



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL MODIFICATION
ASHTABULA COUNTY**

CERTIFIED MAIL

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

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Lazarus Gov.
Center

Application No: 02-13197

DATE: 8/6/2002

Millennium Inorganic Chemicals Inc Plt2
Dianna Henslee
P.O. Box 310
Ashtabula, OH 44004

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Michael W. Ahern

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

NEDO



**Permit To Install
Terms and Conditions**

**Issue Date: 8/6/2002
Effective Date: 8/6/2002**

FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 02-13197

Application Number: 02-13197
APS Premise Number: 0204010193
Permit Fee: **\$2000**
Name of Facility: Millennium Inorganic Chemicals Inc Plt2
Person to Contact: Dianna Henslee
Address: P.O. Box 310
Ashtabula, OH 44004

Location of proposed air contaminant source(s) [emissions unit(s)]:
**2426 Middle Rd
Ashtabula, Ohio**

Description of proposed emissions unit(s):
Administrative modification (second) of PTI 02-13197 issued on 5/3/01 to correct emission limitations.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification 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 source(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 included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

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

6

Millennium Inorganic Chemicals Inc Plt2

PTI Application: **02-13197**

Modification Issued: 8/6/2002

Facility ID: **0204010193**

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.

12. 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.

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. 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.

5. 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.

6. 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.

7. 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).

8. 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.

Millennium Inorganic Chemicals Inc Plt2
PTI Application: 02-13197
Modification Issued: 8/6/2002

Facility ID: 0204010193

9. 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**

<u>Pollutant</u>	<u>Tons Per Year</u>
NO _x	187.2
CO	163.4
Total OC	35.76
Particulates	58.32
S0 ₂	13.84

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

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

1. At no time will the installation of emissions units B013 through B016 (combined cycle combustion turbine/heat recovery steam generators) and B017 (single cycle combustion turbine) listed in this permit and the shut down or restricted operation of two existing emissions units B004 (coal-fired steam boiler) and B003, B009, and B012 (three gas-fired steam boilers) violate the NO_x, CO, Particulate, and Total Organic Compound emissions netting calculations.
2. Pursuant to your application of June 16, 1999, the terms and conditions in this permit to install are contingent upon the following sequential events occurring: the installation, start-up, and initial operation of emissions units B013 through B017 and the permanent shut-down and removal of emissions units B003, B004, B009, and B012 located at this facility; in lieu of removal, the rendering of emissions units B003, B004, B009, and B012 physically inoperable by the removal of some critical piece of operating equipment (boiler feed pump, main steam line, gas supply line, coal feeders, etc.) will be sufficient.
3. The permittee shall notify the Ohio EPA in writing of the dates on which installation of emissions units B013 through B017 commenced and were completed. The permittee shall also notify the Ohio EPA in writing of the dates on which emissions units B003, B004, B009, and B012 were permanently shut down and removed from the property (or rendered completely inoperable). These notifications shall be submitted to the Northeast District Office within 15 days after each event occurs.

The following is a table demonstrating the resultant effect of the shutdowns and removal of the above referenced emissions units on the emissions from this facility related to the emissions units installed under this permit:

Pollutants	New Emissions	Old Emissions	Net Change
NO _x	+ 187.2 TPY	- 147.33 TPY	+ 39.87 TPY
CO	+ 163.4 TPY	- 68.82 TPY	+ 94.58 TPY
TOC	+ 35.76 TPY	- 1.17 TPY	+ 34.59 TPY
Particulates	+ 58.32 TPY	- 55.24 TPY	+ 3.08 TPY
SO ₂	+ 13.84 TPY	- 639.68 TPY	- 625.84 TPY

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

None

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

A. State and Federally Enforceable Section

OAC rule 3745-31-05(D); Federally enforceable facility restrictions to avoid PSD requirements.

Applicable Emissions Limitations/Control Measures

Nitrogen oxide (NO_x) emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY. (See A.I.2.b.)

Carbon monoxide (CO) emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY. (See A.I.2.c.)

Total organic compound (OC) emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY. (See A.I.2.c.)

Particulate emissions (PE) from this emissions unit shall not exceed 3.70 lbs/hr. and 14.58 TPY.** (See A.I.2.f.)

Sulfur dioxide (SO_x) emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

NO_x emissions from the gas turbine portion of this emissions unit shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. *

Sulfur content of natural gas burned in the gas turbine

portion of this emissions unit shall not exceed 0.8 percent by weight. *

SO_x emissions from the gas turbine portion of this emissions unit shall not exceed 0.015 percent by volume at 15 % oxygen and on a dry basis. *

The PE rate from the exhaust of the combustion turbine portion of this emissions unit shall not exceed 0.040 pound per million Btu of actual heat input. ***

The PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu of actual heat input.***

SO_x emissions from the exhaust of this emissions unit shall not exceed 0.5 pound per million Btu of actual heat input.*

See A.I.2.g.

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

For emissions unit B013 through B017 collectively, see A.I.2.h.

15

Millennium Inorganic Chemicals Inc Plt2

PTI Application: **02 12107**

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Facility ID: **0204010193**

Emissions Unit ID: **B013**

Modification Issued: 8/6/2002**2. Additional Terms and Conditions**

- 2.a** The combustion turbine portion of this emissions unit shall be equipped with a dry, low NO_x combustor control device.
- 2.b** The 12.53 lbs/hour nitrogen oxides allowable emission rate for NO_x emissions is established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.c** The 12.70 lbs/hour CO and 2.12 lbs/hour OC allowable emission rates are established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.d** * These emissions limitations are less stringent than the corresponding limitation(s) specified above pursuant to OAC rule 3745-31-05(A)(3).
- 2.e** ***These PE rate limitations are equal to or less stringent than the corresponding limitation(s) specified below in A.I.2.f.
- 2.f** **Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0⁰ F) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an hourly emissions rate of 3.70 pounds at 0⁰ Fahrenheit.
- 2.g** By reference, the duct burner portion of this emissions unit is exempted from all but the general NSPS emissions requirements of 40 CFR Part 60, Subpart Dc as long as this steam generation unit burns only natural gas as a fuel.
- 2.h** The total annual emissions of NO_x and CO from these new emissions units, B013 through B017, at this facility shall be limited to 187.2 tons and 163.4 tons respectively. These annual NO_x and CO emissions limitations for emissions units B013 through B017 shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis.

