SANDUSKY COUNTY

PUBLIC NOTICE
ISSUANCE OF DRAFT PERMIT TO INSTALL
SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW
FOR FREMONT ENERGY CENTER

Public Notice is hereby given that the staff of the Ohio Environmental Protection Agency (EPA) has recommended to the Director that the Ohio EPA issue a draft action of a Permit to Install (PTI) to Fremont Energy Center, located in a portion of Sandusky County proposed for annexation by the city of Fremont, Ohio. The site is adjacent to a FirstEnergy electrical substation. Access to the site is via Route 20 and Routes 53/6 just south of the site, Route 73 to the north, and Routes 19 and 57 to the east. The draft action (permit no. 03-13549) was issued on June 12, 2001.

This draft permit proposes to allow the installation of the following emission units:

- Two natural gas-fired combustion turbine generators (CTGs);
- Two HRSGs, each of which will contain a natural gas-fired duct burner;
- A 20-cell mechanical draft cooling tower;
- A natural gas-fired auxiliary steam boiler used for facility start up and keep-warm operations;
- A small diesel oil-fired emergency generator;
- A diesel oil-fired fire water pump; and
- Two natural gas-fired fuel preheaters.

The proposed allowable air emission rates are listed below, in tons per year:

Air Contaminant	Tons Per Year
NOx	422
CO	1248.3
SO2	133.7
PE	213.7
VOC	211.9
Ammonia	15.3
Formaldehyde	194.5
Sulfuric Acid	28.9

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).

Within 30 days from the date of this notice, any interested party may submit comments or request a public hearing. Comments are to be sent to Mark Barber of the Northwest District Office, Ohio Environmental Protection Agency, 347 North Dunbridge Road, Bowling Green, Ohio, 43402.

Further information concerning this application, which is available for public inspection, may be secured from Mark Barber of the Northwest District Office at the above address during normal business hours. Telephone number: (419) 352-8461.

STAFF DRAFT ACTION DETERMINATION
FOR THE APPLICATION OF FREMONT ENERGY CENTER, LLC
PREVENTION OF SIGNIFICANT DETERIORATION (PSD)
AIR PERMIT TO INSTALL NO. 03-13549
FOR TWO 180 MEGAWATTS NATURAL GAS FIRED WESTINGHOUSE 501FD TURBINES
TO BE LOCATED IN SANDUSKY, COUNTY, OHIO

June 6, 2001

Ohio Environmental Protection Agency
Division of Air Pollution Control
122 South Front Street
Columbus, Ohio 43215

Facility Description

The proposed site (Fremont) is located in a portion of Sandusky County proposed for annexation by the city of Fremont, Ohio. The site consists of approximately 80 acres of flat farmland situated approximately 2 miles northwest of the city. The site is east of Route 138, adjacent to a FirstEnergy electrical substation. Farm fields abut the site to the north, east, and south. Access to the site is via Route 20 and Routes 53/6 just south of the site, Route 73 to the north, and Routes 19 and 57 to the east. An abandoned railroad corridor extends diagonally northwest to southeast through the southwestern corner of the site. The corridor is no longer in use, and the Sandusky County Park District plans to convert it to a recreational trail. The proposed facility will be equipped with the following emission units:

- Two natural gas-fired combustion turbine generators (CTGs);
- Two HRSGs, each of which will contain a natural gas-fired duct burner;
- A 20-cell mechanical draft cooling tower;
- A natural gas-fired auxiliary steam boiler used for facility start up and keep-warm operations;
- A small diesel oil-fired emergency generator;
- A diesel oil-fired fire water pump; and
- Two natural gas-fired fuel preheaters.

The proposed Project primarily involves the construction and operation of 2 fuel combustion equipment for the generation of electricity. Pipeline natural gas will be used as fuel in the CTGs and duct burners. The natural gas will have a maximum sulfur content of 2 grains per 100 standard cubic feet (gr/100 scf). Nitrogen oxides (NO_x) emissions will be minimized through the use of dry low-NO_x (DLN) burners and selective catalytic reduction (SCR). Carbon dioxide (CO) emissions will be minimized through the use of good combustion practices (GCP) and catalytic oxidation.

Particulate emissions will be released from the mechanical draft cooling tower due to drift. The particulate matter is the result of concentration of dissolved solids in the cooling water system. This loss will be minimized through the use of drift eliminators.

The Project is designed to be a nominal 540 MW energy facility and will utilize advanced gas turbine/steam turbine, combined-cycle technology to generate electricity. When the two gas turbines are fired at their maximum capability and the heat recovery steam generators (HRSGs) are also operated using auxiliary firing, the maximum net plant output will be approximately 770 MW at a 10 degrees Fahrenheit (°F) ambient temperature.

The Project will be designed to operate exclusively on natural gas. Fremont Energy has determined that, due to the high level of reliable natural gas delivery to the Project site, a back-up fuel such as fuel oil is not required.

Air Quality Designations

Under Section 107 of the Clean Air Act as of June 24, 1992, the area which contains the proposed facility was classified as

attainment for all of the criteria pollutants, i.e., total suspended particulates, particulate matter less than 10 microns, sulfur dioxide, nitrogen oxides, carbon monoxide, lead, and volatile organic compounds (ozone).

New Source Review (NSR)/PSD Applicability

This facility is classified as a "major" stationary source because the potential emissions exceed 250 tons per year of one of the criteria pollutants (NO_x and CO) threshold level in an attainment area and thus would be classified as a major stationary air source under the federal Prevention of Significant Deterioration (PSD) program. Since the facility is a "major" stationary source for PSD, any additional pollutants that would emit a regulated pollutant at a rate in excess of the significance levels would require the facility to perform a PSD analysis for those pollutants. Table 1 shows the potential emissions of these pollutants:

Table 1, Potential Emissions and significant Thresholds

Pollutant	Tons/Year #	Significant Level
Nitrogen Oxides (NO_x)	422	40
Sulfur Dioxide (SO_2)	134	40
Particulate Matter*	214	15
Carbon Monoxide (CO)	1248	100
Volatile Organic Compounds(VOC)	212	40
Sulfuric Acid Mist (H_2SO_4)	29	7

The result is that Fremont submitted a PSD analysis for the following pollutants: NOx, VOC, PM*, SO_2, CO, and H_2SO_4.

* Particulate Matter and Particulate Matter <10 are assumed to be the same.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Part 63, 112(g) and Ohio Administrative Code (OAC) rule 3745-31-28 Applicability

Currently there are no standards that have been promulgated for this project. If no standard has been promulgated, then the project is evaluated based upon the amount of Hazardous Air Pollutants (HAP) emitted. If over the threshold levels, then a Maximum Achievable Control Technology (MACT) determination must be submitted for review. (The duct burners associated with this project are exempt from this applicability due to these units meeting the definition of electric steam generating unit.) This facility will accept HAP emission restrictions to levels below to avoid submitting a MACT determination.

New Source Performance Standards (NSPS) Applicability

Each of the combined cycle gas fired combustion turbines augmented with supplementary natural gas fired duct burners is subject to 40 CFR 60 Subpart GG, "Standards of Performance for Stationary Gas Turbines" and 40 CFR 60 Subpart Da, "Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978".

The auxiliary boiler (80 MMbtu/hr on an HHV) is subject to 40 CFR 60 Subpart Dc, "Standards of Performance for Small Industrial/Comerica/Institutional Steam Generating Units".

The Stationary Gas Turbine NSPS applies to emissions for NO_x and SO_2. The emission standard for NO_x emissions applicable to the combustion turbine [from the equation in 40 CFR 60.332(a)(1)] is 0.0075 percent by volume (75 ppmv) at 15 percent oxygen on a dry basis. This standard is applicable to either fuel oil or natural gas combustion. The emission standard for SO_2 emissions applicable to the combustion turbine [from the equation in 40 CFR 60.333(b)] is 0.015 percent by volume (150 ppmv) at 15 percent oxygen on a dry basis. SO_2 emissions from combustion turbines are further limited by 40 CFR 60.333(b) which prohibits burning fuel that contains sulfur in excess of 0.8 percent by weight.

BACT Control Technology Review

1.0. Overview

Preconstruction review for new or modified air pollutant sources involves an evaluation of the use of BACT and/or BAT. BAT must be employed on a pollutant-by-pollutant basis for all new or modified air pollutant sources for which a PTI is required. Once PSD review is triggered, as is the case for this Project, BACT must be employed for each air pollutant that is emitted at a rate that exceeds its pollutant-specific PSD significant emission rate. BAT and BACT evaluations are performed on a Project-specific basis. Because BACT applies only to pollutants emitted in "major" amounts, BAT review is usually performed for pollutants emitted in amounts that are less than major but still require a PTI to be obtained. Selection of BAT can be based on work practices as well as the use of add-on control devices and must consider the cost-effectiveness of the selected technique. BACT, on the other hand, is an emission limit and cannot include work practice standards. Like BAT, selection of an emission limit that represents BACT must consider the economics of the selection as well as the energy and environmental impacts that could result from use of the technique or technology.

The BACT analysis for the Fremont Energy Center uses the top-down procedure published by USEPA in 1990. The method, as outlined in the New Source Review Workshop Manual, identifies the following steps as part of a BACT review:

- Identify all control technologies
- Eliminate technically infeasible options
- Rank remaining control technologies by control effectiveness
- Evaluate the most effective controls and document results
- Select BACT

Based on Project emissions, a BACT evaluation is required for NO_x, CO, PM_{10}, VOC, SO_2, and H_2SO_4. A BACT evaluation is required for each combustion unit and the mechanical draft cooling towers; for the cooling towers, only PM_{10} requires a BACT evaluation. In addition, the Project will include several minor emission units, including a fire water pump and emergency generator (which will require a small fuel oil storage tank), two natural gas-fired heaters (one standby) to preheat the natural gas for the CTGs, and an auxiliary boiler firing natural gas to accelerate facility start up. The various small combustion units emit NO_x, CO, PM_{10}, VOC, and SO_2. Due to size and/or hours of operation, the fire water pump, emergency generator, preheaters, and fuel oil tank are exempt from permitting requirements.

The auxiliary boiler and gas preheaters will use good combustion practices (GCP) and LNB to minimize emissions. Units of this size are generally not required to employ add-on controls to reduce emissions. Therefore, emissions resulting from the use of GCP and LNB for the boiler and preheaters are considered BACT for the auxiliary boiler.

2.0. Identification of All Control Technologies

As a starting point, databases maintained by the USEPA and Ohio EPA are reviewed to obtain a summary of previous BACT/BAT evaluations. These evaluations allow an Applicant to identify control technologies in use at other similar facilities. The database review is then followed by a site-specific review of the emission reduction technique(s) to be incorporated into a proposed Project. Selection of BACT/BAT is then performed while considering the requirements of the evaluation as defined in OAC 3745-31-01.

The USEPA RACT/BACT/LAER Clearinghouse (RBLC) was reviewed for data pertaining to NO_x, CO, PM_{10}, VOC, SO_2 and H_2SO_4 emission control methods. The RBLC contains information on 189 related projects. Appendix C presents a listing of the RBLC search results for gas turbines and gas combustion. In addition, a similar search was conducted on the Ohio EPA BAT database. Appendix D presents a printout of that information for turbines and utility boilers. Since these databases are not always up to date, the current review was enhanced with information received from Ohio EPA, the Indiana Department of Environmental Management, and the West Virginia Office of Air Quality. Information from these data sources has been condensed to only present data from comparable units for each pollutant-specific BACT evaluation.

