, the number of startup and shutdown events, and the number of hours in normal operation with and without duct burners,shall not cause CO emissions from P001, P002, P004, and P005, combined to exceed 5,101.7 tons per rolling 12-month period based on the following equation:

(H * EH + W * EW + C * EC + S * ES + B* EB + N * EN) / 2,000 ≤ E

Where:

E = Rolling, 12-month CO emissions (tons)

H = Rolling, 12-month total number of hot startups for all CCCTs

EH = CO emission factor for hot startups (lb/event)

W = Rolling, 12-month total number of warm startups for all CCCTs

EW = CO emission factor for warm startups (lb/event)

C = Rolling, 12-month total number of cold startups for all CCCTs

EC = CO emission factor for cold startups (lb/event)

S = Rolling, 12-month total number of shutdowns for all CCCTs

ES = CO emission factor for shutdowns (lb/event)

B = Rolling, 12-month hours of duct burner operation for all CCCTs

EB = CO emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for all CCCTs

EN = CO emission rate without duct burner (lb/hr)

b) Monitoring and Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information for P001, P002, P004, and P005 combined:

a. the total rolling, 12-month summation of CO emissions (including startup/shutdown);

b. the rolling, 12-month total number of hot startups for all CCCTs;

c. the rolling, 12-month total number of warm startups for all CCCTs;

d. the rolling, 12-month total number of cold startups for all CCCTs;

e. the rolling, 12-month total number of shutdowns for all CCCTs;

f. the rolling, 12-month hours of duct burner operation for all CCCTs; and

g. the rolling, 12-month hours of normal operation without duct burner for all CCCTs.

(2) As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

c) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the operational restriction specified in 11.a)(1).

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

The quarterly reports shall be submitted 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).

d) Applicable Compliance Method

(1) The limitation in 11.a)(1) was established based upon the following inputs, as submitted by the facility:

(400 * 4,531 + 400 * 7,699 + 200 * 10,506 + 1,000 * 2,776 + 21,600* 14.88 + 9,543 * 12.0) / 2,000 ≤ **5,101.7tons CO per rolling 12 month period for P001, P002, P004, and P005 combined**

(a) The permittee shall use the above variables until CEMs data is available.

(b) Ongoing compliance shall be based on the recordkeeping in 11.b),Section C.2.d)(4), Section C.2.d)(6) through Section C.2.d)(8), Section C.2.d)(10) through Section C.2.d)(11), and Section C.2.d)(14).

12. Scenario 2 VOC Limitation

a) Operational Restriction

(1) Under Scenario 2, the number of startup and shutdown events, and the number of hours in normal operation with and without duct burners, shall not cause VOC emissions from P001, P002, P004, and P005, combined to exceed 600.62 tons per rolling 12-month period based on the following equation:

(H * EH + W * EW + C * EC + S * ES + B* EB + N * EN) / 2,000 ≤ E

Where:

E = Rolling, 12-month VOC emissions (tons)

H = Rolling, 12-month total number of hot startups for all CCCTs

EH = VOC emission factor for hot startups (lb/event), as defined in Section C.b)(2)e

W = Rolling, 12-month total number of warm startups for all CCCTs

EW = VOC emission factor for warm startups (lb/event), as defined in Section C.b)(2)e

C = Rolling, 12-month total number of cold startups for all CCCTs

EC = VOC emission factor for cold startups (lb/event), as defined in Section C.b)(2)e

S = Rolling, 12-month total number of shutdowns for all CCCTs

ES = VOC emission factor for shutdowns (lb/event), as defined in Section C.b)(2)e

B = Rolling, 12-month hours of duct burner operation for all CCCTs

EB = VOC emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for all CCCTs

EN = VOC emission rate without duct burner (lb/hr)

b) Monitoring and Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information for P001, P002, P004, and P005 combined:

a. the total rolling, 12-month summation of CO emissions (including startup/shutdown);

b. the rolling, 12-month total number of hot startups for all CCCTs;

c. the rolling, 12-month total number of warm startups for all CCCTs;

d. the rolling, 12-month total number of cold startups for all CCCTs;

e. the rolling, 12-month total number of shutdowns for all CCCTs;

f. the rolling, 12-month hours of duct burner operation for all CCCTs; and

g. the rolling, 12-month hours of normal operation without duct burner for all CCCTs.

(2) As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

c) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the operational restriction specified in 12.a)(1).

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

The quarterly reports shall be submitted 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).

d) Applicable Compliance Method

(1) The limitation in 12.a)(1) was established based upon the following inputs, as submitted by the facility:

(400 * 440 + 400 * 740 + 200 * 1,004 + 1,000 * 261 + 21,600* 11.1 + 9,543 * 2.9) / 2,000 **≤ 600.62tons VOC per rolling 12 month period for P001, P002, P004, and P005 combined**

(a) Ongoing compliance shall be based on the recordkeeping in 12.b),Section C.2.d)(6) through Section C.2.d)(7).

C. Emissions Unit Terms and Conditions

1. Emissions Unit Group - Combined Cycle Combustion Turbines: P001, P002, P004, &P005

EU ID	Operations, Property and/or Equipment Description
P001	Siemens Westinghouse Power Corp. SW501F, (Scenario 1: 200 MW, with 2022 MMBtu/hr input & 550 MMBtu/hr duct burner. Scenario 2: 207.5 MW with 2144 MMbtu/hr& 550 MMBtu/hr duct burner.) combined cycle natural gas fired turbine with Dry Low-NO_Xcombusters, SCR and duct burner.
P002	Siemens Westinghouse Power Corp. SW501F, (Scenario 1: 200 MW, with 2022 MMBtu/hr input & 550 MMBtu/hr duct burner. Scenario 2: 207.5 MW with 2144 MMbtu/hr& 550 MMBtu/hr duct burner.) combined cycle natural gas fired turbine with Dry Low-NO_Xcombusters, SCR and duct burner.
P004	Siemens Westinghouse Power Corp. SW501F, (Scenario 1: 200 MW, with 2022 MMBtu/hr input & 550 MMBtu/hr duct burner. Scenario 2: 207.5 MW with 2144 MMbtu/hr& 550 MMBtu/hr duct burner.) combined cycle natural gas fired turbine with Dry Low-NO_Xcombusters, SCR and duct burner.
P005	Siemens Westinghouse Power Corp. SW501F, (Scenario 1: 200 MW, with 2022 MMBtu/hr input & 550 MMBtu/hr duct burner. Scenario 2: 207.5 MW with 2144 MMbtu/hr& 550 MMBtu/hr duct burner.) combined cycle natural gas fired turbine with Dry Low-NO_Xcombusters, SCR and duct burner.

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) d)(21) through (24), and e)(14).