17

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PTI A₁

Modification Issued: 8/6/2002

Emissions Unit ID: **B013**

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.
2. The maximum quantity of natural gas which may be burned in emissions units B013 through B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure

Modification Issued: 8/6/2002

enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units, the permittee shall not exceed the following natural gas usage limitations:

<u>CALENDAR MONTH(S) FOLLOWING STARTUP</u>	<u>ALLOWABLE CUMULATIVE TOTAL VOLUME OF NATURAL GAS BURNED(in millions of cubic feet)</u>
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

3. The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight [from 40 CFR Part 60.333(b)].

III. Monitoring and/or Recordkeeping Requirements

1. In accordance with 40 CFR 60.334, the permittee shall analyze and maintain records of the fuel-bound sulfur content for the natural gas supplied to this emissions unit in the following manner:
 - a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.
 - b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).
 - c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability

ModifEmissions Unit ID: **B013**

in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.
3. The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption of each portion of this combined cycle unit.
4. The permittee shall maintain monthly records of the following information:
 - a. The volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);
 - b. The volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);
 - c. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);
 - d. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);
 - e. The volume of natural gas burned for the rolling, 12-month summation period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017 collectively;
 - f. The number of hours of operation of this emissions unit for each calendar month;
 - g. The collective number of hours of operation of emissions units B013 through B017; and
 - h. A calculation of the NO_x and CO emissions from this emissions unit based on factors listed in Section A.V.1.j. & A.V.1.k. or upon an emissions factor developed from the initial performance/emissions compliance test data.
5. 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, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

20

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PTI A₁

Modification Issued: 8/6/2002

Emissions Unit ID: **B013**

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports which identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.
2. The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.
3. 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.
4. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).
5. Permittee shall submit an annual report which summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.
6. The permittee shall also submit annual reports which specify the total NO_x emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
7. The permittee shall submit required reports in the following manner:
 - a. Reports of any required monitoring and/or record keeping information shall be submitted to the Ohio EPA Northeast District Office.
 - b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or

preventive measures which have been or will be taken, shall be submitted to the Ohio EPA Northeast District Office. If no deviations occurred

during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, 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.).

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:

- i. The PE rate from the combustion turbine portion of this emissions unit shall not exceed 0.040 lbs/mmBtu.
- ii. The PE rate from the duct heater portion of this emissions unit shall not exceed 0.020 lb/mmBtu.

Applicable Compliance Method: Compliance with these emission limitations shall be determined during the initial performance/emissions compliance testing of this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- b. Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

- c. Emission Limitation: Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

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

- d. Emission Limitations: NO_x emissions from the combustion turbine portion of this

24

Millen

PTI A₁

Modification Issued: 8/6/2002

Emissions Unit ID: **B013**

emissions unit shall not exceed 190 ppmv at 15% oxygen, on a dry basis.

Applicable Compliance Method: Compliance shall be determined by using appropriate NSPS test requirements as specified in 40 CFR 60.8 and 40 CFR Part 60, Subpart GG, as they apply to an emissions unit of this type with a heat input of greater than 10 mmBtu/hr and less than 100 mmBtu/hr.

- e. Emissions Limitation: NO_x emissions from all of these new emissions units (B013 through B017) shall not exceed 187.2 TPY.

Applicable Compliance Method: Compliance with this annual NO_x emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- f. Emissions Limitation: CO emissions from all of these new emissions units (B013 through B017) shall not exceed 163.4 TPY.

Applicable Compliance Method: Compliance with this annual CO emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- g. Emission Limitation: The PE rate from this emissions unit shall not exceed 3.70lbs/hr and 14.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.0193 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 7.6 lbs/million cubic feet of fuel

Emissions Unit ID: **B013**

burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above. If required pursuant to OAC rule 3745-15-04, the permittee shall demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- h. Emission Limitation: SO_x emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.94S lb/mmBtu (where S= the % sulfur in the fuel; the percentage of sulfur in natural gas shall be assumed to be 0.00008% based on the reported maximum level of sulfur in natural gas of 2.5 grains per 100 cubic foot and a density of natural gas of 0.045lb/scf) as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 0.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the SO₂ emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined

Emissions Unit ID: **B013**

by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- i. Emission Limitation: OC emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0⁰ F for hourly emissions or 55.65 mmBtu/hr at 55⁰ F for annual emissions) by an emissions factor of 0.007 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 5.5 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity) to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- j. Emission Limitation: NOx emissions from this emissions unit shall not exceed ~~12.40~~ **12.53** lbs/hr and 50.37 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0⁰ F for hourly emissions or 55.65 mmBtu/hr at 55⁰ F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NOx control system to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 0.10 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions value.

28

Millen

PTI A₁

Modification Issued: 8/6/2002

Emissions Unit ID: **B013**

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are

Modification Issued: 8/6/2002

conducted, the NO_x emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- k. Emission Limitation: CO emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.11 lb/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 35 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the CO emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

2. Emissions Testing Requirement (B013):

Millennium Inorganic Chemicals Inc Plt2

PTI Application: **02 12107**

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Facility ID: **0204010193**

Emissions Unit ID: **B013**

Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of this emissions unit (per 40 CFR 60.8), the permittee shall conduct, or have conducted, initial performance/emissions compliance testing for this emissions unit in accordance with the following requirements:

Modification Issued: 8/6/2002

- a. The emission testing shall be conducted prior to the issuance of a Permit to Operate for emissions unit B013, and within 60 days of the initial startup of this combined cycle combustion turbine/duct heater electric/steam generation unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, SO₂, and CO.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for NO_x and SO₂, Method 20 of 40 CFR Part 60, Appendix A [as specified for NSPS emissions units in 40 CFR 60.335(c)(3)]; and for CO, Method 10 of 40 CFR Part 60, Appendix A; Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- d. The SO_x and NO_x tests shall be conducted while the combustion turbine portion of this emissions unit is operating at or near 30, 50, 75 and 100% of peak load (in accordance with 40 CFR 60.8 and 40 CFR Part 60, Subpart GG) or at or near 4 points in the normal operating range of the gas turbine, including the minimum point in the range and peak load.
- e. A fifth test for SO_x and NO_x emissions shall further be conducted while the duct heater portion of this emissions unit is operating at or near 100% of rated capacity (duct heater at full load) while the combustion turbine is also at full load.
- f. Only one of the similar units B013, B014, B015, or B016 shall be tested for CO emissions. This testing will be used to establish a CO emissions factor for the combined cycle system. The CO testing shall be conducted while the combustion turbine portion of the emissions unit chosen to be tested is operating at or near 30 and 100% of peak load or at or near 2 points including the minimum point in the range load of the normal operating range of the gas turbine, while the duct heater is operating at or near 100% of rated capacity.

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

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

emissions from the emissions unit and/or the performance of the control equipment.