3.0. Discussion of NO_x Control Options

Nitrogen oxide emissions from combustion turbines and duct burners consist of two types: thermal NO_x and fuel-related NO_x. Thermal NO_x is formed by the high temperature reaction of nitrogen and oxygen during combustion. The amount formed is a function of the combustion chamber design and the combustion turbine operating parameters, including flame temperature, residence time at flame temperature, combustion pressure, and fuel/air ratios in the primary combustion zone. Fuel NO_x is formed by the gas-phase oxidation of fuel-bound nitrogen. Fuel NO_x formation is largely independent of combustion temperature and the nature of the organic nitrogen compound; rather, its formation is dependent on fuel nitrogen content and combustion oxygen levels. Natural gas contains a negligible amount of fuel-bound nitrogen. Therefore, only thermal NO_x is formed by natural gas-fired combustion turbines and duct burners.

3.1. Review of NO_x BACT Database

The RBLC and the Ohio BAT database were screened to identify natural gas-fired combined-cycle CTGs for this NO_x BACT analysis. Based on a review of the BACT information, with the exception of one small generating unit, the BACT determinations for all recently permitted combined-cycle projects are based on the use of DLN burner technology in combination with SCR. The exception is one small combustion turbine that was permitted to employ water injection in combination with SCONOx™.

3.2. Identification of NO_x Control Options

Control technologies considered in the BACT analysis must meet applicable NSPS requirements to be considered viable. The following options were identified for controlling NO_x emissions:

- SCR
- DLN for the CTGs
- LNB for the duct burners
- Water Injection
- Selective Non-catalytic Reduction (SNCR)
- Non-Selective Catalytic Reduction (NSCR)
- $SCONO_x$ System
- Xonon™

3.3. Technical Feasibility of NO_x Control Options

As discussed herein, water injection, SNCR, NSCR, $SCONO_x$ and Xonon are considered technically infeasible.

3.3.1. Technically Infeasible NO_x Control Options

Water Injection – Water injection cannot be used with DLN combustors, and additionally cannot achieve NO_X emission levels as low as DLN combustors, so it is considered technically infeasible.

SNCR – Selective non-catalytic reduction requires the addition of ammonia or a similar type of selective reductant in the combustion zone where the temperature is in the 1,500 to 2,000°F range. The proposed Project gas turbines exhaust temperature at the turbine exit is in the 950 to 1,050°F range during normal operation (although the duct burner exit temperature could go as high as 1,600°F). SNCR is not considered feasible because it cannot cover the full range of expected operating temperatures.

NSCR – Non-selective catalytic reduction is the catalytic approach used to control NO_x emissions from mobile sources such as automobiles. For this approach to work, the combustion process is run in a fuel-rich mode to generate unburned hydrocarbon radicals. These compounds then serve as the non-selective reactant for the NO_x reduction reactions. An additional oxidation catalyst is then required behind the reduction catalyst to complete the oxidation process so that VOC emissions are not increased. Use of this approach is considered technically infeasible because the DLN combustors are not designed to run in a fuel-rich mode. In addition, this approach increases the likelihood of additional VOC emissions from

the process.

SCONO$_x$ – SCONO$_x$ is a trade name for a proprietary NO$_x$ control technology being marketed by Goal Line Technologies. The Environmental Systems division of Alstom Power is the licensee for SCONO$_x$ systems on combustion turbine units over 100 MW. On December 1, 1999, Alstom Power issued a press release announcing the commercial offering of the SCONO$_x$ process for large combustion turbines. In spite of this announcement of the availability of a commercial offering for "any size" combustion turbine combined-cycle system, it is important to recognize that the largest unit on which SCONO$_x$ has operated is the 28 MW LM2500 unit at the Federal Facility in California. The 28 MW combined-cycle Federal Facility is less than 10 percent of the size of one of the Project's combined-cycle units. The Federal Facility is also owned by one of the partners of Goal Line Technologies.

The SCONO$_x$ system uses a potassium carbonate-coated catalyst to oxidize CO to CO_2 and reduce NO$_x$ to N_2 and water. The SCONO$_x$ bed preferentially absorbs sulfur compounds. If sulfur is a problem (which it has been even for natural gas-fired facilities using this technology), then a catalyst bed (known as SCOSO$_x$™) is placed before the SCONO$_x$ catalyst to capture the sulfur compounds. The process operates at the exhaust of the HRSG where the exhaust temperature is 350 to 450°F. The potassium carbonate must be regenerated frequently with a reducing gas to remain effective. Natural gas is used to generate hydrogen gas, which is then used for regeneration of the catalyst beds. This regeneration requires sophisticated dampers and ductwork. The potassium carbonate catalyst bed is also rejuvenated every 6 months to a year by dipping the catalyst beds in a solution of potassium carbonate.

There has been no experience scaling up the large dampers and duct work associated with SCONO$_x$ by a factor of 20. Recently proposed large scale projects involving SCONO$_x$ include the following:

- The La Paloma Project near the town of McKittrick, California is a 1,048 MW facility licensed with the ability to use either SCR or SCONO$_x$ for NO$_x$ control. Construction is currently proceeding using SCR only; SCONO$_x$ is not being installed at that site.
- The Otay Mesa Project in California is a 510 MW facility for which a final permit has not been issued. Again, the draft permit allows for the use of either SCR or SCONO$_x$ at the same emission level. Vendor guarantees for SCONO$_x$ were not available when requested by the reviewing agency.
- The Nueva Azalea Project (formerly the Sunlaw Cogeneration Partners I), a 550 MW facility proposed in the city of South Gate, California, is being developed by one of the co-owners of the SCONO$_x$ process. This project is currently under review, and is clearly intended as a demonstration project it if is approved.

Based upon available information, SCONO$_x$ is considered to be infeasible for the following reasons:

- Lack of demonstrated technology at a facility independent from the manufacturer;
- The extremely large scale-up required;
- The critical dependence of the SCONO$_x$ system on numerous moving parts (louvers) in the HRSG to provide an air-tight seal at high temperatures on portions of the system for periodic catalyst regeneration;
- Unknown length and extent of catalyst degradation and the lack of information on long-term commercial availability of catalyst material;
- Lack of adequate demonstration for the proposed sulfur removal system (SCOSO$_x$); and
- Lack of demonstration of the recommended methane regeneration methodology.

Xonon – A new NO$_x$ control technology for combustion turbines, known as the Xonon Combustion System, is being developed for large turbine engine applications. The concept differs from end-of-pipe controls such as SCONO$_x$ and SCR in that it is comprised of a catalyst that is placed in the turbine combustors, permitting the fuel and air to burn at lower temperatures and, consequently, causing lower NO$_x$ formation without addition of ammonia or urea. The catalyst life is not known but is expected to be short. Preliminary test data indicate an exhaust NO$_x$ concentration of about 3 ppmvd. Because no facilities are known to employ Xonon, the technology is currently considered technically infeasible.

3.3.2. Technically Feasible NO$_x$ Control Options

The two technically feasible NO$_x$ control technologies are DLN burners and SCR.

DLN Burners – Prior to the development of premix based DLN burners, fuel and air were injected separately into the combustion zone of a turbine where oxygen in the combustion air diffused to the flame front located at the fuel burner. The result of this approach was a range of fuel-to-air ratios over which combustion occurred at a corresponding range of flame temperatures. The DLN burner combustion process works to reduce the amount of thermal NO_x that is formed by lowering the overall temperature within the combustion turbine combustion zone. The lowered flame temperature is accomplished by premixing the fuel and air at controlled stoichiometric ratios prior to combustion. This method of control reduces NO_x emissions from the Siemens Westinghouse turbine to 25 ppmvd at 15 percent O_2, and is proposed for the Project.

SCR – Selective catalytic reduction is often coupled with DLN combustion to reduce thermal NO_x. SCR is a post-combustion control technology in which ammonia reacts with NO_x in the presence of a catalyst to form N_2 and water. The active surface of the catalyst is usually a noble metal, base metal (titanium or vanadium) oxide, or a zeolite-based material. SCR systems operate in the 500 to 800°F range. An ammonia injection grid is located upstream of the catalyst body and designed to disperse ammonia throughout the exhaust flow before it enters the catalyst unit. The desired level of NO_x control is a function of the catalyst volume and ammonia-to-NO_x ratio. Increasing the ammonia-to-NO_x ratio for a given catalyst volume can achieve higher NO_x emission reductions but can also result in unreacted ammonia, which is emitted as ammonia slip.

3.4. Effectiveness of Technically Feasible NO_x Control Options

BACT determinations for NO_x have varied from 2.5 to 5.0 ppmvd. Only three systems define BACT as less than 3.5 ppmvd, with the overall average being approximately 4 ppmvd. All of the projects with BACT NO_x emission rate limits below 3.5 ppmvd are located in California. CEMS experience at the Sacramento Power Authority (utilizing SCR) and Sunlaw (Federal) Cogeneration (utilizing $SCONO_x$) Facilities has shown that permitted NO_x emission rate limits are not always met. In fact, CEMS data show dozens of exceedances of the NO_x emission rate during periods when the $SCONO_x$ system was operating at the Federal Cogeneration facility. NO_x BACT emission rate limits below 3.5 ppmvd are also subject to an emission rate measurement uncertainty of ± 1 ppmvd.

Based on the information from the RBLC and state agencies, the proposed BACT level for the Project's electric generating units are 3.5 ppmvd, corrected to 15 percent O_2, based on a 3-hour rolling average. The 3.5 ppmvd limit is found in five approved permits, including the Covert Generation Project in Michigan which was permitted earlier this year, and is the fourth most stringent permitted BACT limit found during our review.

The low NO_x emission rate achievable through the use of add-on control technology cannot always be met during start up, shutdown, and malfunctions. The SCR system cannot achieve these low rates during these periods until the system reaches the required operating temperature. The proposed BACT level, therefore, will not be applicable to periods of start up, shutdown, and malfunction.

3.5. Economic Evaluation of NO_x Control Options

Capital costs associated with the installation of an SCR system were based on a vendor quotation for the Project. Capital costs associated with installation of a $SCONO_x$ system were based on vendor quotations for smaller projects and scaled up to the required size. No costs are presented for the DLN combustors or LNBs since the burners are an integral part of the CTG and duct burner designs. Capital costs and annualized costs were developed using the procedures presented in Ohio EPA's Guidance for Estimating Capital and Annual Costs of Air Pollution Control Systems (presented in Engineering Guide 46). The cost-effectiveness of the NO_x control system was then calculated by dividing the total annual cost by the annual tons of pollutant removed.

The SCR is guaranteed by the equipment vendor to control NO_x to 3.5 ppmvd, corrected to 15 percent O_2, yielding a removal efficiency of 86 percent. The $SCONO_x$ was also assumed to control NO_x to 3.5 ppmvd, corrected to 15 percent O_2, yielding a removal efficiency of 86 percent. Based on the annualized cost values and 2,018 tons of NO_x removed, SCR coupled with DLN and LNB has a cost-effectiveness of $1,126/ton of NO_x removed. The cost-effectiveness of $SCONO_x$ is over two times higher at $2,950/ton of NO_x removed.