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
	Scenario 1 – Existing turbine engines remain unmodified	
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Combined exhaust fromemissions units P001, P002, P004 and P005 shall not exceed 2.4 tons SO_2 per month averaged over a 12-month period. See b)(2)a. below.
b.	OAC rules 3745-31-10 through 3745-31-20	**Allowable emission limits during normal operation without duct burners firing (per unit):** 2.0ppmvd carbon monoxide (CO) at 15%

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		oxygen averaged over a three hour period. 10.4lbs CO/hr averaged over a three hour period. 4.2lbsVOC/hraveraged over a three hour period. 0.2lbsH_2SO_4 /hraveraged over a three hour period. **Allowable emission limits during normal operation with duct burners firing (per unit):** 2.0ppmvd CO at 15% oxygen averaged over a three hour period. 12.95lbs CO/hr averaged over a three hour period. 11.5lbsVOC/hraveraged over a three hour period. 0.6lbsH_2SO_4 /hraveraged over a three hour period. **Allowable emission limits during normal operation both with and without duct burners firing (per unit):** 2.0 tons H_2SO_4per rolling 12 month period. **Allowable emission limits without duct burners firing (per unit):** 9.5 lbsPM/PM_{10}/$PM_{2.5}$/hr averaged over a three hour period. **Allowable emission limits with duct burners firing (per unit):** 0.0068 lb/MMBtu HHVPM/PM_{10}averaged

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		over a three hour period. 15.8 lbsPM/PM_{10}/$PM_{2.5}$/hr averaged over a three hour period. **<u>Total allowable emission limits (including startup and shutdown):</u>** 435.30tons NO_xper rolling 12 month period for P001, P002, P004, and P005 combined. 5,074.08tons CO per rolling 12 month period for P001, P002, P004, and P005 combined. 611.14tons VOC per rolling 12 month period for P001, P002, P004, and P005 combined. See b)(2)e. and Section B.7 through B.9. **<u>Total Allowable emission limits (per unit):</u>** 58.62 tons PM/PM_{10}/$PM_{2.5}$per rolling 12-month period. See b)(2)d.
c.	40 CFR Part 60, Subpart GG (40 CFR 60.330-335) [In accordance with 40 CFR 60.330(a), this emission unit is a stationary gas turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the lower heating value of the fuel, which commenced construction, modification, or reconstruction after October 3, 1977].	The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart GG. The emission limitation specified by this rule is less stringent than the emission limitation established for NO_X pursuant to OAC rules 3745-31-10 through 3745-31-20. SO_2 emissions from any turbine must not exceed 0.015% by volume on a dry basis at 15% oxygen, or fuels burned in the turbine must not contain sulfur in concentrations greater than 0.8 percent by weight (8,000 ppmw). See d)(16).

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	40 CFR Part 60, Subpart Da (40 CFR 60.40Da-52Da) [In accordance with 40 CFR 60.40Da(a)(e)(1), this emission unit includes duct burners capable of combusting more than 73 MW (250 MMBtu/hr) of heat input for which construction commenced after September 18, 1978].	The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart Da for any period of operation with duct burners firing. The emission limitation specified by this rule is less stringent than the emission limitation established for NO_X pursuant to OAC rules 3745-31-10 through 3745-31-20. SO_2 emissions from the duct burners must not exceed 1.0 lb/MWh of gross energy output, 1.2 lb/MWh of net energy output, or 3% of the total potential combustion concentration (97% reduction). See b)(2)f. and d)(17).
	Scenario 2 – Turbine engines modified to increase efficiency and output	
e.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Combined exhaust emissions from emission units P001, P002, P004, and P005 shall not exceed 2.55 tons SO_2 per month averaged over a 12-month period. See b)(2)a. below.
f.	OAC rules 3745-31-10 through 3745-31-20	**Allowable emission limits during normal operation without duct burners firing (per unit):** 2.0ppmvd CO at 15% oxygen averaged over a three hour period. 12.0 lbs CO /hraveraged over a three hour period. 2.9lbsVOC/hraveraged over a three hour period. 0.2lbsH_2SO_4/hraveraged over a three hour period. **Allowable emission limits during normal operation with duct burners**

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		firing (per unit): 2.0ppmvd CO at 15% oxygen averaged over a three hour period. 14.9lbs CO /hraveraged over a three hour period. 11.1 lbsVOC/hraveraged over a three hour period. 0.6lbsH_2SO_4/hraveraged over a three hour period. **Allowable emission limits during normal operation both with and without duct burners firing (per unit):** 2.1 tons H_2SO_4per rolling 12 month period. **Allowable emission limits without duct burners firing (per unit):** 0.0085 lb/MMBtu HHVPM/PM_{10} averaged over a three hour period. 15.9lbsPM/PM_{10}/$PM_{2.5}$/hr averaged over a three hour period. **Allowable emission limits with duct burners firing (per unit):** 0.0085 lb/MMBtu HHVPM/PM_{10} averaged over a three hour period. 22.2lbsPM/PM_{10}/$PM_{2.5}$/hr averaged over a three hour period. **Total allowable emission limits (including startup and shutdown):** 449.31tons NO_xper rolling 12 month period for P001, P002, P004, and P005 combined.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		5,101.7tons CO per rolling 12 month period for P001, P002, P004, and P005 combined. 600.62tons VOC per rolling 12 month period for P001, P002, P004, and P005 combined. See b)(2)e. and Section B.10 through B.12. **<u>Allowable emission limits (per unit):</u>** 86.7 tons PM/PM_{10}/$PM_{2.5}$per rolling 12 month period. See b)(2)d. through b(2)e.
g.	40 CFR Part 60, Subpart KKKK (40 CFR 60.4300-4420) [In accordance with 40 CFR 60.4305(a), this emission unit is a stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel which commenced construction, modification, or reconstruction after February 18, 2005].	The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart KKKK. The emission limitation specified by this rule is less stringent than the emission limitation established for NO_x pursuant to OAC rules 3745-31-10 through 3745-31-20. SO_2 emissions from any turbine must not exceed 0.90 lbs/MWh of gross output, or fuels burned in the turbine must not contain sulfur in concentrations which would result in potential sulfur emissions in excess of 0.060 lbs SO_2/MMBtu heat input.
	Terms common to Scenarios 1 and 2	
h.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/06	See b)(2)b. below.
i.	ORC 3704.03(T)	The emission limitation specified by this rule is equivalent to the emission limitation established pursuant to OAC rule 3745-31-10 through 3745-31-20.
j.	OAC rules 3745-31-10 through 3745-31-20	<u>Allowable emission limits during normal operation both with and without duct burners firing (per unit):</u>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		2.0 ppmvd nitrogen oxides (NO_X) at 15% oxygen averaged over a three hour period. Allowable emission limits (per unit): 0.25 gr/100 scf fuel sulfur limit (H_2SO_4) 7,471 Btu/kW-hr (HHV) GHGs
k.	OAC rule 3745-17-07(A)	Visible particulate emissions from this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by this rule.
l.	OAC rule 3745-17-11(B)(4)	The emission limitation specified by this rule is less stringent than the emission limitation established for $PM/PM_{10}/PM_{2.5}$ pursuant to OAC rules 3745-31-10 through 3745-31-20.
m.	OAC Chapter 3745-103	See b)(2)c below.
n.	40 CFR Part 60, Subpart A	The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart A (General Provisions).
o.	40 CFR Part 75	See d)(3), d)(4), and d)(5).