33

Millen

PTI A₁

Emissions Unit ID: **B013**

Modification Issued: 8/6/2002

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

VI. Miscellaneous Requirements

None

Modification Issued: 8/6/2002

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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) [Continued]

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
B014 - Combustion turbine with heat recovery boiler 3: Combined Cycle Combustion Turbine/Heat Recovery Steam Generator (HRSG) Steam/Electric Generation System with a Rolls-Royce Allison Model 501-KB7, Natural Gas-fired Combustion Turbine (65.1 mmBtu/hr--4.92 MW) equipped with dry, low NOx combustor control device & a Supplemental Natural Gas-fired, 55.0 mmBtu/hr Duct Heater/Heat Recovery Boiler, Company ID: BF-106 SECOND MODIFICATION OF PTI 02-3197, ORIGINALLY ISSUED FEBRUARY 9, 2000 AND MODIFIED AS PTI 02-13197 ON MAY 3, 2001	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-11(B)(4) OAC rule 3745-17-10(B) OAC rule 3745-18-06(E) 40 CFR Part 60, Subpart GG 40 CFR Part 60, Subpart Dc OAC rule 3745-17-07 OAC rule 3745-31-05(D); Federally enforceable facility restrictions to avoid PSD requirements.

Applicable Emissions
Limitations/Control Measures

Nitrogen oxide (NO_x) emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY. (See A.I.2.b.)

Carbon monoxide(CO) emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY. (See A.I.2.c.)

Total organic compound (OC) emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY. (See A.I.2.c.)

Particulate emissions (PE) from this emissions unit shall not exceed 3.70 lbs/hr. and 14.58 TPY.** (See A.I.2.f.)

Sulfur dioxide (SO_x) emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

NO_x emissions from the gas turbine portion of this emissions unit shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. *

Sulfur content of natural gas burned in the gas turbine portion of this emissions unit shall not exceed 0.8 percent by weight. *

SO_x emissions from the gas turbine portion of this emissions unit shall not exceed 0.015 percent by volume at 15 % oxygen and on a dry basis. *

The PE rate from the exhaust of the combustion turbine portion of

this emissions unit shall not exceed 0.040 pound per million Btu of actual heat input. ***

The PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu of actual heat input.***

The SO_x emissions from the exhaust of this emissions unit shall not exceed 0.5 pound per million Btu of actual heat input.*

See A.I.2.g.

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

For emissions unit B013 through B017 collectively, see A.I.2.h.

2. Additional Terms and Conditions

- 2.a** The combustion turbine portion of this emissions unit shall be equipped with a dry, low NOx combustor control device.

Modification Issued: 8/6/2002

- 2.b** The 12.53 lbs/hour allowable emission rate for NO_x emissions is established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.c** The 12.70 lbs/hour CO and 2.12 lbs/hour total OC allowable emission rates are established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.d** * These emissions limitations are less stringent than the corresponding limitation(s) specified above pursuant to OAC rule 3745-31-05(A)(3).
- 2.e** ***These PE rate limitations are equal to or less stringent than the corresponding limitation(s) specified below in A.I.2.f.
- 2.f** **Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0^o F) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an hourly emissions rate of 3.70 pounds at 0^o Fahrenheit.
- 2.g** By reference, the duct burner portion of this emissions unit is exempted from all but the general NSPS emissions requirements of 40 CFR Part 60, Subpart Dc as long as this steam generation unit burns only natural gas as a fuel.

Modification Issued: 8/6/2002

- 2.h** The total annual emissions of NO_x and CO from these new emissions units, B013 through B017, at this facility shall be limited to 187.2 tons and 163.4 tons respectively. These annual NO_x and CO emissions limitations for emissions units B013 through B017 shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.
2. The maximum quantity of natural gas which may be burned in emissions units B013 through B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units, the permittee shall not exceed the following natural gas usage limitations:

Modification Issued: 8/6/2002

<u>CALENDAR MONTH(S) FOLLOWING STARTUP</u>	<u>ALLOWABLE CUMULATIVE TOTAL VOLUME OF NATURAL GAS BURNED(in millions of cubic feet)</u>
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

3. The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight [from 40 CFR Part 60.333(b)].

III. Monitoring and/or Recordkeeping Requirements

1. In accordance with 40 CFR 60.334, the permittee shall analyze and maintain records of the fuel-bound sulfur content for the natural gas supplied to this emissions unit in the following manner:
 - a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.
 - b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).
 - c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be

Emissions Unit ID: **B014**

zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.
3. The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption of each portion of this combined cycle unit.
4. The permittee shall maintain monthly records of the following information:
 - a. The volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);
 - b. The volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);
 - c. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);
 - d. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);
 - e. The volume of natural gas burned for the rolling, 12-month summation period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017 collectively;
 - f. The number of hours of operation of this emissions unit for each calendar month;
 - g. The collective number of hours of operation of emissions units B013 through B017; and
 - h. A calculation of the NO_x and CO emissions from this emissions unit based on factors listed in Section A.V.1.j. & A.V.1.k. or upon an emissions factor developed from the initial performance/emissions compliance test data.
5. 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, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports which identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports

Emissions Unit ID: **B014**

Modification Issued: 8/6/2002

shall be submitted by January 31 of each year.

Modification Issued: 8/6/2002

2. The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.
3. 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.
4. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).
5. Permittee shall submit an annual report which summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.
6. The permittee shall also submit annual reports which specify the total NO_x emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
7. The permittee shall submit required reports in the following manner:
 - a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the Ohio EPA Northeast District Office.
 - b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA Northeast District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, 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.).

Modification Issued: 8/6/2002

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:

- i. The PE rate from the combustion turbine portion of this emissions unit shall not exceed 0.040 lbs/mmBtu.
- ii. The PE rate from the duct heater portion of this emissions unit shall not exceed 0.020 lb/mmBtu.

Applicable Compliance Method: Compliance with these emission limitations shall be determined during the initial performance/emissions compliance testing of this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- b. Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

- c. Emission Limitation: Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

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

- d. Emission Limitations: NO_x emissions from the combustion turbine portion of this emissions unit shall not exceed 190 ppmv at 15% oxygen, on a dry basis.

Applicable Compliance Method: Compliance shall be determined by using appropriate NSPS test requirements as specified in 40 CFR 60.8 and 40 CFR Part 60, Subpart GG, as they apply to an emissions unit of this type with a heat input of greater than 10 mmBtu/hr and less than 100 mmBtu/hr.

Emissions Unit ID: B014

- e. Emissions Limitation: NO_x emissions from all of these new emissions units (B013 through B017) shall not exceed 187.2 TPY.

Applicable Compliance Method: Compliance with this annual NO_x emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- f. Emissions Limitation: CO emissions from all of these new emissions units (B013 through B017) shall not exceed 163.4 TPY.