Energy and Environmental Considerations: Application of either SCR or $SCONO_x$ will produce an impact on the Project's energy efficiency. Installation of either system will increase the pressure drop experienced in the turbine exhaust flow. Additional fuel must then be consumed to offset this lost power. A 0.2 percent performance loss has been estimated for this Project. The energy impact of employing either of these systems is considered insignificant.

Other environmental impacts will also be associated with the use of either SCR or $SCONO_x$. Both systems will require the disposal of spent catalyst materials, but the use of $SCONO_x$ will result in greater amounts of water consumption and the generation of substantial quantities of wastewater. $SCONO_x$ is capable of removing CO and VOC emissions, but control to a greater degree than DLN combustors has not been documented. The use of $SCONO_x$ will also result in emissions of regeneration gases and byproducts. With SCR, other impacts include the potential for accidental releases during the transportation and storage of ammonia, the SCR reagent. However, the potential for such impacts will be greatly reduced through the use of aqueous ammonia diluted to less than 20 percent ammonia concentration. The use of SCR will also result in higher emission rates of H_2SO_4 and ammonia sulfate particulate matter, but these emissions will be limited by the low sulfur content of natural gas and associated air quality impacts will be insignificant.

The proposed Project will produce no significant NO_x air quality impact beyond the plant boundary after application of DLN/LNB/SCR technology. The Project's ammonia emissions will produce a level of ammonia in ambient air that is less than the maximum level allowed under Ohio EPA's air toxics policy. Because no significant air pollutant impacts are expected to result after application of DLN/LNB/SCR technology, no environmental benefit would be associated with the purchase and operation of $SCONO_x$, which has not been demonstrated in large turbines such as those proposed for this Project.

3.7. Determination of BACT for NO_X

As demonstrated by the review of recent BACT permit actions presented in the RBLC output (see Appendix C) the trend in NO_x control from combined-cycle systems has been the use of DLN burner technology in the CTGs, LNBs in the duct burners, and SCR for both. Application of this technology can be accomplished in a cost-effective manner at the Fremont Energy Center, yielding calculated ambient NO_x concentrations that are below 50 percent of the PSD significant impact level (SIL). The proposed emission level of 3.5 ppmvd, corrected to 15 percent O_2 based on a three-hour average, is therefore considered to meet BACT/BAT requirements for NO_x.

4.0. Discussion Of Carbon Monoxide Control Options

CO is a product of incomplete combustion. CO formation is limited by ensuring complete and efficient combustion of the fuel in the combustion turbine and the duct burner. High combustion temperatures, adequate excess air, and good air/fuel mixing during combustion minimize CO emissions. Measures taken to minimize the formation of NO_x during combustion may inhibit complete combustion, which in turn could increase CO emissions. Lowering combustion temperatures through premixed fuel combustion can be counterproductive with regard to CO emissions; however, improved air/fuel mixing inherent in newer combustor designs and control systems limits the impact.

4.1. Review of CO BACT Database

The RBLC and the Ohio BAT database were screened to identify natural gas-fired combined-cycle CTGs for this BACT analysis. Peaking turbines, that normally have higher emission limits, are not included in the BACT analysis.

4.2. Identification of CO Control Options

The following control options were identified for controlling CO emissions from combustion sources:

- Oxidation catalyst
- $SCONO_x$
- GCP

4.3. Technical Feasibility of CO Control Options

$SCONO_x$ is considered technically infeasible. The two technically feasible CO control technologies are GCP and oxidation catalysts.

GCP is considered the baseline control technology for CO emissions. Calculation of emission reduction and costs for GCP are not presented because GCP is an integral part of the CTG and duct burner designs. The addition of an oxidation catalyst can reduce outlet CO concentrations to 1 ppmvd for the CTG operation and 2 ppmvd when the duct burner is operated. Based on a review of the BACT information, 3 ppmvd is the lowest permitted or proposed limit for CO. Although an oxidation catalyst reduces CO, it also enhances the conversion of SO_2 from the natural gas to SO_3. This increases the amount of sulfuric acid mist as the SO_3 reacts with water from the combustion gases. Likewise, the condensable particulate emissions increase because the SO_3 forms ammonium sulfate and bisulfate by reactions with the ammonia used in the SCR catalyst system for NO_X reduction.

4.4. Effectiveness of Technically Feasible CO Control Options

Most identified units are comparable in size to the proposed units. Many of the RBLC listed facilities utilize GCP, with some achieving levels comparable to those of facilities employing an oxidation catalyst.

4.5. Economic Evaluation of CO Control Options

Capital costs associated with oxidation catalysts were estimated using vendor quotations for similar projects. Capital costs and annualized costs were developed using the procedures presented in Ohio EPA's Guidance for Estimating Capital and Annual Costs of Air Pollution Control Systems (presented in Engineering Guide 46). The cost-effectiveness of the CO control system was calculated by dividing the total annual cost by the annual tons of pollutant removed. The $SCONO_x$ and oxidation catalyst systems were both assumed to be able to achieve a CO control efficiency of 80 percent during operating periods. Based on annualized cost, the oxidation catalyst system has a cost-effectiveness of $1,299/ton of CO removed. The cost-effectiveness of the $SCONO_x$ system (based on 1,299 tons removed) is $4,584/ton of CO removed.

4.6. Energy and Environmental Considerations

Application of either $SCONO_x$ or an oxidation catalyst system will produce an impact on the Project's energy efficiency. Installation of either system will increase the pressure drop experienced in the turbine exhaust flow. Additional fuel must then be consumed to offset this lost power. A 0.2 percent performance loss has been estimated for this Project. The use of a CO oxidation catalyst system will produce an increase in emissions of H_2SO_4 mist and PM. The system will also produce a waste catalyst that will require solid waste disposal. Because no significant CO impacts are expected to result after application of GCP, there would be no significant environmental benefit to the purchase and operation of a $SCONO_x$ or oxidation catalyst system.

4.7. Determination of BACT for CO

The use of GCP for this Project yields calculated ambient CO concentrations that are below the PSD significant impact levels. While CO emissions can be further reduced through the use of a $SCONO_x$ (unproven), the costs are high and no significant environmental benefit would be obtained. Therefore, CO emission rates based on application of GCP and or CO oxidation catalyst system (0.046 lb/MMBtu at 75 to 100 percent load and 0.11 lb/MMBtu at loads less than 75 percent and power augmentation) are BACT for CO for the Project.

5.0. Discussion of PM_{10} Control Options

Combustion sources present four potential sources of PM_{10} emissions:

- mineral matter found in the fuel;
- solids or dust in the ambient air used for combustion;
- unburned carbon or soot formed by the incomplete combustion of the fuel; and
- condensable/secondary particulates formed as salts in the exhaust stream.

Natural gas contains no mineral matter, and therefore, the first potential source of PM_{10} emissions is not present during natural gas combustion. Furthermore, all combustion air passes through cartridge fabric filters to remove airborne PM to protect the rotating equipment in the combustion turbine, thus minimizing the second potential source of PM_{10} emissions. Therefore, the potential sources of PM_{10} are from unburned carbon and condensable particulates in the exhausts of the combustion turbines and duct burners.

Many PM emission limits include only the filterable PM_{10} that is measurable using USEPA Method 5. Results of a Method 5 test are commonly referred to as "front-half." When condensable PM must also be measured, a combination USEPA Method 5/202 must be employed. Method 202 collects the "back-half" or condensable, portion of the PM emission. PM_{10} emission estimates for the Project's CTGs and duct burners include both front-half and back-half.

Emissions of PM_{10} from mechanical draft cooling towers result from solid material, both dissolved and suspended, in the cooling water. Particulates are emitted when small droplets of cooling water, called drift, escape from the tower and evaporate. The dissolved and suspended materials in the drift become airborne particles when the water around them evaporates. PM_{10} emissions from mechanical draft cooling towers are usually estimated by using the design drift rate, the solids concentration in the cooling water in the basin of the tower, and the circulating water volume. PM_{10} emissions are reduced by using high efficiency mist eliminators and by controlling the dissolved solids level in the recirculating cooling water through periodic blowdowns.

5.1. Review of PM_{10} BACT Database

The RBLC and Ohio BAT databases were screened to identify combined-cycle CTGs for this BACT analysis. All combined-cycle systems were reported to use combustion controls to achieve BACT for the turbines/duct burners. Drift eliminators were used for BACT for all the mechanical draft cooling towers found.

5.2. Identification of PM_{10} Control Options

The following control options were identified for controlling PM_{10} emissions from combustion sources:

- Add-on control technologies such as electrostatic precipitators, fabric filters, or scrubbers
- Use of clean fuels such as natural gas
- Combustion controls to minimize the formation of soot

The following control options were identified for controlling PM_{10} emissions from mechanical draft cooling towers:

- Drift eliminators
- Air cooling

5.3. Technical Feasibility of PM_{10} Control Options

5.3.1. Add-on Control Systems for Combustion Systems

No known applications exist where add-on control systems are used for controlling PM_{10} from natural gas-fired boilers or CTGs. Combustion systems employing add-on PM controls are those fired with solid fuels and/or residual oil, which contain relatively high levels of mineral matter. Therefore, add-on controls are not considered to be technically feasible for controlling PM or PM_{10} emissions from CTGs or duct burners firing natural gas.

5.3.2. Combustion Controls

The proposed CTGs will be equipped with state-of-the-art combustion controls to ensure maximum efficiency. As a result, the conversion of fuel carbon to CO_2 will be maximized, and the production of carbonaceous soot particulates minimized. Therefore, CTGs and duct burners firing clean natural gas with state-of-the-art combustors and an emission rate of 0.0091 lb/MMBtu front-half/back-half is BACT/BAT for PM_{10}.

5.3.3. Cooling Tower Drift Eliminator

Emissions of PM_{10} from mechanical draft cooling towers are caused by dissolved solids within the water droplets (drift) that escape the tower. For a given solids concentration (defined by the cooling water source and tower design and operating specifications), particulate emissions from the cooling towers depend on the amount of water that drifts from the tower. The amount of drift from evaporative cooling towers, usually expressed as a percent of circulating water flow, is called total liquid drift. Drift eliminators are installed in the cooling tower cells to reduce total liquid drift. Drift eliminators work by passing the cooling tower exhaust through mesh type media resulting in the inertial separation of the water droplets from the air stream. Solids content varies widely depending upon the cooling water source (in this case, potable water). Drift specifications range from 0.0005 to 0.1 percent of the total liquid flow. Based on the water source, the total particulate emissions from all combined cells of the cooling towers will not exceed 1.5 lb/hr.

5.3.4. Air-Cooled Condensers

Air-cooled heat exchangers are an alternate method of condensing steam from a steam turbine. Air passes through coils with metal fins and condenses the steam. Because air cooling requires no cooling water or cooling tower, the PM emissions produced by liquid drift are eliminated. An air-cooled system requires at least ten times more space than a mechanical draft cooling tower. Air cooling is only used where water is not available, and is therefore considered technically infeasible for the proposed Project. Air-cooled heat exchangers would add significant cost to the Project and be less efficient than mechanical draft cooling towers.