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC rule 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 ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulation for NAAQS pollutant emissions 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 revision 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 limits/control measures no longer apply.

[OAC rule 3745-31-05(A)(3), as effective 11/30/01]

b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the SO_2 emissions from this air contaminant source since the uncontrolled potential to emit for SO_2 is less than 10 tons/yr.

[OAC rule 3745-31-05(A)(3)(b), as effective 12/01/06]

c. The permittee is subject to the requirements of 40 CFR Part 75 concerning the acid rain program. 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.

d. Under Scenario 1, CO_2e emissions shall not exceed 4,898,977 tons per rolling 12-month summation for emission units P001, P002, P004, and P005 combined. Under Scenario 2, CO_2e emissions shall not exceed 5,174,943 tons per rolling 12-month summation for emission units P001, P002, P004, and P005 combined.

e. The permittee shall comply with the following requirements during periods of startup and shutdown if either scenario is employed:

	Emissions Limitations During Startup (lbs/event)			
	Cold Startup	Hot Startup	Warm Startup	Shutdown
CO	10,506	4,531	7,699	2,776
NO_x	324	192	257	82
VOC	1,004	440	740	261

"Cold Startup" is defined as a combustion turbine startup that occurs more than 72 hours after a combustion turbine shutdown. The period of startup is defined as the lesser of the first 206 minutes of continuous fuel flow to the combustion turbine after fuel flow is initiated or the period of time from combustion turbine fuel flow initiation until the combustion turbine achieves ten consecutive CEM data points in compliance with the ppmvd emissions limitations for CO and NOx.

"Hot Startup" is defined as a combustion turbine startup that occurs within 8 hours of a combustion turbine shutdown. The period of hot startup is defined as the lesser of the first 112 minutes of continuous fuel flow to the combustion turbine after fuel flow is initiated or the period of time from combustion turbine fuel flow initiation until the combustion turbine achieves ten consecutive CEM data points in compliance with the ppmvd emissions limitations for CO and NOx.

"Warm Startup" is defined as a combustion turbine startup that occurs between 8 hours of and 72 hours of a combustion turbine shutdown. The period of startup is defined as the lesser of the first 157 minutes of continuous fuel flow to the combustion turbine after fuel flow is initiated or the period of time from

combustion turbine fuel flow initiation until the combustion turbine achieves ten consecutive CEM data points in compliance with the ppmvd emissions limitations for CO and NOx.

"Shutdown" is defined as an event not to exceed 85 minutes in duration.

f. Under Scenario 1, the duct burners will fire only natural gas generating potential emissions of SO_2 less than 0.060 lb/MMBtu; therefore the duct burners are exempt from the opacity and PM limits established in 40 CFR 60, Subpart Da pursuant to 40 CFR 60.42Da(b)(2) and 40 CFR 60.42Da(f)(1), respectively.

g. The permittee shall employ best available control technology (BACT) for CO emissions from this emissions unit. BACT has been determined to be use of an oxidation catalyst, as detailed in the permittee's application and compliance with the following emission limitations:

   i. 2.0 ppmvd at 15% O_2 both with and without duct burners under Scenario 1 and Scenario 2; and

   ii. startup and shutdown limits as outlined in b)(2)e.

h. The permittee shall employ best available control technology (BACT) for NO_x emissions from this emissions unit. BACT has been determined to be use of SCR, as detailed in the permittee's application and compliance with the following emission limitations:

   i. 2.0 ppmvd at 15% O_2 on a 3-hour rolling average basis utilizing SCR;

   ii. startup and shutdown limits as outlined in b)(2)e.

i. The permittee shall employ best available control technology (BACT) for $PM/PM_{10}/PM_{2.5}$ emissions from this emissions unit. BACT has been determined to be use of good combustion practices along with clean fuels, as detailed in the permittee's application and compliance with the following emission limitations:

   i. 9.5lbs/hr without duct burners, and 15.8lbs/hr with duct burners under Scenario 1; and

   ii. 15.9 lbs/hr without duct burners, and 22.2 lbs/hr with duct burners under Scenario 2.

j. The permittee shall employ best available control technology (BACT) for VOC emissions from this emissions unit. BACT has been determined to be use of good combustion practices along with clean fuels, as detailed in the permittee's application and compliance with the following emission limitations:

   i. 4.2lbs/hr without duct burners, and 11.5 lbs/hr with duct burners under Scenario 1;

   ii. 2.9lbs/hr without duct burners, and 11.1lbs/hr with duct burners under Scenario 2;

iii. startup and shutdown limits as outlined in b)(2)e.

k. The permittee shall employ best available control technology (BACT) for H_2SO_4 emissions from this emissions unit. BACT has been determined to be use of good combustion practices along with clean fuels, as detailed in the permittee's application and compliance with the following emission limitations:

i. firing only natural gas with a sulfur content of 0.25 grains per 100 standard cubic feet (gr/100 scf).

l. The permittee shall employ best available control technology (BACT) for GHGs emissions from this emissions unit. BACT has been determined to be use of high efficiency design, as detailed in the permittee's application and compliance with the following emission limitations:

i. 4,898,977 tons of CO_2e (total combined for the four CCTs) as a rolling, 12-month basis under Scenario 1;

ii. 5,174,943 tons of CO_2e (total combined for the four CCTs) as a rolling, 12-month basis under Scenario 2; and

iii. 7,471 Btu/kW-hr (HHV, net) for each CCT block (ISO conditions corrected for plant elevation, without duct firing or inlet evaporative cooling, baseload, and not accounting for transformer losses).

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

(2) The maximum sulfur content of the natural gas burned in this emission unit shall not exceed 0.25 grains per 100 scf.

(3) The permittee shall employ dry-low NO_x (DLN) burner and selective catalytic reduction (SCR) for control of NO_X emissions except during start-up and shut-down.

(4) In order to limit emissions of NO_x, CO, VOC, and PE per Section B.7. through B.12., b)(1)b., and b)(1)f., thepermittee shall operate the duct burners no more than a total of 21,600 hours per rolling, 12-month period, combined for EUs P001, P002, P004, and P005.

As the emissions units have been operating for the last 12-months, there are sufficient records available to show initial compliance with the rolling, 12-month limitation.

(5) Under Scenario 1, the permittee shall comply with all applicable operational requirements under 40 CFR Part 60, Subpart GG (40 CFR 60.330-335).