Applicable Compliance Method: Compliance with this annual CO emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- g. Emission Limitation: The PE rate from this emissions unit shall not exceed 3.70lbs/hr and 14.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.0193 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 7.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 &

Emissions Unit ID: **B014**

2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above. If required pursuant to OAC rule 3745-15-04, the permittee shall demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- h. Emission Limitation: SO_x emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0⁰ F for hourly emissions or 55.65 mmBtu/hr at 55⁰ F for annual emissions) by an emissions factor of 0.94S lb/mmBtu (where S= the % sulfur in the fuel; the percentage of sulfur in natural gas shall be assumed to be 0.00008% based on the reported maximum level of sulfur in natural gas of 2.5 grains per 100 cubic foot and a density of natural gas of 0.045lb/scf) as specified in USEPA reference document AP-42, Fifth Edition,

Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.

- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 0.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth

Modification Issued: 8/6/2002

Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the SO₂ emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- i. Emission Limitation: OC emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

Emissions Unit ID: **B014**

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.007 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 5.5 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity) to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- j. Emission Limitation: NOx emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NOx control system to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat

Modification Issued: 8/6/2002

input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 0.10 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the NO_x emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- k. Emission Limitation: CO emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.11 lb/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 35 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth

Emissions Unit ID: **B014**

Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the CO emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

2. Emissions Testing Requirement (B014):

Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of this emissions unit (per 40 CFR 60.8), the permittee shall conduct, or have conducted, initial performance/emissions compliance testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted prior to the issuance of a Permit to Operate for emissions unit B014, and within 60 days of the initial startup of this combined cycle combustion turbine/duct heater electric/steam generation unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, SO₂, and CO.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for NO_x and SO₂, Method 20 of 40 CFR Part 60, Appendix A [as specified for NSPS emissions units in 40 CFR 60.335(c)(3)]; and for CO, Method 10 of 40 CFR Part 60, Appendix A; . Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- d. The SO_x and NO_x tests shall be conducted while the combustion turbine portion of this emissions unit is operating at or near 30, 50, 75 and 100% of peak load (in accordance with 40 CFR 60.8 and 40 CFR Part 60, Subpart GG) or at or near 4 points in the normal operating range of the gas turbine, including the minimum point in the range and peak load.
- e. A fifth test for SO_x and NO_x emissions shall further be conducted while the duct heater portion of this emissions unit is operating at or near 100% of rated capacity (duct heater at full load) while the combustion turbine is also at full load.
- f. Only one of the similar units B013, B014, B015, or B016 shall be tested for CO emissions. This testing will be used to establish a CO emissions factor for the combined cycle system.

Modification Issued: 8/6/2002

The CO testing shall be conducted while the combustion turbine portion of the emissions unit chosen to be tested is operating at or near 30 and 100% of peak load or at or near 2 points including the minimum point in the range load of the normal operating range of the gas turbine, while the duct heater is operating at or near 100% of rated capacity.

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

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

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

VI. Miscellaneous Requirements

None

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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

Modification Issued: 8/6/2002

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

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
B015 - Combustion turbine with heat recovery boiler 4: Combined Cycle Combustion Turbine/Heat Recovery Steam Generator (HRSG) Steam/Electric Generation System with a Rolls-Royce Allison Model 501-KB7, Natural Gas-fired Combustion Turbine (65.1 mmBtu/hr--4.92 MW) equipped with dry, low NOx combustor control device & a Supplemental Natural Gas-fired, 55.0 mmBtu/hr Duct Heater/Heat Recovery Boiler, Company ID: BF-107 SECOND MODIFICATION OF PTI 02-3197, ORIGINALLY ISSUED FEBRUARY 9, 2000 AND MODIFIED AS PTI 02-13197 ON MAY 3, 2001	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(4)
	OAC rule 3745-17-10(B)
	40 CFR Part 60, Subpart GG
	OAC rule 3745-18-06(E)

Modification Issued: 8/6/2002

40 CFR Part 60, Subpart Dc

OAC rule 3745-17-07

OAC rule 3745-31-05(D);
Federally enforceable facility
restrictions to avoid PSD
requirements.

Applicable Emissions
Limitations/Control Measures

Nitrogen oxide (NO_x) emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY. (See A.I.2.b.)

Carbon monoxide (CO) emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY. (See A.I.2.c.)

Total organic compound (OC) emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY. (See A.I.2.c.)

Particulate emissions (PE) from this emissions unit shall not exceed 3.70 lbs/hr. and 14.58 TPY.** (See A.I.2.f.)

Sulfur dioxide (SO_x) emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

NO_x emissions from the gas turbine portion of this emissions unit shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. *

Sulfur content of natural gas burned in the gas turbine portion of this

emissions unit shall not exceed 0.8 percent by weight. *

SO₂ emissions from the gas turbine portion of this emissions unit shall not exceed 0.015 percent by volume at 15 % oxygen and on a dry basis. *

The PE rate from the exhaust of the combustion turbine portion of this emissions unit shall not exceed 0.040 pound per million Btu of actual heat input. ***

The PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu of actual heat input.***

The SO_x emissions from the exhaust of this emissions unit shall not exceed 0.5 pound per million Btu of actual heat input.*

See A.I.2.g.

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

For emissions unit B013 through B017 collectively, see A.I.2.h.

Emissions Unit ID: B015

2. Additional Terms and Conditions

- 2.a** The combustion turbine portion of this emissions unit shall be equipped with a dry, low NO_x combustor control device.
- 2.b** The 12.53 lbs/hour allowable rate for NO_x is established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.c** The 12.70 lbs/hour CO and 2.12 lbs/hour total OC allowable emission rates are established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.d** * These emissions limitations are less stringent than the corresponding limitation(s) specified above pursuant to OAC rule 3745-31-05(A)(3).
- 2.e** ***These PE rate limitations are equal to or less stringent than the corresponding limitation(s) specified below in A.I.2.f.
- 2.f** **Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0⁰ F) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an hourly emissions rate of 3.70 pounds at 0⁰ Fahrenheit.
- 2.g** By reference, the duct burner portion of this emissions unit is exempted from all but the general NSPS emissions requirements of 40 CFR Part 60, Subpart Dc as long as this steam generation unit burns only natural gas as a fuel.
- 2.h** The total annual emissions of NO_x and CO from these new emissions units, B013 through B017, at this facility shall be limited to 187.2 tons and 163.4 tons respectively. These annual NO_x and CO emissions limitations for emissions units B013 through B017 shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.
2. The maximum quantity of natural gas which may be burned in emissions units B013 through B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation

Emissions Unit ID: **B015**

Modification Issued: 8/6/2002

following startup of these emissions units, the permittee shall not exceed the following natural gas usage limitations:

Modification Issued: 8/6/2002

<u>CALENDAR MONTH(S) FOLLOWING STARTUP</u>	<u>ALLOWABLE CUMULATIVE TOTAL VOLUME OF NATURAL GAS BURNED(in millions of cubic feet)</u>
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