5.4. Determination of BACT for PM_{10}

5.4.1. Combustion Units

As in all existing permitted combined-cycle plants, BACT for the CTGs and duct burners is based on the use of combustion controls to minimize soot formation. Use of these controls yields a PM_{10} BACT limit of 0.0066 lb/MMBtu and 0.015 lb/MMBtu, combined front-half and back-half, for the CTGs and duct burners, respectively. Emissions from these units will be measured using USEPA Method 5/202. The BACT emission limits for the Project's other miscellaneous combustion units are based on the use of combustion controls and limited operating hours. No other technically feasible control options exist, and therefore, cost-effectiveness is not calculated for this option.

5.4.2. Mechanical Draft Cooling Towers

Mechanical draft cooling towers are routinely equipped with drift eliminators to minimize losses. BACT for the Project's cooling towers will consist of control of the solids content in the recirculating cooling water and use of high-efficiency drift eliminators to minimize the drift to 0.0005 percent. This will reduce PM_{10} emission to 1.5 lb/hr for all cells combined.

6.0. Discussion of VOC Control Options

VOC emissions from natural gas-fired combustion sources are the result of incomplete combustion of natural gas and recombination of the products of incomplete combustion. Complete combustion is a function of time, temperature, and turbulence. Once the combustion process begins, adequate time at the required combustion temperature must be provided to complete the combustion process. Turbulence or mixing must also be maintained during combustion to ensure that the fuel has adequate oxygen from the combustion air. Combustion systems with poor control of the air-to-fuel ratio, poor mixing, and/or insufficient time at combustion temperatures will produce higher VOC emissions than those with good controls. The combustion controls proposed for the Project are state-of-the-art and designed to achieve high combustion efficiencies.

6.1. Review of VOC BACT Database

The RBLC and the Ohio BAT database were screened to identify combined-cycle CTGs for this BACT analysis. The review shows only one system has been permitted with an oxidation catalyst system as BACT for VOC control.

6.2. Identification of VOC Control Options

The following control options were identified for controlling VOC emissions from combustion sources:

- Oxidation catalyst
- Thermal oxidation
- $SCONO_x$
- GCP

6.3. Technical Feasibility of VOC Control Options

Of the options listed above, thermal oxidation is considered technically infeasible. This determination is based on the need to handle extremely large volumes of exhaust gas and raise its temperature to above 1,300°F, the typical minimum operating temperature of a thermal oxidizer. Therefore, no additional reduction of VOCs with increased temperature can be accomplished. $SCONO_x$ is considered technically infeasible. The remaining options listed above (oxidation catalyst and GCP) are considered technically feasible.

6.4. Effectiveness of Technically Feasible VOC Control Options

The two technically feasible control options, oxidation catalysts or GCP, are not expected to achieve more than a 50 percent reduction of VOC emissions.

6.5. Economic Evaluation of VOC Control Options

Both systems were assumed to be able to achieve a VOC control efficiency of 50 percent. Based on 120 tons of VOC removed per year, the cost-effectiveness of a $SCONO_x$ system for VOC control is $49,619/ton removed, and the cost-effectiveness of an oxidation catalyst system for VOC control is $18,939/ton removed. Neither of these systems, therefore, can be considered economically feasible.

6.6. Determination of BACT for VOC Control

Combustion controls are considered BACT/BAT for VOC control for the Fremont Energy Center. Based on the review, emission limits of 0.0039 and 0.05 lb/MMBtu are BACT for VOC from the CTGs and the duct burners, respectively.

7.0. Discussion of Sulfur Control Options

Sulfur dioxide emissions from CTGs and duct burners are produced by sulfur in the fuel. Sulfuric acid is also produced when SO_2 is converted to SO_3 in the presence of a catalyst and is then further combined with water (and ammonia) to form H_2SO_4 (ammonium sulfate salts). Although the Project will only use low-sulfur pipeline-quality natural gas, the fuel still contains small quantities of sulfur. During the combustion process, most of the sulfur is converted to SO_2. Fifteen percent of the SO_2 is assumed to be converted to SO_3 and eventually to H_2SO_4 and/or ammonium sulfate salts.

7.1. Review of BACT Database

The RBLC and Ohio BAT were screened to identify combined-cycle CTGs for this BACT analysis. This information yielded only one option for SO_2 control. For all units where SO_2 control was discussed, the only option considered was the combustion of low-sulfur pipeline-quality natural gas. No other controls have been implemented on a gas-fired turbine or boiler. No information was found for H_2SO_4 control.

7.2. Identification of Sulfur Control Options

The control technologies available for controlling SO_2 and H_2SO_4 emissions from combustion turbines and duct burners include the following:

- Flue gas desulfurization

· Combustion of low sulfur fuel

No control technology was identified to abate H_2SO_4 emissions from natural gas combustion.

7.3. Technical Feasibility of Sulfur Control Options

Flue gas desulfurization (FGD) uses an alkali solution such as caustic or lime slurry in a scrubber to remove sulfur compounds from the flue gases of combustion sources. FGD systems are common on coal-fired boilers where the fuel has significant sulfur content. The cost of using FGD for gas-fired units, however, would be prohibitive for the small quantity of SO_2 and/or H_2SO_4 removed. Also, the low concentration of SO_2 and H_2SO_4 in the exhaust gas would hamper effective removal efficiency. Add-on SO_2 and H_2SO_4 control technologies have never been considered BACT for combustion turbines. Use of a low-sulfur fuel, such as natural gas, is generally considered the only feasible option for SO_2 and H_2SO_4 control for combined-cycle projects.

7.4. Determination of BACT for Sulfur

The use of low-sulfur fuel is considered BACT/BAT for SO_2 and H_2SO_4 from the proposed combustion sources. Use of natural gas with a sulfur content of 2 gr/100 scf yields a BACT SO_2 emission rate of 0.0057 lb/MMBtu from the CTGs, duct burners, auxiliary boiler, and gas preheaters. Use of low sulfur diesel fuel with a sulfur content of 0.5 percent yields a BACT SO_2 emission rate of 0.051 lb/MMBtu from the emergency diesel generator and diesel fire water pump.

8.0 Discussion of Control Options for Toxic Air Pollutants

Ohio EPA new source permitting procedures require that BAT be employed for all air pollutants released from the proposed source. Because BACT and BAT are somewhat similar, the BACT determination discussed above will satisfy these BAT requirements. Two additional air pollutants will be emitted from the proposed facility that are not required to undergo a BACT evaluation but do require the application of BAT. These pollutants are formaldehyde and ammonia.

The Ohio EPA BAT database was searched for determinations for formaldehyde and ammonia as they relate to the Project. No determinations were identified for formaldehyde or ammonia emissions produced from natural gas combustion sources operated to generate electricity or steam. Therefore, BAT for this Project is considered to be achieving the formaldehyde and ammonia emission rates specified in the permit. Project emissions of formaldehyde and ammonia will produce ambient air impacts below all applicable threshold levels.

9.0 Site Description/Air Quality Designations

The Fremont Energy installation is located in Air Quality Control Region (AQCR) 124. The area is attainment or attainment/unclassifiable for total suspended particulates, particulate matter less than 10 microns, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds (ozone) and lead.

10 Modeling

Air quality dispersion modeling was conducted to assess the effect of these sources on ambient air quality standards and PSD increments. The U.S. EPA Industrial Source Complex-Short Term (ISCST3, Version 96113) model was used for the refined modeling analysis. The purposed of the refined modeling was to demonstrate that projects impacts were insignificant and that PSD and NAAQS analyses would be unnecessary.

The ISCST3, Version 96113 model was the appropriate model for this analysis, based on the need to model simple to intermediate terrain, the need to incorporate building wake effects, the need to predict both short-term and long-term (annual) average concentrations, and the need to incorporate impacts from multiple and separated emissions units.

The ISCST3, Version 96113 model was run with the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, final plume rise), default wind speed profile categories, default potential temperature gradient, and no pollutant

decay. Building downwash was assessed using either the Huber-Snyder or Schulman-Sire downwash methodology, depending on the stack and nearby building heights.

Building wake effects will influence emissions from stacks with heights less than Good Engineering Practice (GEP). The ISCST3, Version 96113 model requires input of building heights and projected building widths for 36 wind directions. The U.S. EPA Building Profile Input Program (BPIP) was used to determine the direction-specific building dimensions.

The ISCST3, Version 96113 model was run utilizing the National Weather Service meteorological data processed using the U.S. EPA PCRAMMET program. OEPA provided five years of the most recent PCRAMMET processed meteorological data on their bulletin board system. Following OEPA modeling guidance concerning representative meteorological data for various counties, the Toledo surface, Flint upper air (1985-1987, 1990-1991) PCRAMMET data were used in the refined modeling analysis.

10.1. Modeling Results/Increment Analysis

Modeling at 100%, 75% and 60% loads, for natural gas, and using stack parameters based on average as well as extreme ambient temperatures , was performed to determine the worst case impacts for each pollutant. The results are as follows: The maximum predicted annual and 24-hour average PM_{10} concentration of 0.64 ug/m3 and 4.87 ug/m^3, respectively, were below the corresponding significant impact increments of 1 and 5 ug/m^3. Therefore, no additional dispersion modeling analyses for PM_{10} were necessary for PM.

The maximum predicted 1-hour and 8-hour CO concentration of 242 ug/m3 and 87.1 ug/m^3 respectively were below the corresponding significant impact increments of 2000 and 500 ug/m^3. Therefore, no additional dispersion modeling analysis were necessary for CO.

The maximum predicted annual NO_2 concentration of 0.407 ug/m^3 was below the corresponding significant impact increment of 1.0 ug/m^3. Therefore no additional dispersion analysis was necessary for NO_2.

The maximum predicted annual, 24-hour and 3-hour average SO_2 concentrations of 0.08 ug/m3, 2.14 ug/m3 and 9.65 ug/m^3 were below the corresponding significant impart increments of 1.0, 5.0 and 25.0 ug/m^3. Therefore, no additional dispersion modeling analysis was necessary for SO_2.

10.2. Monitoring Requirements

U.S. EPA regulations require a year of ambient air quality data to be obtained as part of the PSD application. An applicant may conduct monitoring on-site, model to demonstrate a "de minimus" impact, or used existing air quality data to fill some of the requirements of a PSD ambient air quality analysis. If monitoring is required, U.S. EPA has set up specific conditions on the acceptability of existing air quality monitors is to ensure the monitor is representative of air quality in the area.

In this instance, Fremont Energy facility has conducted ambient air quality modeling that predicts the ambient air quality impact of the source(s) to be less than the monitoring de minimus concentrations for each of the pollutants. Peak predicted concentrations as described above do not exceed the PSD preconstruction monitoring exemption levels and, therefore, no preconstruction monitoring is required.