(6) Under Scenario 1, the permittee shall comply with all applicable operational requirements under 40 CFR Part 60, Subpart Da (40 CFR 60.40Da-52Da) for any period of operation with duct burners firing.

(7) Under Scenario 2, the permittee shall comply with all applicable operational requirements under 40 CFR Part 60, Subpart KKKK (40 CFR 60.4300-4420).

d) Monitoring and/or Recordkeeping Requirements

(1) Each continuous emission monitoring (CEM) system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software

(2) The information management system for each emissions unit shall be capable of monitoring and recording the fuel flow (mmscf) to the duct burners

(3) Continuous NO_X Monitoring – Certified Systems

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

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

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

In lieu of monitoring the stack gas flow rate as required by 40 CFR Part 60, Appendix B-Performance Specification 6, the permittee shall use a certified NO_X CEMS in conjunction with a fuel flow monitor as described in 40 CFR Part 75 to meet these requirements. The relative accuracy requirements of Performance Specification 6 shall apply.

[40 CFR 60.13; 40 CFR Part 60, Appendix F; 40 CFR Part 75]

(4) Continuous CO Monitoring – Certified Systems

The permittee shall maintain a written quality assurance/quality control plan for the continuous CO monitoring system, designed to ensure continuous valid and representative readings of CO emissions in units of the applicable standard(s). The fuel

flow monitor/meter shall be maintained as required in Part 75, Appendix D. Except as allowed below, the plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.

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

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

In lieu of monitoring the stack gas flow rate as required by 40 CFR Part 60, Appendix B-Performance Specification 6, the permittee shall use a certified CO CEMS in conjunction with a fuel flow monitor as described in 40 CFR Part 75 to meet these requirements. The relative accuracy requirements of Performance Specification 6 shall apply.

[40 CFR 60.13; 40 CFR Part 60, Appendix F; 40 CFR Part 75]

(5) Continuous O_2 or CO_2 Monitoring – Certified Systems

The permittee shall maintain a written quality assurance/quality control plan for the continuous O_2 or CO_2 monitoring system, designed to ensure continuous valid and representative readings of O_2 or CO_2 emissions in units of the applicable standard(s). Except as allowed below, the plan shall follow the requirements of 40 CFR Part 60, Appendix F and 40 CFR Part 75, Appendix B. The quality assurance/quality control plan and a logbook dedicated to the continuous O_2 or CO_2 monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct relative accuracy test audits for the continuous O_2 or CO_2 monitoring system in accordance with the frequencies required pursuant to 40 CFR Part 60 and 40 CFR Part 75; or may follow relative accuracy test audit frequency requirements for monitoring systems subject to 40 CFR 75, Appendix B, in lieu of frequencies required in 40 CFR Part 60. In either case, results shall be recorded and reported in units of the applicable standard(s) in accordance with 40 CFR Part 60.

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

[40 CFR 60.13; 40 CFR Part 60, Appendix F; 40 CFR Part 75]

(6) The permittee shall maintain monthly records of the following information for this emissions unit:

a. the natural gas usage rate for each gas turbine for each month (in standard cubic feet);

b. the natural gas usage rate for the duct burners for each month (in million standard cubic feet);

c. rolling 12-month natural gas usage for duct burners;

d. the hours of operation for each gas turbine;

e. the emission rate for $PM/PM_{10}/PM_{2.5}$ and GHGs (including start-up and shut-down emissions) for each month of operation, in tons/month;

f. the rolling, 12-month summation of $PM/PM_{10}/PM_{2.5}$, $H_2SO_4$and GHGs (including start-up and shut-down emissions) emissions, in tons;

g. the emissions rate* for CO, NO_X and VOC (during normal operation) for each month of operation, in tons/month; and

h. the rolling, 12-month summation of CO, $NO_X$and VOC (during normal operation) emissions, in tons.

*The permittee shall use CEMS data to determine emissions for those pollutants where a CEMS is installed. During the periods where a CEMS is not operational, data substitution procedures found in 40 CFR Part 75 shall be used. For pollutants where a CEMS is not installed, the permittee shall use the most recent testing data/emission factors available for each respective pollutant.

(7) The permittee shall maintain monthly records of the following information for this emissions unit:

a. date, time and duration of each cold, warm, and hot start-up;

b. date, time and duration of each shut-down;

c. the start-up and shut-down emission rate* for NO_X, CO, and VOC, in tons per month; and

d. the total rolling, 12-month summation of CO, NO_x and VOC emissions (including startup/shutdown.

*The permittee shall use CEMS data to determine emissions for those pollutants where a CEMS is installed. During the periods where a CEMS is not operational, data substitution procedures found in 40 CFR Part 75 shall be used. For pollutants where a CEMS is not installed, the permittee shall use the most recent

testing data/emission factors available for each respective pollutant, including the emission factors for cold, warm, and hot start-ups.

(8) The permittee shall operate and maintain equipment to continuously monitor and record NO_X and CO emissions from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60 and 40 CFR Part 75.

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

a. emissions of NO_X and CO in parts per million over the appropriate averaging period, with no resolution less than one data point per minute required;

b. emissions of NO_X and CO in pounds per month;

c. results of quarterly cylinder gas audits or linearity checks;

d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

f. hours of operation of the emissions unit, continuous NO_X and CO monitoring system, and control equipment;

g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO_X and/or CO monitoring system;

h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO_X and/or CO monitoring system; as well as,

i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

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

[40 CFR 60.13; 40 CFR Part 60, Appendices B & F; 40 CFR Part 75]

(9) The permittee shall operate and maintain equipment to continuously monitor and record O_2 or CO_2 emissions from this emissions unit in percent O_2 or CO_2. The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60 and 40 CFR Part 75.

The permittee shall maintain records of all data obtained by the continuous O_2 or CO_2 monitoring system including, but not limited to:

a. the percent O_2 or CO_2 over the appropriate averaging period, with no resolution less than one data point per minute required;

b. results of quarterly cylinder gas audits or linearity checks;

c. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

d. results of required relative accuracy test audit(s);

e. hours of operation of the emissions unit, continuous O_2 or CO_2 monitoring system;

f. the date, time, and hours of operation of the emissions unit without the continuous O_2 or CO_2 monitoring system;

g. the date, time, and hours of operation of the emissions unit during any malfunction of the continuous O_2 or CO_2 monitoring system; as well as,

h. the reason (if known) and the corrective actions taken (if any) for each such event in (f) and (g).

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

[40 CFR 60.13; 40 CFR Part 60, Appendices B & F; 40 CFR Part 75]

(10) The permittee shall install, operate and maintain equipment to continuously monitor and record the actual fuel flow to this emissions unit when the emissions unit is in operation. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 75. If the fuel flow monitoring and/or recording equipment is (are) not in service when the emissions unit is in operation, the permittee shall comply with the appropriate missing data procedures specified in 40 CFR Part 75.