3. The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight [from 40 CFR Part 60.333(b)].

III. Monitoring and/or Recordkeeping Requirements

1. In accordance with 40 CFR 60.334, the permittee shall analyze and maintain records of the fuel-bound sulfur content for the natural gas supplied to this emissions unit in the following manner:
 - a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.
 - b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).
 - c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

Emissions Unit ID: B015

2. 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.
3. The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption of each portion of this combined cycle unit.
4. The permittee shall maintain monthly records of the following information:
 - a. The volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);
 - b. The volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);
 - c. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);
 - d. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);
 - e. The volume of natural gas burned for the rolling, 12-month summation period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017 collectively;
 - f. The number of hours of operation of this emissions unit for each calendar month;
 - g. The collective number of hours of operation of emissions units B013 through B017; and
 - h. A calculation of the NO_x and CO emissions from this emissions unit based on factors listed in Section A.V.1.j. & A.V.1.k. or upon an emissions factor developed from the initial performance/emissions compliance test data.
5. 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, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports which identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

Modification Issued: 8/6/2002

Emissions Unit ID: **B015**

Modification Issued: 8/6/2002

2. The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.
3. 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.
4. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).
5. Permittee shall submit an annual report which summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.
6. The permittee shall also submit annual reports which specify the total NO_x emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
7. The permittee shall submit required reports in the following manner:
 - a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the Ohio EPA Northeast District Office.
 - b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA Northeast District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, 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.).

Modification Issued: 8/6/2002

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:

- i. The PE rate from the combustion turbine portion of this emissions unit shall not exceed 0.040 lbs/mmBtu.
- ii. The PE rate from the duct heater portion of this emissions unit shall not exceed 0.020 lb/mmBtu.

Applicable Compliance Method: Compliance with these emission limitations shall be determined during the initial performance/emissions compliance testing of this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- b. Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

- c. Emission Limitation: Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

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

- d. Emission Limitations: NO_x emissions from the combustion turbine portion of this emissions unit shall not exceed 190 ppmv at 15% oxygen, on a dry basis.

Applicable Compliance Method: Compliance shall be determined by using appropriate NSPS test requirements as specified in 40 CFR 60.8 and 40 CFR Part 60, Subpart GG, as they apply to an emissions unit of this type with a heat input of greater than 10 mmBtu/hr and less than 100 mmBtu/hr.

Emissions Unit ID: B015

- e. Emissions Limitation: NO_x emissions from all of these new emissions units (B013 through B017) shall not exceed 187.2 TPY.

Applicable Compliance Method: Compliance with this annual NO_x emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- f. Emissions Limitation: CO emissions from all of these new emissions units (B013 through B017) shall not exceed 163.4 TPY.

Applicable Compliance Method: Compliance with this annual CO emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- g. Emission Limitation: The PE rates from this emissions unit shall not exceed 3.70lbs/hr and 14.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^o F for hourly emissions or 55.65 mmBtu/hr at 55^o F for annual emissions) by an emissions factor of 0.0193 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 7.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual

Emissions Unit ID: **B015**

emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above. If required pursuant to OAC rule 3745-15-04, the permittee shall

Modification Issued: 8/6/2002

demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- h. Emission Limitation: SO_x emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.94S lb/mmBtu (where S= the % sulfur in the fuel; the percentage of sulfur in natural gas shall be assumed to be 0.00008% based on the reported maximum level of sulfur in natural gas of 2.5 grains per 100 cubic foot and a density of natural gas of 0.045lb/scf) as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 0.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the SO₂ emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded

Emissions Unit ID: B015

per A.III above.

- i. Emission Limitation: Total OC emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

Modification Issued: 8/6/2002

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.007 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 5.5 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity) to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- j. Emission Limitation: NOx emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NOx control system to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 0.10 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions

Modification Issued: 8/6/2002

value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the NOx emissions factor for the entire combined cycle system determined by those

Modification Issued: 8/6/2002

tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- k. Emission Limitation: CO emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.11 lb/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 35 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the CO emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

2. Emissions Testing Requirement (B015):

Emissions Unit ID: **B015**

Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of this emissions unit (per 40 CFR 60.8), the permittee shall conduct, or have conducted, initial performance/emissions compliance testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted prior to the issuance of a Permit to Operate for emissions unit B015, and within 60 days of the initial startup of this combined cycle combustion turbine/duct heater electric/steam generation unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x , SO_2 , and CO.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for NO_x and SO_2 , Method 20 of 40 CFR Part 60, Appendix A [as specified for NSPS emissions units in 40 CFR 60.335(c)(3)]; and for CO, Method 10 of 40 CFR Part 60, Appendix A; . Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- d. The SO_x and NO_x tests shall be conducted while the combustion turbine portion of this emissions unit is operating at or near 30, 50, 75 and 100% of peak load (in accordance with 40 CFR 60.8 and 40 CFR Part 60, Subpart GG) or at or near 4 points in the normal operating range of the gas turbine, including the minimum point in the range and peak load.
- e. A fifth test for SO_x and NO_x emissions shall further be conducted while the duct heater portion of this emissions unit is operating at or near 100% of rated capacity (duct heater at full load) while the combustion turbine is also at full load.
- f. Only one of the similar units B013, B014, B015, or B016 shall be tested for CO emissions. This testing will be used to establish a CO emissions factor for the combined cycle system. The CO testing shall be conducted while the combustion turbine portion of the emissions unit chosen to be tested is operating at or near 30 and 100% of peak load or at or near 2 points including the minimum point in the range load of the normal operating range of the gas turbine, while the duct heater is operating at or near 100% of rated capacity.

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

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

Emissions Unit ID: **B015**

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

Modification Issued: 8/6/2002

VI. Miscellaneous Requirements

None

Modification Issued: 8/6/2002

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
B016 - Combustion turbine with heat recovery boiler 5: Combined Cycle Combustion Turbine/Heat Recovery Steam Generator (HRSG) Steam/Electric Generation System with a Rolls-Royce Allison Model 501-KB7, Natural Gas-fired Combustion Turbine (65.1 mmBtu/hr--4.92 MW) equipped with dry, low NOx combustor control device & a Supplemental Natural Gas-fired, 55.0 mmBtu/hr Duct Heater/Heat Recovery Boiler, Company ID: BF-108 SECOND MODIFICATION OF PTI 02-3197, ORIGINALLY ISSUED FEBRUARY 9, 2000 AND MODIFIED AS PTI 02-13197 ON MAY 3, 2001	<p>OAC rule 3745-31-05(A)(3)</p> <p>OAC rule 3745-17-11(B)(4)</p> <p>OAC rule 3745-17-10(B)</p> <p>OAC rule 3745-18-06(E)</p> <p>40 CFR Part 60, Subpart Dc</p> <p>OAC rule 3745-17-07</p> <p>OAC rule 3745-31-05(D); Federally enforceable facility restrictions to</p>

avoid PSD requirements.