State of Ohio Environmental Protection Agency

RE: DRAFT PERMIT TO INSTALL **CERTIFIED MAIL**
SANDUSKY COUNTY

Street Address: Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329 Mailing Address: Lazarus Gov. Center

Application No: 03-13549

DATE: 6/12/2001

Fremont Energy Center, LLC
Mark Chrisos
The Pilot House, 2nd Floor, Lewis Wharf
Boston, MA 02110

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on 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 proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed of final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **$1000** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.
Very truly yours,

Thomas G. Rigo
Field Operations and Permit Section
Division of Air Pollution Control

CC: **USEPA**
Michigan

NWDO
Toledo Metro Coun Gov

Permit To Install

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

DRAFT PERMIT TO INSTALL 03-13549

Application Number:	03-13549
APS Premise Number:	0372030241
Permit Fee:	**To be entered upon final issuance**
Name of Facility:	Fremont Energy Center, LLC
Person to Contact:	Mark Chrisos
Address:	The Pilot House, 2nd Floor, Lewis Wharf Boston, MA 02110

Location of proposed air contaminant source(s) [emissions unit(s)]:
County Road 138
Fremont, Ohio

Description of proposed emissions unit(s):
Installation of two combined cycle turbines & duct burners.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described 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

Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install General Terms and Conditions

1. Monitoring and Related Recordkeeping 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:

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

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. 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:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.10 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., 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.

iv. 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.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06**.**
Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. 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.

4. 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.

5. Severability Clause

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.

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

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, reopened, 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, reopening 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.

7. 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 this Permit To Install.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that 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, the State, and citizens under the Act. All other terms and conditions of this permit

shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. 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:

i. 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.

ii. 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.

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

iv. 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 appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

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

ii. 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.

10. Permit To Operate Application

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete

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

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35 , the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

B. State Only Enforceable Permit To Install General Terms and Conditions

1. Compliance Requirements

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

2. Reporting Requirements Related to Monitoring and Recordkeeping 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 appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., 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.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. 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.

5. Termination of Permit To Install

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may

be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

6. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. 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 the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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.

7. 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.

8. 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).

9. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

10. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

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

C. Permit To Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
NOx	421.9
CO	1248.3
SO2	133.7
PE	213.7
VOC	211.9
Ammonia	15.3
Formaldehyde	194.5
Sulfuric Acid	28.9

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

1. The permit to install for these emissions units (P001 and P002) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model. The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the MAGLC. The following summarizes the results of the modeling for the "worst case" pollutants:

   Pollutant: Formaldehyde
   TLV (ug/m3): 272.69
   Maximum Hourly Emission Rate (lbs/hr): 3.5*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1.16
   MAGLC (ug/m3): 6.49

   Pollutant: Sulfuric Acid
   TLV (ug/m3): 1000
   Maximum Hourly Emission Rate (lbs/hr): 6.6*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.58
   MAGLC (ug/m3): 23.8

   Pollutant: Ammonia
   TLV (ug/m3): 17,500
   Maximum Hourly Emission Rate (lbs/hr): 44.4*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 16.6
   MAGLC (ug/m3): 416.7

   Pollutant: Toluene
   TLV (ug/m3): 188,500
   Maximum Hourly Emission Rate (lbs/hr): 0.7*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 0.242
   MAGLC (ug/m3): 4488

   Pollutant: Xylene
   TLV (ug/m3): 434,000
   Maximum Hourly Emission Rate (lbs/hr): 0.4*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 0.119
   MAGLC (ug/m3): 10333

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

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include 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 compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and

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

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

d. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

e. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

f. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements
B001 - 80 MMBtu/hr natural gas fired auxiliary boiler	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-10(B)
	OAC rule 3745-17-07(A)(1)
	OAC rule 3745-18-06(D)
	40 CFR Part 60, Subpart Dc
	40 CFR Part 52.21
	OAC rules 3745-31-10 through 20

Applicable Emissions Limitations/Control Measures	record keeping requirements, See A.III.3.
See A.I.2.b.	
0.0051 lb particulate emissions (PE)/ MMBtu, 0.41 lb PE/hr 1.8 tons PE/yr	
7.84 lbs carbon monoxide (CO)/hr & 34.3 tons CO/yr	
0.006 lb sulfur dioxide (SO2)/MMBtu, 0.48 SO2/hr & 2.1 tons SO2/yr	
2.72 lbs nitrogen oxides (NOx)/hr & 11.9 tons NOx/year	
0.44 lb volatile organic compounds (VOC)/ hr & 1.9 tons VOC/yr	
visible PE shall not exceed 10 percent opacity, as a six-minute average	
See A.I.2.a. **1.8 tons PE/yr** **34.3 tons CO/yr** **2.1 tons SO2** **11.9 tons NOx/year** **1.9 tons VOC/yr**	
See A.I.2.c.	
See A.I.2.c.	
See A.I.2.c.	

2. Additional Terms and Conditions

2.a Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of natural gas and the use of low NOx burners constitute BACT for this emissions unit. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-05(A)(3) above.

2.b The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-10 through 20, 40 CFR Part 52.21, and 40 CFR Part 60, Subpart Dc.

2.c The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

II. Operational Restrictions

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

III. Monitoring and/or Recordkeeping Requirements

1. 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.

2. The permittee shall maintain documentation on the sulfur content of the fuel used in this emissions unit.

3. On a monthly basis, the permittee shall collect and record the quantity of natural gas combusted, in million cubic feet.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

2. Pursuant to 40 CFR Part 60.7, permittee is hereby advised of the requirement to report the following at the appropriate times for this emissions unit:

   a. construction date (no later than 30 days after such date);
   b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
   c. actual start-up date (within 15 days after such date); and

d. date of performance testing (if required, at least 30 days prior to testing).

This notification shall also include, in accordance with section 60.48c (a)(1), the design heat input capacity and identification of fuels to be combusted in this emissions unit.

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC-Permit Management Unit
Lazarus Government Center
P.O. Box 1049
Columbus, OH 43216-1049

and

Ohio EPA, Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402

V. Testing Requirements

1. Compliance Methods Requirements: Compliance with the emission limitation(s) in section A.I of the terms and conditions of this permit shall be determined in accordance with the following method(s):

   a. Emission Limitation:
   0.0051 lb PE/MMBtu, 0.41 lb PE/hr, 1.8 tons PE/yr

   Applicable Compliance Method:
   The lb/MMBtu emission limitation is based on the manufacturer's emission factor for this emissions unit. Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the lb/MMBtu limitation by the maximum heat input rate of 80.0 MMBtu/hr. If required, the permittee shall demonstrate compliance with this emission limitation through Method 5 of 40 CFR Part 60, Appendix A Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly limit by 8760 hrs/yr and dividing by 2000 lbs/ton.

   b. Emission Limitation:
   7.84 lbs CO/hr, 34.3 tons CO/yr

Applicable Compliance Method:
Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the manufacturer's emission factor (0.098 lb CO/MMBtu) by the maximum heat input rate of 80.0 MMBtu/hr. If required, the permittee shall demonstrate compliance with this emission limitation through Method 10 of 40 CFR Part 60, Appendix A. Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly limit by 8760 hrs/yr and dividing by 2000 lbs/ton.

c. Emission Limitation:
0.006 lb SO2/MMBtu, 0.048 lb SO2/hr, 2.1 tons SO2/yr

Applicable Compliance Method:
Compliance with the lb/MMbtu emission limitation shall be demonstrated by multiplying the AP-42 emission factor (0.6 lb VOC/million cf of natural gas, Section 1.4, 7/98), by the heat content of the natural gas (1 million cf/1000 MMBtu). Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the lb/MMBtu emission limitation by the maximum heat input rate 80.0 MMBtu/hr. If required, the permittee shall demonstrate compliance with this emission limitation through Method 6 of 40 CFR Part 60, Appendix A. Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly limit by 8760 hrs/yr and dividing by 2000 lbs/ton.

d. Emission Limitation:
2.72 lbs NOx/hr,11.9 tons NOx/yr

Applicable Compliance Method:
Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the vendor's emission factor (0.034 lb NOx/MMBtu) by the maximum heat input rate of 80.0 MMBtu/hr. If required, the permittee shall demonstrate compliance with this emission limitation through Method 7 of 40 CFR Part 60, Appendix A. Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly limit by 8760 hrs/yr and dividing by 2000 lbs/ton.

e. Emission Limitation:
0.44 lb VOC/hr, 1.9 tons VOC/yr

Applicable Compliance Method:
Compliance with the lb/hr emission limitation shall be demonstrated by multiplying the AP-42 emission factor (5.5 lbs VOC/million cf of natural gas, Section 1.4, 7/98) by the heat content (1 million cf/1000MMBtu), by the maximum heat input rate of 80.0 MMBtu/hr. If required, the permittee shall demonstrate compliance with this emission limitation through Method 25 of 40 CFR Part 60, Appendix A. Compliance with the annual emission limitation shall be demonstrated by multiplying the hourly limit by 8760 hrs/yr and dividing by 2000 lbs/ton.

f. Emission Limitation:
visible PE shall not exceed 10 percent opacity, as a six-minute average

Applicable Compliance Method:
Compliance with the visible emissions limitation shall be determined by Method 9 of 40 CFR Part 60 Appendix A.

VI. Miscellaneous Requirements

1. This emissions unit, as described in this Permit to Install (PTI), is subject to the applicable provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR Part 60. The requirements of 40 CFR Part 60 are delegated to the Ohio EPA and are federally enforceable.

2. This emissions unit, as described in this PTI, is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the U.S. EPA. The authority to apply and enforce the PSD regulations has been delegated to Ohio EPA.

   In accordance with 40 CFR 124.15, 124.19, and 124.20, the following shall apply:

   a. The effective date of the permit shall be 30 days after the service of notice to any public commentors the final decision to issue, modify or revoke and re-issue the permit, unless the service of notice is by mail, in which case the effective date of the permit shall be 33 days after the service notice; and

   b. If an appeal is made to the Environmental Appeals Board of the U.S. EPA, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

      Appeals will be addressed to:

      United State Environmental Protection Agency
      Environmental Appeals Board
      401 M Street, SW (MC-113do)
      Washington, DC 21460

Emissions Unit ID: B001

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
B001 - 80 MMBtu/hr natural gas fired auxiliary boiler	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
P001 - Westinghouse 501FD (180 MW nominal) combined cycle turbine & duct burner (using SCR and oxidation catalyst)	OAC Rule 3745-31-05 (A)(3)	
	OAC Rule 3745-31-05 (A)(3)	
		OAC Rule 3745-31-05 (A)(3)
		40 CFR 52.21 OAC rules 3745-31-10 through 3745-31-20

	Applicable Emissions Limitations/Control Measures	
OAC Rule 3745-17-07(A)(1)	See A.I.2.b.	1.75 lbs formaldehyde/hr 7.7 tons formaldehyde/yr
40 CFR Part 60, Subpart GG		24.0 lbs ammonia/hr 97.8 tons ammonia/yr
40 CFR Part 60, Subpart Da	Visible Particulate Emissions shall not exceed 10 percent opacity as a six-minute average.	**Start-up and shut-down emissions**
OAC rule 3745-18-06(F)	**Allowable Emissions Rates without duct burners firing (and with duct burners firing)**	9.1 tons NO_x per year 41.4 tons CO per year 2.2 tons VOC per year
OAC Rule 3745-17-11(B)(4)	3.5 ppmvd nitrogen oxides (NO_x) at 15% Oxygen,	See A.I.2.a.
OAC Rule 3745-103	27.6 lbs NO_x/hr (35.9 lbs NO_x/hr)* and	199.1 tons NO_x/yr** 607.7 tons CO/yr**
40 CFR Part 75	199.1 tons NO_x/yr**	105.0 tons VOC/yr** 103.0 tons PE/yr 65.8 tons SO_2/yr
	5.0 ppmvd carbon monoxide (CO) at 15% Oxygen and	14.5 tons H_2SO_4/year
	23.0 lbs CO/hr (139.5 lbs CO/hr)* and	See A.I.2.c.
	607.7 tons CO/yr**	See A.I.2.c.
	3.9 lbs volatile organic compounds (VOC)/hr (30.0 lbs VOC/hr)* and	See A.I.2.c.
	105.0 tons VOC/yr**	See A.I.2.c.
	0.0091 lbs particulate emissions (PE)/MM Btu heat input,	See A.I.2.c.
	13.7 lbs PE/hr (24.7 lbs PE/hr)* and	See A.I.2.d.
	103.0 tons PE/yr	See A.I.2.d
	0.0057 lbs sulfur dioxide (SO_2)/MM Btu heat input,	
	11.9 lbs SO_2/hr (16.1 lbs SO_2/hr)* and	
	65.8 tons SO_2/yr	
	3.3 lbs sulfuric acid (H_2SO_4)/hr	
	14.5 tons H_2SO_4/year	

2. Additional Terms and Conditions

2.a Per the requirements of 40 CFR 52.21, the permittee is required to perform a Best Available Control Technology (BACT) review for NO_x, SO_2, CO, PE/PM_{10}, H_2SO_4, and VOC. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-05(A)(3) above. The following determinations have been made for each pollutant:

PE- Burning natural gas in an efficient combustion turbine. For this permit, it is assumed that all PE emissions are PM_{10}.