(11) The permittee shall determine the hourly heat input rate to the combustion turbine from the fuel flow rate as determined in term d)(10). The heat input rate shall be calculated in accordance with the procedures in Section 5 of 40 CFR Part 75, Appendix F.

(12) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

(13) The permittee shall maintain on-site, the document(s) of certification received from the U.S. EPA for the Ohio EPA's Central Office documenting that the continuous NO_x monitoring system has been certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 2; the accuracy requirements of Performance Specification 6; and has been certified by U.S. EPA or recommended for certification by Ohio EPA to U.S. EPA under 40 CFR Part 75. The permittee shall document that the fuel flow monitor/meter meets 40 CFR 75 certification requirements prior to the

performance specification test. The letter(s)/document(s) of certification under Part 60 and certification or recommendation for certification under Part 75 shall be made available to the Director (the appropriate Ohio EPA District Office or local air agency) upon request.

[40 CFR 60.13;40 CFR Part 60, Appendix B; 40 CFR Part 75]

(14) The permittee shall maintain on-site, the document(s) of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous carbon monoxide (CO) monitoring system has been certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a (as appropriate), and the accuracy requirements of Specification 6. The permittee shall document that the fuel flow monitor/meter meets 40 CFR 75 certification requirements prior to the performance specification test. The letter(s)/document(s) of certification under Part 60 shall be made available to the Director (the appropriate Ohio EPA District office or local air agency) uponrequest.

[40 CFR 60.13; 40 CFR Part 60, Appendix B; 40 CFR Part 75]

(15) The permittee shall maintain on-site, the document(s) of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous O_2 or CO_2 monitoring system has been certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 3; and has been certified by U.S. EPA for recommended for certification by Ohio EPA to U.S. EPA under 40 CFR Part 75. The letter(s)/document(s) of certification under Part 60 and certification or recommendation for certification under Part 75 shall be made available to the Director (the appropriate Ohio EPA District Office or local air agency) upon request.

[40 CFR 60.13; 40 CFR Part 60, Appendix B; 40 CFR Part 75]

(16) Under Scenario 1, the permittee shall comply with either the monitoring schedules contained in Subpart GG or with the provisions of the Custom Fuel Monitoring Schedule (CFMS) for which the permittee received approval from USEPA, Region V on June 17, 2003. The permittee has implemented a successful CFMS in accordance with the following and issuance of this permit does not require establishment of a new CFMS:

a. Conduct semi-annual monitoring of fuel sulfur content.

b. If sulfur analysis indicates non-compliance with the limits at 40 CFR Part 60.333, the permittee must notify USEPA and the Ohio EPA Southeast District Office of the excess emissions. The permittee must also begin fuel sulfur content monitoring on a weekly basis while the CFMS is being reviewed by USEPA and/or Ohio EPA.

c. If a change in the type of fuel or fuel supply/supplier occurs, the permittee must notify USEPA and the Ohio EPA Southeast District Office of the change(s). The permittee must also begin conducting fuel sulfur content monitoring on a weekly basis while the CFMS is being reviewed by USEPA and/or Ohio EPA.

(17) Under Scenario 1, the permittee may request a waiver from the performance testing requirements established in 40 CFR 60.48Da given that the duct burners will fire only pipeline quality natural gas.

(18) Under Scenario 1, the permittee shall comply with all applicable monitoring and recordkeeping requirements under 40 CFR Part 60, Subpart GG (40 CFR 60.330-335).

(19) Under Scenario 1, the permittee shall comply with all applicable monitoring and recordkeeping requirements under 40 CFR Part 60, Subpart Da (40 CFR 60.40Da-52Da) for any period of operation with duct burners firing.

(20) Under Scenario 2, the permittee shall comply with all applicable monitoring and recordkeeping requirements under 40 CFR Part 60, Subpart KKKK (40 CFR 60.4300-4420).

(21) The permit-to-install application for this/these emissions unit(s), P001, P002, P004, and P005, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

   i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or

   ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

TLV/10 x 8/X x 5/Y = 4 TLV/XY = MAGLC

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

Scenario 1:

Toxic Contaminant	TLV (mg/m3)	Maximum Hourly Emission Rate (lbs/hr)	Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3)	MAGLC (ug/m3)
Ammonia	17.41	139.31	29.08	414.60
Formaldehyde	0.368	0.33	0.07	6.47

Scenario 2:

Toxic Contaminant	TLV (mg/m3)	Maximum Hourly Emission Rate (lbs/hr)	Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3)	MAGLC (ug/m3)
Ammonia	17.41	145.20	28.62	414.60
Formaldehyde	0.368	0.35	0.07	6.47

The permittee, has demonstrated that emissions of ammonia and formaldehyde, from emissions unit(s) P001, P002, P004, and P005, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

(22) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the

predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the “Toxic Air Contaminant Statute” will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a “modification”, the permittee shall apply for and obtain a final PTI prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

(23) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F):

a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);

b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F);

c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

(24) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

e) Reporting Requirements

(1) Unless other arrangements have been approved by the Director, all notification and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[OAC rule 3745-15-03(A)]

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. each day when a fuel other than natural gas was burned in this emissions unit;

b. any record which shows that the sulfur content of the natural gas exceeded 0.25 gr/100 scf;

c. all records which show that the start-up durations specified in b)(2)e were exceeded;

d. all records which show that the shutdown duration specified in b)(2)e were exceeded;

e. all records which show that the total number of start-up/shutdown cycles exceeded 250;

f. all exceedances of the NO_x, CO, and/or VOC start-up limitations;

g. all exceedances of the duct burner mmscf limitation; and

h. allexceedances of the rolling, 12-month NO_x, CO, VOC, SO_2, $H_2SO_4$and/or $PM/PM_{10}/PM_{2.5}$ emission limitations.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

[OAC rule 3745-15-03(B)(1)(a)], [OAC rule 3745-15-03(C)], and [OAC rule 3745-77-07(A)(3)(c)]

(3) Under Scenario 1, the permittee shall comply with all applicable reporting requirements under 40 CFR Part 60, Subpart GG (40 CFR 60.330-335).

(4) Under Scenario 1, the permittee shall comply with all applicable reporting requirements under 40 CFR Part 60, Subpart Da (40 CFR 60.40Da-52Da) for any period of operation with duct burners firing.

(5) Under Scenario 2, the permittee shall comply with all applicable reporting requirements under 40 CFR Part 60, Subpart KKKK (40 CFR 60.4300-4420).

(6) Under Scenario 1, for each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content, the permittee must submit reports of excess emissions and monitor downtime in accordance with 40 CFR 60.334(j) and 40 CFR 60.7(c). Excess emissions must be reported for all periods of unit operation, including startup, shutdown and malfunction.

(7) Under Scenario 1, the permittee shall submit periodic reports in accordance with 40 CFR 60.51Da(j) or (k), including the information required under 40 CFR 60.51Da(b) for any period of operation with duct burners firing.