Applicable Emissions
Limitations/Control Measures

Nitrogen oxide (NO_x) emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY. (See A.I.2.b.)

Carbon monoxide CO emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY. (See A.I.2.c.)

Total organic compound (OC) emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY. (See A.I.2.c.)

Particulate emissions (PE) from this emissions unit shall not exceed 3.70 lbs/hr. and 14.58 TPY.** (See A.I.2.f.)

Sulfur dioxide SO_x emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

NO_x emissions from the gas turbine portion of this emissions unit shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. *

Sulfur content of natural gas burned in the gas turbine portion of this emissions unit shall not exceed 0.8 percent by weight. *

SO_x emissions from the gas turbine portion of this emissions unit shall not exceed 0.015 percent by volume at 15 % oxygen and on a dry basis. *

The PE rate from the exhaust of the combustion turbine portion of this

Emissions Unit ID: **B016**

emissions unit shall not exceed 0.040 pound per million Btu of actual heat input. ***

The PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu of actual heat input.***

SO_x emissions from the exhaust of this emissions unit shall not exceed 0.5 pound per million Btu of actual heat input.*

See A.I.2.g.

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

For emissions unit B013 through B017 collectively, see A.I.2.h.

Emissions Unit ID: B016

2. Additional Terms and Conditions

- 2.a** The combustion turbine portion of this emissions unit shall be equipped with a dry, low NO_x combustor control device.
- 2.b** The 12.53 lbs/hour allowable rate for NO_x emissions is established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.c** The 12.70lbs/hour CO and 2.12 lbs/hour total OC allowable emission rates are established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.d** * These emissions limitations are less stringent than the corresponding limitation(s) specified above pursuant to OAC rule 3745-31-05(A)(3).
- 2.e** ***These PE rate limitations are equal to or less stringent than the corresponding limitation(s) specified below in A.I.2.f.
- 2.f** **Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0⁰ F) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an hourly emissions rate of 3.70 pounds at 0⁰ Fahrenheit.
- 2.g** By reference, the duct burner portion of this emissions unit is exempted from all but the general NSPS emissions requirements of 40 CFR Part 60, Subpart Dc as long as this steam generation unit burns only natural gas as a fuel.
- 2.h** The total annual emissions of NO_x and CO from these new emissions units, B013 through B017, at this facility shall be limited to 187.2 tons and 163.4 tons respectively. These annual NO_x and CO emissions limitations for emissions units B013 through B017 shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.
2. The maximum quantity of natural gas which may be burned in emissions units B013 through B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation

Emissions Unit ID: **B016**

Modification Issued: 8/6/2002

following startup of these emissions units, the permittee shall not exceed the following natural gas usage limitations:

Modification Issued: 8/6/2002

<u>CALENDAR MONTH(S) FOLLOWING STARTUP</u>	<u>ALLOWABLE CUMULATIVE TOTAL VOLUME OF NATURAL GAS BURNED(in millions of cubic feet)</u>
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

3. The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight [from 40 CFR Part 60.333(b)].

III. Monitoring and/or Recordkeeping Requirements

1. In accordance with 40 CFR 60.334, the permittee shall analyze and maintain records of the fuel-bound sulfur content for the natural gas supplied to this emissions unit in the following manner:
 - a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.
 - b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).
 - c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

Emissions Unit ID: B016

2. 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.
3. The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption of each portion of this combined cycle unit.
4. The permittee shall maintain monthly records of the following information:
 - a. The volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);
 - b. The volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);
 - c. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);
 - d. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);
 - e. The volume of natural gas burned for the rolling, 12-month summation period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017 collectively;
 - f. The number of hours of operation of this emissions unit for each calendar month;
 - g. The collective number of hours of operation of emissions units B013 through B017; and
 - h. A calculation of the NO_x and CO emissions from this emissions unit based on factors listed in Section A.V.1.j. & A.V.1.k. or upon an emissions factor developed from the initial performance/emissions compliance test data.
5. 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, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports which identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

Modification Issued: 8/6/2002

Emissions Unit ID: **B016**

Modification Issued: 8/6/2002

2. The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.
3. 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.
4. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).
5. Permittee shall submit an annual report which summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.
6. The permittee shall also submit annual reports which specify the total NO_x emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
7. The permittee shall submit required reports in the following manner:
 - a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the Ohio EPA Northeast District Office.
 - b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA Northeast District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, 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.).

Modification Issued: 8/6/2002

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:

- i. The PE rate from the combustion turbine portion of this emissions unit shall not exceed 0.040 lbs/mmBtu.
- ii. The PE rate from the duct heater portion of this emissions unit shall not exceed 0.020 lb/mmBtu.

Applicable Compliance Method: Compliance with these emission limitations shall be determined during the initial performance/emissions compliance testing of this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- b. Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

- c. Emission Limitation: Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

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

- d. Emission Limitations: NO_x emissions from the combustion turbine portion of this emissions unit shall not exceed 190 ppmv at 15% oxygen, on a dry basis.

Applicable Compliance Method: Compliance shall be determined by using appropriate NSPS test requirements as specified in 40 CFR 60.8 and 40 CFR Part 60, Subpart GG, as they apply to an emissions unit of this type with a heat input of greater than 10 mmBtu/hr and less than 100 mmBtu/hr.

Emissions Unit ID: B016

- e. Emissions Limitation: NO_x emissions from all of these new emissions units (B013 through B017) shall not exceed 187.2 TPY.

Applicable Compliance Method: Compliance with this annual NO_x emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- f. Emissions Limitation: CO emissions from all of these new emissions units (B013 through B017) shall not exceed 163.4 TPY.

Applicable Compliance Method: Compliance with this annual CO emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- g. Emission Limitation: The PE rate from this emissions unit shall not exceed 3.70lbs/hr and 14.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^o F for hourly emissions or 55.65 mmBtu/hr at 55^o F for annual emissions) by an emissions factor of 0.0193 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 7.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual

Emissions Unit ID: **B016**

emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above. If required pursuant to OAC rule 3745-15-04, the permittee shall

Modification Issued: 8/6/2002

demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

- h. Emission Limitation: SO_x emissions from this emissions unit shall not exceed 0.86 lb/hr and 3.46 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.94S lb/mmBtu (where S= the % sulfur in the fuel; the percentage of sulfur in natural gas shall be assumed to be 0.00008% based on the reported maximum level of sulfur in natural gas of 2.5 grains per 100 cubic foot and a density of natural gas of 0.045lb/scf) as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 0.6 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the SO₂ emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded

Emissions Unit ID: B016

per A.III above.