NO_x- Use of DLN burners and employment of SCR with a controlled rate of 3.5 ppmvd at 15% Oxygen.

CO- Use of an oxidation catalyst with a controlled rate of 5 ppmvd at 15% Oxygen.

VOC- Use of efficient combustion technology in the operation of the turbine with an indirect benefit from the oxidation catalyst.

SO_2- Burning natural gas in an efficient combustion turbine.

H_2SO_4- Burning natural gas in an efficient combustion turbine.

2.b The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, 40 CFR 52.21, and OAC 3745-31-13 to 20.

2.c The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05(A)(3).

2.d If the permittee is subject to the requirements of 40 CFR Part 75 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.

*During periods of duct firing and power augmentation.

**The annual emission limits above include 1080 hours of start-up and shut-down emissions. It has been determined that there are additional NOx, CO, and VOC emissions associated with start-up and shut-down periods with estimated worst case emissions rates of 16.7 lbs/hr, 76.5 lbs/hr, and 3.9 lbs/hr, respectively.

II. Operational Restrictions

1. As specified in the permittee's PTI application, the maximum heat input rating of this emissions unit is 2812 MM Btu/hr. This value corresponds to a maximum natural gas fuel flow of 2.812

million scf/hr, with a lower heat value of 1000 MMBtu/million scf. The permittee shall operate this emissions unit within the parameters specified above, except for start-up* and shut-down. Start-up and shut-down periods shall be defined as any time the unit is operating at less than 75% load, but under no circumstances shall startup periods exceed 4.0 hours in duration or shut-down periods exceed 1.0 hours in duration.

*Startup for testing purposes shall be defined as the date when emission unit P001 is set in operation for any purpose. Start-up for the daily operation of the turbine is described in condition A.II.1.

2. The permittee shall burn only natural gas in this emissions unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100scf.

3. The permittee shall be limited to 1080 hours of operation per year for start-ups and shut-downs.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for each emissions unit:

   a. Number of start-ups,
   b Duration of each start-up,
   c. Number of shut-downs,
   d Duration of each shut-down,
   e. The start-up and shut-down emissions for NO_x, CO, and VOC in tons per month,
   f. The annual, year to date emissions of NOx, CO, and VOC, in tons.

2. The permittee shall maintain monthly records of the following information for this emissions unit:

   a. the natural gas usage rate for each month (in standard cubic feet).
   b. the hours of operation;
   c. The monthly emission rate* for PE, NOx, SO2, CO, VOC, and H_2SO_4, in tons; and
   d. The annual, year to date emissions of PE, NOx, SO2, CO, VOC, and H_2SO_4, in tons.

   * The permittee shall use continuous emissions monitoring (CEM) data to determine emissions for those pollutants where a CEM is installed. During the periods where a CEM is not operational or for pollutants where a CEM is not installed, the permittee shall use the following emission factors available for each respective pollutant, in conjunction with the hours of start-ups and shut-downs recorded above to determine monthly emissions for start-ups: 129 lbs NOx/hr, 472 lbs CO/hr, and 43.5 lbs VOC/hr; for shutdowns: 78 lbs NOx/hr, 560 lbs CO/hr, and 78 lbs VOC/hr.

3. 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.

4. The permittee shall operate and maintain equipment to continuously monitor* and record NO_x and CO from this emissions unit in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 or as approved by the Ohio EPA, Central Office.

   The permittee shall maintain records of all data obtained by the continuous NO_x and CO monitoring systems including, but not limited to, parts per million NO_x on an instantaneous (one-minute) basis, emissions of NO_x and CO in the units established in this permit (with a three hour block averaging period), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

5. The permittee shall operate and maintain equipment to continuously monitor and record the O_2 from this emissions unit in percent O_2. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 or as approved by the Ohio EPA, Central Office. The permittee may install a CO_2 monitor in lieu of an O_2 monitor with prior approval from the Ohio EPA, Central Office.

   The permittee shall maintain records of all data obtained by the continuous O_2 monitoring system including, but not limited to percent O_2 on an instantaneous (one-minute) basis, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

   * The installation and operation of systems to continuously monitor and record emissions of NO_x may be performed in lieu of monitoring the nitrogen content of the fuels being fired in the turbine, as required by 40 CFR 60.334(b).

6. The information management system for this emissions unit shall be capable of monitoring and recording the fuel flow (million cu ft), steam flow, and hours of operation with duct burner firing, and hours of operation without duct burner firing.

7. The permittee shall operate and maintain equipment to continuously monitor and record fuel flow to this emissions unit.

8. The permittee shall maintain documentation on the sulfur contents and heating values of the fuels received. ASTM D 2880-71 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 shall be used for the sulfur content of gaseous fuels. The permittee shall determine the heat value of the fuels using ASTM method D240. The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Ohio EPA. The newest or most recent revisions to the applicable test method shall be used for these analyses.

Alternative, equivalent methods and frequencies of sampling schedules may be used if they comply with the requirements specified in 40 CFR Part 60.13, and upon written approval by the Ohio EPA.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas with a sulfur content of no more than 2 grains per 100 scf was burned in this emissions unit. These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting the date, commencement and completion time, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO_x or CO values in excess of the limits specified in the terms and conditions of this permit.

   The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northwest District Office documenting any continuous NO_x, CO, or O_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

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

   Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the Ohio EPA, Northwest District Office within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

3. In lieu of the excess emissions reports required under 40 CFR Part 60.334, the permittee shall

submit excess and emissions reports for this emissions unit in accordance with this permit.

4. Unless otherwise specified, the above reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).

5. Pursuant to 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency documenting all instances of continuous O_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall be included in the quarterly report. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

6. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

7. The permittee shall submit deviation (excursion) reports that identify each time when this emissions unit was not in compliance with the start-up/shut-down restrictions specified under under section II. above. These reports are due by the date described in Part I - General Terms and Conditions of this permit.

8. This emissions unit is subject to the applicable provisions of Subpart Da and GG of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

   Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

   a. construction date (no later than 30 days after such date);
   b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
   c. actual start-up date (within 15 days after such date); and
   d. date of performance testing (if required, at least 30 days prior to testing).

   Reports are to be sent to:

   Ohio Environmental Protection Agency
   DAPC - Permit Management Unit
   P. O. Box 163669

Columbus, Ohio 43216-3669

and

Ohio Environmental Protection Agency
Northwest District Office
Division of Air Pollution Control
347 North Dunbridge Road
Bowling Green, Ohio 43402

V. Testing Requirements

1. 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 within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit.

   b. The emission testing* shall be conducted to demonstrate compliance with the NO_x and CO, outlet concentrations, the lbs/MMBtu limitations for SO_2, PE, and the mass emissions limitations for NO_x, CO, VOC, SO_2, PE, ammonia**,** and formaldehyde. Testing shall be conducted when firing the turbine only (without power augmentation) and when firing the turbine (with power augmentation) and the duct burner simultaneously.

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

NOX	Method 7 of 40 CFR Part 60, Appendix A
PE	Method 5 of 40 CFR Part 60, Appendix A
Formaldehyde	SW-846 Method 0011
VOC	Method 25 of 40 CFR Part 60, Appendix A
SO_2	Method 6 of 40 CFR Part 60, Appendix A
CO	Method 10 of 40 CFR Part 60, Appendix A
Ammonia	CTM-027

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

   d. The stack on this emissions unit shall be constructed such that the height and port locations meet the minimum requirements necessary to perform Methods 1-4 of 40 CFR

Part 60, Appendix A.

e. The testing shall be performed at peak load (as defined by 40 CFR Part 60, Subpart GG), unless otherwise specified or approved by the Ohio EPA, NWDO.

f. Not later than 45 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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 tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA, NWDO refusal to accept the results of the emission tests.

g. Personnel from the Ohio EPA, NWDO shall be permitted to witness the tests, 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 tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, NWDO.

* In lieu of the test methods and procedures required under 40 CFR Part 60.335, the permittee shall follow the testing requirements in accordance with this permit.

2. Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous NO_x and CO monitoring systems pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6*. Personnel from the Ohio EPA, Northwest District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, copies of all the test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Ohio EPA, Northwest District Office and the Ohio EPA, Central Office. Certification of the continuous NO_x and CO monitoring systems shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6*.

3. Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous O_2 monitoring systems pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 3. Personnel from the

Ohio EPA, Northwest District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Ohio EPA, Northwest District Office and the Ohio EPA, Central Office. Certification of the continuous O_2 monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 3.

* The permittee may use 40 CFR Part 60, Appendix B, Performance Specification 2 and Performance Specification 4 in conjunction with a fuel flow monitor as described in 40 CFR Part 75 to meet these requirements if approved by the Ohio EPA, Central Office.

4. Compliance with the allowable emission limitations in this permit shall be determined according to the following methods:

a. Emission Limitation
3.5 ppmvd at 15% Oxygen, 27.6 lbs NOx/hr, (35.9 lbs NOx/hr), 199.1 tons NO_x/yr

Applicable Compliance Method
Compliance with the allowable outlet concentration and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1 and CEM requirement as described in conditions A.III.5. and A.V.2. Compliance with the annual emission limitation shall be determined by the record keeping required in condition A.III.

b. Emission Limitation
0.0091 lb PE/MMBtu heat input, 13.7 lbs PE/hr, (24.7 lbs PE/hr),103.0 tons PE/yr

Applicable Compliance Method
Compliance with the allowable lb/MMBtu heat input emission limitation and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

c. Emission Limitation
0.0057 lb SO_2/.MMBtu heat input, 11.9 lbs SO_2/hr, (16.1 lbs SO_2/hr), 65.8 tons SO_2/yr

Applicable Compliance Method
Compliance with the allowable lb/MMBtu heat input emission limitation and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

d. Emission Limitation
3.9 lbs VOC/hr, (30.0 lbs VOC/hr),105.0 tons VOC/yr

Applicable Compliance Method
Compliance with the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

e. Emission Limitation
5.0 ppmvd CO at 15% Oxygen, 23.0 lbs CO/hr, 76.5 lbs CO/hr, (139.5 lbs CO/hr), 607.7 tons CO/yr

Applicable Compliance Method
Compliance with the allowable outlet concentrations and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1 and CEM requirement as described in conditions A.III. and A.V.2. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

f. Emission Limitation
Visible particulate emissions shall not exceed 10 percent opacity as a six-minute average.