(8) Under Scenario 2, for each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content, the permittee must submit reports of excess emissions and monitor downtime in accordance with 40 CFR 60.4375 and40 CFR 60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shut-down, and malfunction.

(9) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous NO_X monitoring systems

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of NO_X emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, 40 CFR Parts 75 and 76, OAC Chapter 3745-14, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous NO_X and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above;

v. the total NO_X emissions for the calendar quarter (tons);

vi. the total operating time (hours) of the emissions unit;

vii. the total operating time of the continuous NO_X monitoring system while the emissions unit was in operation;

viii. results and dates of quarterly cylinder gas audits or linearity checks;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO_X monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous NO_X monitoring system, emissions unit, and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous NO_X monitoring system and/or control equipment while the emissions unit was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter. Data substitution procedures from 40 CFR 75 are not to be used for showing compliance with the short term OAC 3745-31-10 through 3745-31-20 rule-based or NSPS-based limitation(s) in this permit.

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

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

[40 CFR 60.7; 40 CFR Part 75]

(10) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous CO monitoring system:

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of CO emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60 and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as, the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following.

i. the facility name and address;

ii. the manufacturer and model number of the continuous CO and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above;

v. the total CO emissions for the calendar quarter (tons);

vi. the total operating time (hours) of the emissions unit;

vii. the total operating time of the continuous CO monitoring system while the emissions unit was in operation;

viii. results and dates of quarterly cylinder gas audits;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous CO monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous CO monitoring system, emissions unit, and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous CO monitoring system and/or control equipment while the emissions unit was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter. Data substitution procedures from 40 CFR 75 are not to be used for showing compliance with the short term OAC 3745-31-10 through 3745-31-20 rule-based or NSPS-based limitation(s) in this permit.

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

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

[40 CFR 60.7]

(11) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous O_2 or CO_2 monitoring system:

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR Parts 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of continuous O_2 or CO_2 monitoring system downtime and malfunction while the emissions unit was on line.

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous O_2 or CO_2 and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the total operating time (hours) of the emissions unit;

v. he total operating time of the continuous O_2 or CO_2 monitoring system while the emissions unit was in operation;

vi. results and dates of quarterly cylinder gas audits or linearity checks;

vii. unless previously submitted, results and dates of the relative accuracy test audit(s) (during appropriate quarter(s));

viii. unless previously submitted, the results of any relative accuracy test audit showing the continuous O_2 or CO_2 monitor out-of-control and the compliant results following any corrective actions;

ix. the date, time, and duration of any/each malfunction* of the continuous O_2 or CO_2 monitoring system while the emissions unit was in operation;

x. the date, time, and duration of any downtime* of the continuous O_2 or CO_2 monitoring system while the emissions unit was in operation; and

xi. the reason (if known) and the corrective actions taken (if any) for each event in (b)(ix) and (x).

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

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

[40 CFR 60.7; 40 CFR Part 75]

(12) If using the fuel flow rate to stoichiometrically calculate the mass rate of emissions of NO_X and/or CO, in place of Specification 6 requirements, the permittee shall submit quarterly reports, to the appropriate Ohio EPA District Office or local air agency, that document the date, time, and duration of each malfunction and/or period of downtime of the continuous fuel flow monitoring system, while the emissions unit was in operation, and the reason (if known) and the corrective actions taken (if any) for each such event. If there was no downtime or malfunction of the continuous fuel flow monitoring system during any calendar quarter, the report shall be submitted so stating it. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year.

(13) The permittee shall collect, record, and maintain measurements, data, records, and reports required per 40 CFR Part 75; and shall submit certification, recertification, notifications, applications, monitoring plans, petitions for alternative monitoring systems, electronic quarterly reports, and any other pertinent record and/or report to the Administrator (U.S. EPA), as required by this Part.

[40 CFR Part 75]

(14) The permittee shall submit annual reports that include any changes to any parameter or value used in the dispersion model used to demonstrate compliance with the “Toxic Air Contaminate Statute”, ORC 3704.03(F), through the predicted 1 hour maximum concentration. The report should include:

a. the original model input;

b. the updated model input;

c. the reason for the change(s) to the input parameter(s); and

d. a summary of the results of the updated modeling, including the input changes; and

e. a statement that the model results indicate that the 1-hour maximum ground-level concentration is less than 80% of the MAGLC.

If no changes to the emissions, emissions unit(s), or the exhaust stack have been made during the reporting period, then the report shall include a statement to that effect.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01] and Option A, Engineering Guide #70

f) Testing Requirements

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

a. Emissions Limitation:

NO_X emissions during normal operation shall not exceed 2.0 ppmvd at 15 percent oxygen averaged over a three hour period both with and without duct burners.

Applicable Compliance Method:

Ongoing compliance with the NOx emission limitations contained in this permit, 40 CFR Parts 60 and 75, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60 and 40 CFR Part 75.

NO_x emissions shall be determined according to test Methods 1 - 4, and 20 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

b. Emissions Limitation:

CO emissions during normal operation shall not exceed 2.0 ppmvd at 15 percent oxygen averaged over a three hour period both with and without duct burners. CO emissions during normal operation shall not exceed 10.4 pounds per hour averaged over a three hour period without duct burners and 12.95 pounds per hour averaged over a three hour period with duct burners.

Applicable Compliance Method:

Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping

Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

CO emissions shall be determined according to test Methods 1 - 4, and 10 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

c. Emission Limitation:

$PM/PM_{10}/PM_{2.5}$ emissions shall not exceed 9.5 pounds per hour averaged over a three hour period without duct burners and 15.8 pounds per hour averaged over a three hour period with duct burnersand 58.62 tons $PM/PM_{10}/PM_{2.5}$ per rolling 12-month period.

Applicable Compliance Method:

The annual emissions limitation was established using the following equation:

E = (B* EB + N * EN) / 2,000

Where:

B = Rolling, 12-month hours of duct burner operation for each CCCT

EB = $PM/PM_{10}/PM_{2.5}$ emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for each CCCT

EN = $PM/PM_{10}/PM_{2.5}$emission rate without duct burner (lb/hr)

Therefore:

(5,400 * 15.8 + 3,360 * 9.5) / 2,000 = **58.62 tons $PM/PM_{10}/PM_{2.5}$ per rolling 12-month period**

Compliance with the allowable pound per hour limitation shall be demonstrated by the performance testing as described in condition f)(4). Compliance with the annual emission limitation shall be determined by the recordkeeping required in condition d)(6).

$PM/PM_{10}/PM_{2.5}$ shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources"and Method 202, as set forth in 40 CFR Part 51, Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

d. Emission Limitation:

VOC emissions during normal operation shall not exceed 4.2 pounds per hour averaged over a three hour period without duct burners and 11.5 pounds per hour averaged over a three hour period with duct burners.