- i. Emission Limitation: Total OC emissions from this emissions unit shall not exceed 2.12 lbs/hr and 8.94 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

Modification Issued: 8/6/2002

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.007 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 5.5 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity) to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- j. Emission Limitation: NO_x emissions from this emissions unit shall not exceed 12.53 lbs/hr and 50.37 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NO_x control system to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 0.10 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions

Modification Issued: 8/6/2002

value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the NOx emissions factor for the entire combined cycle system determined by those

Modification Issued: 8/6/2002

tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

- k. Emission Limitation: CO emissions from this emissions unit shall not exceed 12.70 lbs/hr and 43.58 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined in the following manner:

- i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.11 lb/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96) to determine an hourly emissions value.
- ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) and a figure of 1000 Btu/cubic foot for the caloric value of natural gas, by an emissions factor of 35 lbs/million cubic feet of fuel burned as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1 & 2 (3/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the initial emissions compliance tests are conducted, the CO emissions factor for the entire combined cycle system determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the annual hours of operation as recorded per A.III above.

2. Emissions Testing Requirement (B016):

Emissions Unit ID: **B016**

Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of this emissions unit (per 40 CFR 60.8), the permittee shall conduct, or have conducted, initial performance/emissions compliance testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted prior to the issuance of a Permit to Operate for emissions unit B016, and within 60 days of the initial startup of this combined cycle combustion turbine/duct heater electric/steam generation unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x SO₂ and CO.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for NO_x and SO₂, Method 20 of 40 CFR Part 60, Appendix A [as specified for NSPS emissions units in 40 CFR 60.335(c)(3)]; and for CO, Method 10 of 40 CFR Part 60, Appendix A; Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- d. The SO_x and NO_x tests shall be conducted while the combustion turbine portion of this emissions unit is operating at or near 30, 50, 75 and 100% of peak load (in accordance with 40 CFR 60.8 and 40 CFR Part 60, Subpart GG) or at or near 4 points in the normal operating range of the gas turbine, including the minimum point in the range and peak load.
- e. A fifth test for SO_x and NO_x emissions shall further be conducted while the duct heater portion of this emissions unit is operating at or near 100% of rated capacity (duct heater at full load) while the combustion turbine is also at full load.
- f. Only one of the similar units B013, B014, B015, or B016 shall be tested for CO emissions. This testing will be used to establish a CO emissions factor for the combined cycle system. The CO testing shall be conducted while the combustion turbine portion of the emissions unit chosen to be tested is operating at or near 30 and 100% of peak load or at or near 2 points including the minimum point in the range load of the normal operating range of the gas turbine, while the duct heater is operating at or near 100% of rated capacity.

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

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

Emissions Unit ID: **B016**

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

Emissions Unit ID: **B016**

Modification Issued: 8/6/2002

VI. Miscellaneous Requirements

None

Modification Issued: 8/6/2002

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>

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

Modification Issued: 8/6/2002

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
B017 - Combustion turbine with heat recovery boiler 1: Rolls-Royce Allison Model 501-KB7, Natural Gas-fired, 65.1 mmBtu/hr (4.92 MW), Backup Combustion Turbine equipped with a dry, low NOx combustor control device with a heat recovery steam generator; Company ID: BF-109 SECOND MODIFICATION OF PTI 02-3197, ORIGINALLY ISSUED FEBRUARY 9, 2000 AND MODIFIED AS PTI 02-13197 ON MAY 3, 2001	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)(4)
	OAC rule 3745-18-06(E)
	OAC rule 3745-17-07
	40 CFR Part 60, Subpart GG
	OAC rule 3745-31-05(D); Federally enforceable facility restrictions to avoid PSD requirements.

Modification Issued: 8/6/2002

Applicable Emissions
Limitations/Control Measures

Nitrogen oxide (NO_x) emissions from this emissions unit shall not exceed 7.03 lbs/hr and 26.28 TPY. (See A.I.2.b.)

CO emissions from this emissions unit shall not exceed 8.57 lbs/hr and 25.49 TPY. (See A.I.2.c.)

Total OC emissions from this emissions unit shall not exceed 0.46 lb/hr and 1.71 TPY. (See A.I.2.c.)

Particulate emissions PE from this emissions unit shall not exceed 2.60 lbs/hr. and 9.76 TPY.

Sulfur dioxide SO_x emissions from this emissions unit shall not exceed 0.46 lb/hr and 1.71 TPY.

NO_x emissions from this emissions unit shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. **

Sulfur content of natural gas burned in this emissions unit shall not exceed 0.8 percent by weight. **

SO_x emissions from this emissions unit shall not exceed 0.015 percent by volume at 15 % oxygen and on a dry basis. **

The PE rate from the exhaust of the combustion turbine portion of this emissions unit shall not exceed 0.040 pound per million Btu of actual heat input. **

The SO_x emissions from the combustion turbine exhaust shall not exceed 0.5 pound per million Btu of actual heat input.**

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

For emissions unit B013 through B017 collectively, see A.I.2.e.

2. Additional Terms and Conditions

- 2.a** This combustion turbine emissions unit shall be equipped with a dry, low NO_x combustor control device.
- 2.b** The 7.03 lbs/hour allowable rate for NO_x emissions is established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.c** The 8.57 lbs/hour CO and 0.46 lb/hour total OC allowable emission rates are established to reflect the potential to emit for this emissions unit.

Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.

- 2.d** **These emissions limitations are either equal to, or less stringent than, the corresponding limitation(s) specified in above in Section A.I.1 pursuant to OAC rule 3745-31-05(A)(3).
- 2.e** The total annual emissions of NO_x and CO from these new emissions units, B013 through B017, at this facility shall be limited to 187.2 tons and 163.4 tons respectively. These annual NO_x and CO emissions limitations for emissions units B013 through B017 shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis.