Applicable Compliance Method
Compliance with the visible emissions limitations established by this permit shall be determined by Method 9, 40 CFR Part 60 Appendix A.

g. Emission Limitation
3.3 lbs H_2SO_4/hr, 14.5 tons H_2SO_4/year

Applicable Compliance Method
Compliance with the allowable lbs/hr emission limitations and the annual emission limitations shall be determined by the record keeping required in condition A.III.

h. Emission Limitation
1.75 lbs formaldehyde/hr, 7.7 tons formaldehyde/yr

Applicable Compliance Method
Compliance with the allowable lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

i. Emission Limitation
24.0 lbs ammonia/hr, 97.8 tons ammonia/yr

Applicable Compliance Method
Compliance with the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

VI. Miscellaneous Requirements

1. Prior to the installation of the continuous NO_x and CO monitoring systems, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 6 (or as described in condition A.V.1.) for approval by the Ohio EPA, Central Office.

   Prior to the installation of the continuous O_2 monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 3 for approval by the Ohio EPA, Central Office.

2. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous NO_x, CO, and O_2 monitoring systems designed to ensure continuous valid and representative readings of NO_x, CO, and O_2 emissions in the units established in this permit. The plan shall follow the requirements of 40 CFR Part 60 Appendix F or as approved by the Ohio EPA, Central office. The quality assurance/quality control plan and a logbook dedicated to the continuous NO_x, CO, and O_2 monitoring systems must be kept on site and available for inspection during regular office hours.

3. This emissions unit, as described in this Permit to Install (PTI), is subject to the applicable provisions of the NSPS, as promulgated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR Part 60. The requirements of 40 CFR Part 60 are delegated to the Ohio EPA and are federally enforceable.

4. This emissions unit as described in this PTI is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the U. S. EPA. The authority to apply and enforce the PSD regulations has been delegated to the Ohio EPA.

   In accordance with 40 CFR 124.15, 124.19 and 124.20, the following shall apply:

   a. The effective date of the permit shall be 30 days after the service of notice to any public commentors. The final decision to issue, modify or revoke and re-issue the permit, unless the service of notice is by mail, in which case the effective date of the permit shall be 33 days after the service notice; and

b. if an appeal is made to the Environmental Appeals Board of the U.S. EPA, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

Appeals will be addressed to:

United States Environmental Protection Agency
Environmental Appeals Board
401 M Street, SW (MC-113do)
Washington, D.C. 21460

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P001- Westinghouse 501FD (180 MW nominal) combined cycle turbine & duct burner	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Emissions Unit ID: P001

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
P002 - Westinghouse 501FD (180 MW nominal) combined cycle turbine & duct burner (using SCR and oxidation catalyst)	OAC Rule 3745-31-05 (A)(3)	
	OAC Rule 3745-31-05 (A)(3)	
		OAC Rule 3745-31-05 (A)(3)
		40 CFR 52.21 OAC rules 3745-31-10 through 3745-31-20

	Applicable Emissions Limitations/Control Measures	
OAC Rule 3745-17-07(A)(1)	See A.I.2.b.	1.75 lbs formaldehyde/hr 7.7 tons formaldehyde/yr
40 CFR Part 60, Subpart GG	Visible Particulate Emissions shall not exceed 10 percent opacity as a six-minute average.	24.0 lbs ammonia/hr 97.8 tons ammonia/yr
40 CFR Part 60, Subpart Da		**Start-up and shut-down emissions**
OAC rule 3745-18-06(F)	**Allowable Emissions Rates without duct burners firing (and with duct burners firing)**	9.1 tons NO_x per year 41.4 tons CO per year 2.2 tons VOC per year
OAC Rule 3745-17-11(B)(4)	3.5 ppmvd nitrogen oxides (NO_x) at 15% Oxygen,	See A.I.2.a.
OAC Rule 3745-103	27.6 lbs NO_x/hr (35.9 lbs NO_x/hr)* and	199.1 tons NO_x/yr** 607.7 tons CO/yr** 105.0 tons VOC/yr**
40 CFR Part 75	199.1 tons NO_x/yr**	103.0 tons PE/yr 65.8 tons SO_2/yr
	5.0 ppmvd carbon monoxide (CO) at 15% Oxygen and	14.5 tons H_2SO_4/year
	23.0 lbs CO/hr (139.5 lbs CO/hr)* and	See A.I.2.c.
	607.7 tons CO/yr**	See A.I.2.c.
	3.9 lbs volatile organic compounds (VOC)/hr (30.0 lbs VOC/hr)* and	See A.I.2.c.
	105.0 tons VOC/yr**	See A.I.2.c.
	0.0091 lbs particulate emissions (PE)/MM Btu heat input,	See A.I.2.c.
	13.7 lbs PE/hr (24.7 lbs PE/hr)* and	See A.I.2.d.
	103.0 tons PE/yr	See A.I.2.d
	0.0057 lbs sulfur dioxide (SO_2)/MM Btu heat input,	
	11.9 lbs SO_2/hr (16.1 lbs SO_2/hr)* and	
	65.8 tons SO_2/yr	
	3.3 lbs sulfuric acid (H_2SO_4)/hr	
	14.5 tons H_2SO_4/year	

2. Additional Terms and Conditions

2.a Per the requirements of 40 CFR 52.21, the permittee is required to perform a Best Available Control Technology (BACT) review for NO_x, SO_2, CO, PE/PM_{10}, H_2SO_4, and VOC. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-05(A)(3) above. The following determinations have been made for each pollutant:

PE- Burning natural gas in an efficient combustion turbine. For this permit, it is assumed that all PE emissions are PM_{10}.

NO_x- Use of DLN burners and employment of SCR with a controlled rate of 3.5 ppmvd at 15% Oxygen.

CO- Use of an oxidation catalyst with a controlled rate of 5 ppmvd at 15% Oxygen.

VOC- Use of efficient combustion technology in the operation of the turbine with an indirect benefit from the oxidation catalyst.

SO_2- Burning natural gas in an efficient combustion turbine.

H_2SO_4- Burning natural gas in an efficient combustion turbine.

2.b The requirements of this rule also include compliance with the requirements of 40 CFR 60 Subpart GG, 40 CFR 52.21, and OAC 3745-31-13 to 20.

2.c The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05(A)(3).

2.d If the permittee is subject to the requirements of 40 CFR Part 75 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.

*During periods of duct firing and power augmentation.

**The annual emission limits above include 1080 hours of start-up and shut-down emissions. It has been determined that there are additional NOx, CO, and VOC emissions associated with start-up and shut-down periods with estimated worst case emissions rates of 16.7 lbs/hr, 76.5 lbs/hr, and 3.9 lbs/hr, respectively.

II. Operational Restrictions

1. As specified in the permittee's PTI application, the maximum heat input rating of this emissions unit is 2812 MM Btu/hr. This value corresponds to a maximum natural gas fuel flow of 2.812

million scf/hr, with a lower heat value of 1000 MMBtu/million scf. The permittee shall operate this emissions unit within the parameters specified above, except for start-up* and shut-down. Start-up and shut-down periods shall be defined as any time the unit is operating at less than 75% load, but under no circumstances shall startup periods exceed 4.0 hours in duration or shut-down periods exceed 1.0 hours in duration.

*Startup for testing purposes shall be defined as the date when emission unit P001 is set in operation for any purpose. Start-up for the daily operation of the turbine is described in condition A.II.1.

2. The permittee shall burn only natural gas in this emissions unit. The maximum sulfur content of the natural gas shall not exceed 2 grains per 100scf.

3. The permittee shall be limited to 1080 hours of operation per year for start-ups and shut-downs.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for each emissions unit:

   a. Number of start-ups,
   b Duration of each start-up,
   c. Number of shut-downs,
   d Duration of each shut-down,
   e. The start-up and shut-down emissions for NO_x, CO, and VOC in tons per month,
   f. The annual, year to date emissions of NOx, CO, and VOC, in tons.

2. The permittee shall maintain monthly records of the following information for this emissions unit:

   a. the natural gas usage rate for each month (in standard cubic feet).
   b. the hours of operation;
   c. The monthly emission rate* for PE, NOx, SO2, CO, VOC, and H_2SO_4, in tons; and
   d. The annual, year to date emissions of PE, NOx, SO2, CO, VOC, and H_2SO_4, in tons.

   * The permittee shall use continuous emissions monitoring (CEM) data to determine emissions for those pollutants where a CEM is installed. During the periods where a CEM is not operational or for pollutants where a CEM is not installed, the permittee shall use the following emission factors available for each respective pollutant, in conjunction with the hours of start-ups and shut-downs recorded above to determine monthly emissions for start-ups: 129 lbs NOx/hr, 472 lbs CO/hr, and 43.5 lbs VOC/hr; for shutdowns: 78 lbs NOx/hr, 560 lbs CO/hr, and 78 lbs VOC/hr.

3. 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.

4. The permittee shall operate and maintain equipment to continuously monitor* and record NO_x and CO from this emissions unit in the units established in this permit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 or as approved by the Ohio EPA, Central Office.

   The permittee shall maintain records of all data obtained by the continuous NO_x and CO monitoring systems including, but not limited to, parts per million NO_x on an instantaneous (one-minute) basis, emissions of NO_x and CO in the units established in this permit (with a three hour block averaging period), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

5. The permittee shall operate and maintain equipment to continuously monitor and record the O_2 from this emissions unit in percent O_2. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 or as approved by the Ohio EPA, Central Office. The permittee may install a CO_2 monitor in lieu of an O_2 monitor with prior approval from the Ohio EPA, Central Office.

   The permittee shall maintain records of all data obtained by the continuous O_2 monitoring system including, but not limited to percent O_2 on an instantaneous (one-minute) basis, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

   * The installation and operation of systems to continuously monitor and record emissions of NO_x may be performed in lieu of monitoring the nitrogen content of the fuels being fired in the turbine, as required by 40 CFR 60.334(b).

6. The information management system for this emissions unit shall be capable of monitoring and recording the fuel flow (million cu ft), steam flow, and hours of operation with duct burner firing, and hours of operation without duct burner firing.

7. The permittee shall operate and maintain equipment to continuously monitor and record fuel flow to this emissions unit.

8. The permittee shall maintain documentation on the sulfur contents and heating values of the fuels received. ASTM D 2880-71 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 shall be used for the sulfur content of gaseous fuels. The permittee shall determine the heat value of the fuels using ASTM method D240. The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Ohio EPA. The newest or most recent revisions to the applicable test method shall be used for these analyses.