Applicable Compliance Method:

Compliance with the allowable pound per hour limitation shall be demonstrated by the performance testing as described in condition f)(4).

VOC emissions shall be determined according to test Methods 1 - 4, and 18, 25, or 25A as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

e. Emission Limitation:

Total allowable emissions (per unit, including startup and shutdown) shall not exceed 435.30 tons NO_x per rolling 12 month period for P001, P002, P004, and P005 combined.

Applicable Compliance Method:

This emission limitation was derived from the equation in Section B.7. Ongoing compliance with the NOx emission limitations contained in this permit, 40 CFR Parts 60 and 75, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60 and 40 CFR Part 75.

f. Emission Limitation:

Total allowable emissions (per unit, including startup and shutdown) shall not exceed 5,074.08 tons CO per rolling 12 month period for P001, P002, P004, and P005 combined.

Applicable Compliance Method:

This emission limitation was derived from the equation in Section B.8. Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

g. Emission Limitation:

Total allowable emissions (per unit, including startup and shutdown) shall not exceed 611.14 tons VOC per rolling 12 month period for P001, P002, P004, and P005 combined.

Applicable Compliance Method:

This emission limitation was derived from the equation in Section B.9. Ongoing compliance with the VOC emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit.

h. Emission Limitation:

Fuel sulfur content shall not exceed 0.25 grains per 100 standard cubic feet of fuel (H_2SO_4), and SO_2 emissions shall not exceed 2.4 tons per month averaged over a 12-month period for emission units P001, P002, P004, and P005 combined.

Applicable Compliance Method:

The monthly emissions limitation was established using the following equation:

E = (B* EB + N * EN) / 2,000

Where:

B = Rolling, 12-month hours of duct burner operation for each CCCT

EB = SO_2 emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for each CCCT

EN = SO_2 emission rate without duct burner (lb/hr)

Therefore:

(5,400* 1.8 + 3,360 * 1.4) / 2,000 = 7.2 tons SO_2 per rolling 12-month period per emission unit

(7.2 * 4 turbine) = 28.8 tons SO_2 per rolling, 12-month summation for emission units P001, P002, P004, and P005 combined

(28.8 TPY SO_2) / (12 months/year) = **2.4 tons per month averaged over a 12-month period for emission units P001, P002, P004, and P005 combined**

Compliance with the allowable limitation shall be demonstrated by monitoring the sulfur content of the fuel being fired pursuant to d)(16).

i. Emission Limitation:

Visible particulate emissions from this unit shall not exceed 20% opacity, as a 6-minute average, except as provided by OAC rule 3745-17-07(A).

Applicable Compliance Method:

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

j. Emission Limitation:

GHG emissions, in terms of an equivalent heat rate limit, shall not exceed 7,471 British Thermal Units per kilowatt-hour (High Heating Value).

Applicable Compliance Method:

Compliance with the hourly allowable emission limitation shall be demonstrated by the periodic testing of the unit as required in condition f)(5)d.

k. Emission Limitation:

CO_2e emissions shall not exceed 4,898,977 tons per rolling 12-month summation for emission units P001, P002, P004, and P005 combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be determined by the recordkeeping required in condition d)(6).

l. Emission Limitations:

SO_2 emissions from any turbine must not exceed 0.015% by volume on a dry basis at 15% oxygen, or fuels burned in the turbine must not contain sulfur in concentrations greater than 0.8 percent by weight (8,000 ppmw).

Applicable Compliance Method:

If required, compliance shall be demonstrated through testing performed in accordance with 40 CFR Part 60, Subpart GG §60.335.

m. Emission Limitations:

SO_2 emissions from the duct burners must not exceed 1.0 lb/MWh of gross energy output, 1.2 lb/MWh of net energy output, or 3% of the total potential combustion concentration (97% reduction).

Applicable Compliance Method:

If required, compliance shall be demonstrated through testing performed in accordance with 40 CFR Part 60, Subpart Da §60.50.

(2) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions for **Scenario 2** shall be determined in accordance with the following methods:

a. Emissions Limitation:

NO_X emissions during normal operation shall not exceed 2.0 ppmvd at 15 percent oxygen averaged over a three hour period both with and without duct burners.

Applicable Compliance Method:

Ongoing compliance with the NOx emission limitations contained in this permit, 40 CFR Parts 60 and 75, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60 and 40 CFR Part 75.

NO_x emissions shall be determined according to test Methods 1 - 4, and 20 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

b. Emissions Limitation:

CO emissions during normal operation shall not exceed 2.0ppmvd at 15 percent oxygen averaged over a three hour period both with and without duct burners. CO emissions during normal operation shall not exceed 12.0 pounds per hour averaged over a three hour period without duct burners and 14.88 pounds per hour averaged over a three hour period with duct burners

Applicable Compliance Method:

Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

CO emissions shall be determined according to test Methods 1 - 4, and 10 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test

methods may be used with prior approval from Ohio EPA, Southeast District Office.

c. Emission Limitation:

$PM/PM_{10}/PM_{2.5}$ emissions shall not exceed 15.9 pounds per hour averaged over a three hour period without duct burners and 22.2 pounds per hour averaged over a three hour period with duct burners; and 86.7 tons $PM/PM_{10}/PM_{2.5}$ per rolling 12-month period.

Applicable Compliance Method:

The annual emissions limitation was established using the following equation:

E = (B* EB + N * EN) / 2,000

Where:

B = Rolling, 12-month hours of duct burner operation for each CCCT

EB = $PM/PM_{10}/PM_{2.5}$ emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for each CCCT

EN = $PM/PM_{10}/PM_{2.5}$emission rate without duct burner (lb/hr)

Therefore:

(5,400 * 22.2 + 3,360 * 15.9) / 2,000 = **86.7 tons $PM/PM_{10}/PM_{2.5}$ per rolling 12-month period**

Compliance with the allowable pound per hour limitation shall be demonstrated by the performance testing as described in condition f)(5). Compliance with the annual emission limitation shall be determined by the recordkeeping required in condition d)(6).

$PM/PM_{10}/PM_{2.5}$ shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and Method 202, as set forth in 40 CFR Part 51, Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

d. Emission Limitation:

VOC emissions during normal operation shall not exceed 2.9 pounds per hour averaged over a three hour period without duct burners and 11.1 pounds per hour averaged over a three hour period with duct burners.

Applicable Compliance Method:

Compliance with the allowable pound per hour limitation shall be demonstrated by the performance testing as described in condition f)(4).

VOC emissions shall be determined according to test Methods 1 - 4, and 18, 25, or 25A as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

e. Emission Limitation:

Total allowable emissions (per unit, including startup and shutdown) shall not exceed 449.31 tons NO_x per rolling 12 month period for P001, P002, P004, and P005 combined.