II. Operational Restrictions

- The permittee shall burn only natural gas in this emissions unit.
- The maximum quantity of natural gas which may be burned in emissions units B013 through B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units, the permittee shall not exceed the following natural gas usage limitations:

<u>CALENDAR MONTH(S) FOLLOWING STARTUP</u>	<u>ALLOWABLE CUMULATIVE TOTAL VOLUME OF NATURAL GAS BURNED(in millions of cubic feet)</u>
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9

Modification Issued: 8/6/2002

1-8	2546.7	
1-9	2807.5	
1-10		3068.4
1-11		3329.2
1-12		3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

3. The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight [from 40 CFR Part 60.333(b)].

Modification Issued: 8/6/2002

III. Monitoring and/or Recordkeeping Requirements

1. In accordance with 40 CFR 60.334, the permittee shall analyze and maintain records of the fuel-bound sulfur content for the natural gas supplied to this emissions unit in the following manner:
 - a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.
 - b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).
 - c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.
3. The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on this emissions unit to allow for accurate determination of the fuel consumption of this combustion turbine.
4. The permittee shall maintain monthly records of the following information:
 - a. The volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);
 - b. The volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);
 - c. During the first 12 months of operation following the startup, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);
 - d. During the first 12 months of operation following the startup, the cumulative volume of

Emissions Unit ID: B017

natural gas burned in emissions units B013 through B017 (in millions of cubic feet);

- e. The volume of natural gas burned for the rolling, 12-month summation period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017 collectively;
 - f. The number of hours of operation of this emissions unit for each calendar month;
 - g. The collective number of hours of operation of emissions units B013 through B017; and
 - h. A calculation of the NO_x and CO emissions from this emissions unit based on factors listed in Section A.V.1.j. & A.V.1.k. or upon an emissions factor developed from the initial performance/emissions compliance test data.
5. 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, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports which identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.
2. The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.
3. 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.
4. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations. These reports are due by the date described in Part I - General Terms and Conditions of this permit under section (A)(1).
5. Permittee shall submit an annual report which summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District

Modification Issued: 8/6/2002

Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.

6. The permittee shall also submit annual reports which specify the total NO_x emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

Modification Issued: 8/6/2002

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

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation: The PE rates from this emissions unit shall not exceed 0.040 lbs/mmBtu.

Applicable Compliance Method: Compliance with this emission limitation shall be determined during the initial performance/emissions compliance testing of this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).
 - b. Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with

Emissions Unit ID: B017

the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

- c. Emission Limitation: Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

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

- d. Emission Limitations: NO_x emissions this emissions unit shall not exceed 190 ppmv at 15% oxygen, on a dry basis.

Applicable Compliance Method: Compliance shall be determined by using appropriate NSPS test requirements as specified in 40 CFR 60.8 and 40 CFR Part 60, Subpart GG, as they apply to an emissions unit of this type with a heat input of greater than 10 mmBtu/hr and less than 100 mmBtu/hr.

- e. Emissions Limitation: NO_x emissions from all of these new emissions units (B013 through B017) shall not exceed 187.2 TPY.

Applicable Compliance Method: Compliance with this annual NO_x emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- f. Emissions Limitation: CO emissions from all of these new emissions units (B013 through B017) shall not exceed 163.4 TPY.

Applicable Compliance Method: Compliance with this annual CO emissions limitation for B013 through B017 shall be determined through calculations utilizing collective natural gas utilization and emission units operating hours data recorded above and emissions factors established for both the combined cycle units (B013 through B016) and the single cycle unit (B017) during the required initial compliance tests.

- g. Emission Limitation: The PE rates from this emissions unit shall not exceed 2.60 lbs/hr and 9.76 TPY.

Applicable Compliance Method: Compliance with these emission

Modification Issued: 8/6/2002

limitations shall be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^o F for hourly emissions or 55.65 mmBtu/hr at 55^o F for annual emissions) by an emissions factor of 0.0193 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions value (annual) to the annual hours of operation as recorded per A.III above. If required pursuant to OAC rule 3745-15-04, the permittee shall demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1-5 and OAC rule 3745-17-03(B)(7).

Modification Issued: 8/6/2002

- h. Emission Limitation: SO_x emissions from this emissions unit shall not exceed 0.46 lb/hr and 1.71 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0⁰ F for hourly emissions or 55.65 mmBtu/hr at 55⁰ F for annual emissions) by an emissions factor of 0.94S lb/mmBtu (where S= the % sulfur in the fuel; the percentage of sulfur in natural gas shall be assumed to be 0.00008% based on the reported maximum level of sulfur in natural gas of 2.5 grains per 100 cubic foot and a density of natural gas of 0.045lb/scf) as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value. After the initial emissions compliance tests are conducted, the SO₂ emissions factor for this combustion turbine determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions value (annual) to the annual hours of operation as recorded per A.III above.

- i. Emission Limitation: Total OC emissions from this emissions unit shall not exceed 0.46 lb/hr and 1.71 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0⁰ F for hourly emissions or 55.65 mmBtu/hr at 55⁰F for annual emissions) by an emissions factor of 0.007 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions value (annual) to the annual hours of operation as recorded per A.III above.

- j. Emission Limitation: NO_x emissions from this emission unit shall not exceed 7.03 lbs/hr and 26.28 TPY.

Applicable Compliance Method: Compliance with these emission

Emissions Unit ID: B017

limitations shall be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NOx control system to determine an hourly emissions value. After the initial emissions compliance tests are conducted, the NOx emissions factor for this combustion turbine determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions value (annual) to the annual hours of operation as recorded per A.III above.

- k. Emission Limitation: CO emissions from this emissions unit shall not exceed 8.57 lbs/hr and 25.49 TPY.

Applicable Compliance Method: Compliance with these emission limitations shall be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0° F for hourly emissions or 55.65 mmBtu/hr at 55° F for annual emissions) by an emissions factor of 0.11 lb/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 3.1, Table 3.1-1 (10/96), to determine an hourly emissions value. After the initial emissions compliance tests are conducted, the CO emissions factor for this combustion turbine determined by those tests shall be used to calculate the hourly emissions value for this emissions unit. Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions value (annual) to the annual hours of operation as recorded per A.III above.

2. Emissions Testing Requirement (B017):

Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of this emissions unit (per 40 CFR 60.8), the permittee shall conduct, or have conducted, initial performance/emissions compliance testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted prior to the issuance of a Permit to Operate for emissions unit B017, and within 60 days of the initial startup of this combustion turbine/electric generation unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x SO₂ , and CO.
- c. The following test method(s) shall be employed to demonstrate compliance with the

Modification Issued: 8/6/2002

allowable mass emission rate(s): for NO_x and SO₂, Method 20 of 40 CFR Part 60, Appendix A [as specified for NSPS emissions units in 40 CFR 60.335(c)(3)]; and for CO, Method 10 of 40 CFR Part 60, Appendix A; Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d. The SO_x and NO_x tests shall be conducted while the combustion turbine portion of this emissions unit is operating at or near 30, 50, 75 and 100% of peak load (in accordance with 40 CFR 60.8 and 40 CFR Part 60, Subpart GG) or at or near 4 points in the normal operating range of the gas turbine, including the minimum point in the range and peak load.
- e. This emissions unit shall be tested for CO emissions to establish a CO emissions factor for the combined cycle system. The CO testing shall be conducted while the combustion turbine portion is operating at or near 30 and 100% of peak load or at or near 2 points including the minimum point in the range load of the normal operating range of the gas turbine.

Emissions Unit ID: **B017**

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

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

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

VI. Miscellaneous Requirements

None

Modification Issued: 8/6/2002

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>

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