Alternative, equivalent methods and frequencies of sampling schedules may be used if they comply with the requirements specified in 40 CFR Part 60.13, and upon written approval by the Ohio EPA.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas with a sulfur content of no more than 2 grains per 100 scf was burned in this emissions unit. These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting the date, commencement and completion time, duration, magnitude, reason (if known), and corrective actions taken (if any), of all instances of NO_x or CO values in excess of the limits specified in the terms and conditions of this permit.

   The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northwest District Office documenting any continuous NO_x, CO, or O_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

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

   Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the Ohio EPA, Northwest District Office within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

3. In lieu of the excess emissions reports required under 40 CFR Part 60.334, the permittee shall

submit excess and emissions reports for this emissions unit in accordance with this permit.

4. Unless otherwise specified, the above reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).

5. Pursuant to 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency documenting all instances of continuous O_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall be included in the quarterly report. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

6. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

7. The permittee shall submit deviation (excursion) reports that identify each time when this emissions unit was not in compliance with the start-up/shut-down restrictions specified under section II. above. These reports are due by the date described in Part I - General Terms and Conditions of this permit.

8. This emissions unit is subject to the applicable provisions of Subpart Da and GG of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

   Pursuant to 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:

   a. construction date (no later than 30 days after such date);
   b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
   c. actual start-up date (within 15 days after such date); and
   d. date of performance testing (if required, at least 30 days prior to testing).

   Reports are to be sent to:

   Ohio Environmental Protection Agency
   DAPC - Permit Management Unit
   P. O. Box 163669

Columbus, Ohio 43216-3669

and

Ohio Environmental Protection Agency
Northwest District Office
Division of Air Pollution Control
347 North Dunbridge Road
Bowling Green, Ohio 43402

V. Testing Requirements

1. 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 within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit.

   b. The emission testing* shall be conducted to demonstrate compliance with the NO_x and CO, outlet concentrations, the lbs/MMBtu limitations for SO_2, PE, and the mass emissions limitations for NO_x, CO, VOC, SO_2, PE, ammonia**,** and formaldehyde. Testing shall be conducted when firing the turbine only (without power augmentation) and when firing the turbine (with power augmentation) and the duct burner simultaneously.

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

NOX	Method 7 of 40 CFR Part 60, Appendix A
PE	Method 5 of 40 CFR Part 60, Appendix A
Formaldehyde	SW-846 Method 0011
VOC	Method 25 of 40 CFR Part 60, Appendix A
SO_2	Method 6 of 40 CFR Part 60, Appendix A
CO	Method 10 of 40 CFR Part 60, Appendix A
Ammonia	CTM-027

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

   d. The stack on this emissions unit shall be constructed such that the height and port locations meet the minimum requirements necessary to perform Methods 1-4 of 40 CFR

Part 60, Appendix A.

e. The testing shall be performed at peak load (as defined by 40 CFR Part 60, Subpart GG), unless otherwise specified or approved by the Ohio EPA, NWDO.

f. Not later than 45 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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 tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA, NWDO refusal to accept the results of the emission tests.

g. Personnel from the Ohio EPA, NWDO shall be permitted to witness the tests, 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 tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, NWDO.

* In lieu of the test methods and procedures required under 40 CFR Part 60.335, the permittee shall follow the testing requirements in accordance with this permit.

2. Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous NO_x and CO monitoring systems pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6*. Personnel from the Ohio EPA, Northwest District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, copies of all the test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Ohio EPA, Northwest District Office and the Ohio EPA, Central Office. Certification of the continuous NO_x and CO monitoring systems shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6*.

3. Within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of such emissions unit, the permittee shall conduct certification tests of the continuous O_2 monitoring systems pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 3. Personnel from the

Ohio EPA, Northwest District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted within 30 days after the test is completed. Copies of the test results shall be sent to the Ohio EPA, Northwest District Office and the Ohio EPA, Central Office. Certification of the continuous O_2 monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 3.

* The permittee may use 40 CFR Part 60, Appendix B, Performance Specification 2 and Performance Specification 4 in conjunction with a fuel flow monitor as described in 40 CFR Part 75 to meet these requirements if approved by the Ohio EPA, Central Office.

4. Compliance with the allowable emission limitations in this permit shall be determined according to the following methods:

a. Emission Limitation
3.5 ppmvd at 15% Oxygen, 27.6 lbs NOx/hr, (35.9 lbs NOx/hr), 199.1 tons NO_x/yr

Applicable Compliance Method
Compliance with the allowable outlet concentration and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1 and CEM requirement as described in conditions A.III.5. and A.V.2. Compliance with the annual emission limitation shall be determined by the record keeping required in condition A.III.

b. Emission Limitation
0.0091 lb PE/MMBtu heat input, 13.7 lbs PE/hr, (24.7 lbs PE/hr),103.0 tons PE/yr

Applicable Compliance Method
Compliance with the allowable lb/MMBtu heat input emission limitation and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

c. Emission Limitation
0.0057 lb SO_2/.MMBtu heat input, 11.9 lbs SO_2/hr, (16.1 lbs SO_2/hr), 65.8 tons SO_2/yr

Applicable Compliance Method
Compliance with the allowable lb/MMBtu heat input emission limitation and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in

condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

d. Emission Limitation
3.9 lbs VOC/hr, (30.0 lbs VOC/hr),105.0 tons VOC/yr

Applicable Compliance Method
Compliance with the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

e. Emission Limitation
5.0 ppmvd CO at 15% Oxygen, 23.0 lbs CO/hr, 76.5 lbs CO/hr, (139.5 lbs CO/hr), 607.7 tons CO/yr

Applicable Compliance Method
Compliance with the allowable outlet concentrations and the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1 and CEM requirement as described in conditions A.III. and A.V.2. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

f. Emission Limitation
Visible particulate emissions shall not exceed 10 percent opacity as a six-minute average.

Applicable Compliance Method
Compliance with the visible emissions limitations established by this permit shall be determined by Method 9, 40 CFR Part 60 Appendix A.

g. Emission Limitation
3.3 lbs H_2SO_4/hr, 14.5 tons H_2SO_4/year

Applicable Compliance Method
Compliance with the allowable lbs/hr emission limitations and the annual emission limitations shall be determined by the record keeping required in condition A.III.

h. Emission Limitation
1.75 lbs formaldehyde/hr, 7.7 tons formaldehyde/yr

Applicable Compliance Method
Compliance with the allowable lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

i. Emission Limitation

24.0 lbs ammonia/hr, 97.8 tons ammonia/yr

Applicable Compliance Method
Compliance with the lbs/hr emission limitations shall be demonstrated by the performance testing as described in condition A.V.1. Compliance with the annual emission limitations shall be determined by the record keeping required in condition A.III.

VI. Miscellaneous Requirements

1. Prior to the installation of the continuous NO_x and CO monitoring systems, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 6 (or as described in condition A.V.1.) for approval by the Ohio EPA, Central Office.

   Prior to the installation of the continuous O_2 monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 3 for approval by the Ohio EPA, Central Office.

2. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous NO_x, CO, and O_2 monitoring systems designed to ensure continuous valid and representative readings of NO_x, CO, and O_2 emissions in the units established in this permit. The plan shall follow the requirements of 40 CFR Part 60 Appendix F or as approved by the Ohio EPA, Central office. The quality assurance/quality control plan and a logbook dedicated to the continuous NO_x, CO, and O_2 monitoring systems must be kept on site and available for inspection during regular office hours.

3. This emissions unit, as described in this Permit to Install (PTI), is subject to the applicable provisions of the NSPS, as promulgated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR Part 60. The requirements of 40 CFR Part 60 are delegated to the Ohio EPA and are federally enforceable.

4. This emissions unit as described in this PTI is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the U. S. EPA. The authority to apply and enforce the PSD regulations has been delegated to the Ohio EPA.

   In accordance with 40 CFR 124.15, 124.19 and 124.20, the following shall apply:

   a. The effective date of the permit shall be 30 days after the service of notice to any public commentors. The final decision to issue, modify or revoke and re-issue the permit, unless the service of notice is by mail, in which case the effective date of the permit shall be 33

days after the service notice; and

b. if an appeal is made to the Environmental Appeals Board of the U.S. EPA, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

Appeals will be addressed to:

United States Environmental Protection Agency
Environmental Appeals Board
401 M Street, SW (MC-113do)
Washington, D.C. 21460

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P002 - Westinghouse 501FD (180 MW nominal) combined cycle turbine & duct burner	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P003 - cooling tower	40 CFR 52.21 OAC rules 3745-31-10 through 3745-31-20	See A.I.2.a.
	OAC rule 3745-31-05 (A)(3)	See A.I.2.b. 1.5 lbs PE/hr & 6.6 tons PE/yr
	OAC rule 3745-17-11 (B)(4)	See A.I.2.c.
	OAC rule 3745-17-07 (A)**(1)**	visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

2.a Per the requirements of 40 CFR 52.21, the permittee is required to perform a Best Available Control Technology (BACT) review for PE/PM_{10}. The implementation of high efficiency drift eliminators constitute BACT for this emissions unit.

2.b The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through 20, OAC rule 3745-17-07 (A)(1), and 40 CFR Part 52.21.

2.c The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05(A)(3).

Emissions Unit ID: P003

II. Operational Restrictions

1. The permittee shall maintain an average total dissolved solids content of 2,500 ppm or less in this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform the following monitoring requirements for emissions unit P001 on a monthly basis:

   a. test and record the total dissolved solids content;

   b. determine the average dissolved solids content based on a rolling 12 month average.

IV. Reporting Requirements

1. The permittee shall submit deviation reports in accordance with the general terms and conditions of this permit that identify any exceedances of the average total dissolved solids content.

V. Testing Requirements

1. Compliance with the allowable emission limitations in this permit shall be determined according to the following methods:

   a. Emission Limitation
   1.5 lbs PE/hr & 6.6 tons PE/yr

   Applicable Compliance Method
   Compliance with the lbs/hr emission limitation shall be demonstrated by applying the maximum drift loss factor 0.0005 percent to the maximum average total dissolved solids content of 2,500 ppm for the cooling water. If required, the permittee shall submit a testing proposal which will demonstrate that the maximum drift loss does not exceed 0.0005 percent. Compliance with the annual emission limitation shall be demonstrated by the multiplying the hourly emission rate by 8760 hours and dividing by 2000 lbs/ton.

   b. Emission Limitation
   Visible particulate emissions shall not exceed 20 percent opacity as a six-minute average, except as provided by rule

   Applicable Compliance Method
   Compliance with the visible emissions limitations established by this permit shall be determined by OAC rule 3745-17-03(B)(10).

VI. Miscellaneous Requirements

1. This emissions unit as described in this Permit to Install (PTI) is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the United States Environmental Protection Agency (U. S. EPA.). The authority to apply and enforce the PSD regulations has been delegated to the Ohio EPA.

   In accordance with 40 CFR 124.15, 124.19 and 124.20, the following shall apply:

   a. The effective date of the permit shall be 30 days after the service of notice to any public commentors. The final decision to issue, modify or revoke and re-issue the permit, unless the service of notice is by mail, in which case the effective date of the permit shall be 33 days after the service notice; and

   b. if an appeal is made to the Environmental Appeals Board of the U.S. EPA, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

   Appeals will be addressed to:

   United States Environmental Protection Agency
   Environmental Appeals Board
   401 M Street, SW (MC-113do)
   Washington, D.C. 21460

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P003 - cooling tower		None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None