Applicable Compliance Method:

This emission limitation was derived from the equation in Section B.10. Ongoing compliance with the NOx emission limitations contained in this permit, 40 CFR Parts 60 and 75, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60 and 40 CFR Part 75.

f. Emission Limitation:

Total allowable emissions (per unit, including startup and shutdown) shall not exceed 5,101.7 tons CO per rolling 12 month period for P001, P002, P004, and P005 combined.

Applicable Compliance Method:

This emission limitation was derived from the equation in Section B.11. Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

g. Emission Limitation:

Total allowable emissions (per unit, including startup and shutdown) shall not exceed 600.62 tons VOC per rolling 12 month period for P001, P002, P004, and P005 combined.

Applicable Compliance Method:

This emission limitation was derived from the equation in Section B.12. Ongoing compliance with the VOC emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit.

h. Emission Limitation:

Fuel sulfur content shall not exceed 0.25 grains per 100 standard cubic feet of fuel (H_2SO_4), and SO_2 emissions shall not exceed 2.55 tons per month averaged over a 12-month period for emission units P001, P002, P004, and P005 combined.

Applicable Compliance Method:

The monthly emissions limitation was established using the following equation:

E = (B* EB + N * EN) / 2,000

Where:

B = Rolling, 12-month hours of duct burner operation for each CCCT

EB = SO_2 emission rate with duct burner (lb/hr)

N = Rolling, 12-month hours of normal operation without duct burner for each CCCT

EN = SO_2 emission rate without duct burner (lb/hr)

Therefore:

(5,400* 1.9 + 3,360 * 1.5) / 2,000 = 7.65 tons SO_2 per rolling 12-month period per emission unit

(7.65 * 4 turbine) = 30.6 tons SO_2 per rolling, 12-month summation for emission units P001, P002, P004, and P005 combined

(30.6 TPY SO_2) / (12 months/year) = **2.55 tons per month averaged over a 12-month period for emission units P001, P002, P004, and P005 combined**

Compliance with the allowable limitation shall be demonstrated by monitoring the sulfur content of the fuel being fired pursuant to d)(20).

i. Emission Limitation:

Visible particulate emissions from this unit shall not exceed 20% opacity, as a 6-minute average, except as provided by OAC rule 3745-17-07(A).

Applicable Compliance Method:

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

j. Emission Limitation:

GHG emissions, in terms of an equivalent heat rate limit, shall not exceed 7,471 British Thermal Units per kilowatt-hour (High Heating Value).

Applicable Compliance Method:

Compliance with the hourly allowable emission limitation shall be demonstrated by the periodic testing of the unit as required in condition f)(5)d.

k. Emission Limitation:

CO_2e emissions shall not exceed 5,174,943 tons per rolling 12-month summation for emission units P001, P002, P004, and P005 combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be determined by the recordkeeping required in condition d)(6).

l. Emission Limitations:

SO_2 emissions from any turbine must not exceed 0.90 lbs/MWh of gross output, or fuels burned in the turbine must not contain sulfur in concentrations which would result in potential sulfur emissions in excess of 0.060 lbs SO_2/MMBtu heat input.

Applicable Compliance Method:

If required, compliance shall be demonstrated through testing performed in accordance with 40 CFR Part 60, Subpart KKKK §60.4415.

(3) Within 60 days of achieving the maximum production rate at which the emissions unit(s) will be operated, but not later than 180 days after initial startup, the permittee shall conduct certification tests of the continuous NO_x monitoring system in units of the applicable standard(s) to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specifications 2; ORC section 3704.03(I); and 40 CFR Part 75. The permittee may test the continuous NO_x monitoring system in accordance with requirements for monitoring systems subject to 40 CFR Part 75, Appendix B, if the test results are reported in units of the applicable standard(s) and approved by Ohio EPA.

Personnel from the Ohio EPA Central Office and the appropriate Ohio EPA District Office or local air agency shall be notified 45 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests.

Two copies of the test results shall be submitted to Ohio EPA, one copy to the appropriate Ohio EPA District Office or local air agency and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification, or recommendation for certification by Ohio EPA to U.S. EPA, of the continuous NO_x monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets the requirements of 40 CFR Par 60, Appendix B, Performance Specifications 2; ORC section 3704.03(I); and 40 CFR Part 75.

Ongoing compliance with the NO_xemissions limitations contained in this permit, 40 CFR Parts 60 and 75, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Recordkeeping Section of this permit; and through demonstration of compliance with the quality assurance and quality control plan, which shall meet the testing recertification requirements of 40 CFR Part 60 and 40 CFR Part 75.

[40 CFR 60.8]; [40 CFR 60.13]; [40 CFR Part 60, Appendices B&F]; and [40 CFR Part 75]

(4) Within 60 days of achieving the maximum production rate at which the emissions unit(s) will be operated, but not later than 180 days after initial startup, the permittee shall conduct certification tests of the continuous CO monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a (as appropriate); and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the appropriate Ohio EPA District Office or local air agency and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 4 or 4a (as appropriate) and ORC section 3704.03(I).

Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

[40 CFR 60.8]; [40 CFR 60.13] and [40 CFR Part 60, Appendices B & F]

(5) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted in conjunction with the next scheduled RATA testing, after final issuance of the Permit To Install, but not to exceed 180 days.

b. The emission testing shall be conducted to demonstrate compliance with the allowable emissions limitations for $PM/PM_{10}/PM_{2.5}$, CO, NO_X, and VOC.

c. The following test method(s) shall be employed to demonstrate compliance with the above emissions limitations:

NO_X	Method 20 of 40 CFR Part 60, Appendix A
$PM/PM_{10}/PM_{2.5}$	Method 5 of 40 CFR Part 60, Appendix A and 40 CFR Part 51, Appendix M, Method 202
VOC	Method 25 of 40 CFR Part 60, Appendix A
CO	Method 10 of 40 CFR Part 60, Appendix A

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. Compliance with the heat rate GHG BACT limit of 7,471 Btu/kW-hr (HHV) will be demonstrated based on periodic heat rate performance testing using the American Society of Mechanical Engineers (ASME) Performance Test Code on Overall Plant Performance (ASME PTC 46-1996), conducted at base load without duct firing or inlet evaporative cooling, corrected to ISO conditions (except that the site elevation standard ambient pressure will be used), and not accounting for transformer losses. The permittee shall conduct the performance test at a frequency of at least once every 25,000 hours of operation of each CCCT blockcalculated as the average of the operating hours for the two combustion turbines in each CCCT block.

e. The testing shall be conducted while the emissions unit is operating at or near its maximum capacity unless otherwise specified or approved by Ohio EPA or local air agency.

f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Southeast District Office. 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 Ohio EPA, Southeast District Office refusal to accept the results of the emission test(s).

g. Personnel from the Ohio EPA, Southeast District Office 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.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast District Office 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 Ohio EPA, Southeast District Office.

g) Miscellaneous Requirements

(1) None.