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

2/13/2013

Certified Mail

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

Don Easterling
NASA John H. Glenn Research Center - Lewis Field
21000 Brookpark Road
Cleveland, OH 44135-3191

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 1318001169
Permit Number: P0112857
Permit Type: Administrative Modification
County: Cuyahoga

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA)Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to “Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General’s Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/dapc/permitsurvey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Cleveland Division of Air Quality at (216)664-2297 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

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

Cc: U.S. EPA
CDAQ; Pennsylvania; Canada

FINAL

Division of Air Pollution Control
Permit-to-Install
for
NASA John H. Glenn Research Center - Lewis Field

Facility ID:	1318001169
Permit Number:	P0112857
Permit Type:	Administrative Modification
Issued:	2/13/2013
Effective:	2/13/2013

Division of Air Pollution Control
Permit-to-Install
for
NASA John H. Glenn Research Center - Lewis Field

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Authorization

Facility ID:	1318001169
Facility Description:	Research and development center.
Application Number(s):	M0002086
Permit Number:	P0112857
Permit Description:	Administrative modification of PTI #13-04747 (issued final 10/29/2008) for emissions unit P026 (J57 jet engine for PSL Building 124 heating system) to update BAT language; include citation of BAT sunset language; and citation of NOx RACT exemption language.
Permit Type:	Administrative Modification
Permit Fee:	$200.00
Issue Date:	2/13/2013
Effective Date:	2/13/2013

This document constitutes issuance to:

NASA John H. Glenn Research Center - Lewis Field
21000 Brookpark Road
Cleveland, OH 44135-3191

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

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

Cleveland Division of Air Quality
2nd Floor
75 Erieview Plaza
Cleveland, OH 44114
(216)664-2297

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0112857
Permit Description: Administrative modification of PTI #13-04747 (issued final 10/29/2008) for emissions unit P026 (J57 jet engine for PSL Building 124 heating system) to update BAT language; include citation of BAT sunset language; and citation of NOx RACT exemption language.

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

Emissions Unit ID:	**P026**
Company Equipment ID:	PSL 124 Preheater
Superseded Permit Number:	13-04747
General Permit Category and Type:	Not Applicable

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

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

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

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

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

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

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

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

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

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

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

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

2. Severability Clause

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

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

3. General Requirements

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

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

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

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

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

4. Monitoring and Related Record Keeping and Reporting Requirements

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

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

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

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

(4) The analytical techniques or methods used.

(5) The results of such analyses.

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

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

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

(1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Cleveland Division of Air Quality.

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

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

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

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

5. Scheduled Maintenance/Malfunction Reporting

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

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

6. Compliance Requirements

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

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

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

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

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

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

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

d) The permittee shall submit progress reports to the Cleveland Division of Air Quality concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

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

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

7. Best Available Technology

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

8. Air Pollution Nuisance

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

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Cleveland Division of Air Quality.

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 Cleveland Division of Air Quality. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

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

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

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

b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

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

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

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

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

12. Permit-To-Operate Application

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

13. Construction Compliance Certification

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

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

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

14. Public Disclosure

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

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

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

16. Fees

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

17. Permit Transfers

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

18. Risk Management Plans

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

19. Title IV Provisions

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

B. Facility-Wide Terms and Conditions

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

   a) None.

C. Emissions Unit Terms and Conditions

1. P026, PSL 124 Preheater

Operations, Property and/or Equipment Description:

J57 jet engine (replacement for engine No. 1) for PSL Building 124 Heating System

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001 PTI 13-04747 issued 10/29/2008	Nitrogen oxide (NOx) emissions shall not exceed 118.2 pounds per hour. Sulfur dioxide (SO_2) emissions shall not exceed 104 pounds per hour. See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Particulate emissions (PE) shall not exceed 8.52 tons per year (TPY). Volatile organic compound (VOC) emissions shall not exceed 2.57 TPY. Carbon monoxide (CO) emissions shall not exceed 5.54 TPY. See b)(2)b. below.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/2006	See b)(2)c. below.
d.	OAC rule 3745-31-05(D)(1)	See b)(2)d. and c)(2) below.
e.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed twenty per cent opacity, as a six-minute average, except as provided by rule.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	OAC rule 3745-17-11(B)(4)	PE from the turbine's exhaust shall not exceed 0.040 lb/mmBtu of actual heat input
g.	OAC rule 3745-18-06(F)	SO_2 emissions shall not exceed 0.5 lb/mmBtu actual heat input.
h.	OAC rule 3745-31-10(A)(1) "Future Projected Actual" emissions	See b)(2)e. below.

(2) Additional Terms and Conditions

a. The hourly emission limit was 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 short term emissions limitation.

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

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM, VOC, and CO emissions from this air contaminant source since the calculated annual emissions rates for these pollutants are less than 10 TPY taking into account the federally enforceable limits under OAC rule 3745-31-05(D) and the following voluntary restriction:

i. Annual jet fuel usage shall not exceed 800,000 gallons

The permittee has proposed a federally enforceable voluntary restriction on the annual jet fuel usage to ensure that future projected actual emissions will not cause an increase above the major modification thresholds.

d. The total, combined mass emissions from this emissions unit as a rolling, 12-month summation, shall not exceed the following:

NOx 23.63 TPY;

SO_2 20.8 TPY;

PM 8.52 TPY (includes both PM_{10} and $PM_{2.5}$);

CO 5.54 TPY; and

VOC 2.57 TPY.

e. The permittee has proposed that the amount of emissions increase, which is the difference between the future projected actual emissions and current actual emissions, as a result of this project will be less than 100 tons CO/year, 40 tons NOx/year, 40 tons SO_2/year, 15 tons PM_{10}/year, 10 tons $PM_{2.5}$/year, and 40 tons VOC/year. In accordance with OAC rule 3745-31-10(A)(3), the permittee will have to maintain records for the next 10 years that demonstrate that the amount of actual emissions increase stays below these major modification thresholds.

c) This emissions unit is exempt from the permitting requirements required under OAC rule 3745-110-03 as specified by OAC rules 3745-110-03(J)(11) and 3745-110-03(J)(12).Operational Restrictions

(1) The permittee shall burn only commercially available naptha and distillate-based jet fuels (i.e., no experimental jet fuels) in this emissions unit.

(2) The amount of commercially available naptha and distillate-based jet fuel burned in this emissions unit shall not exceed 800,000 gallons per year based upon a rolling, 12-month summation of the monthly gallon usage amounts.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall record and maintain monthly records of the name and/or identification number of each fuel used.

(2) The permittee shall maintain monthly records of the following information:

a. the amount of fuel consumed for each month; and

b. the rolling, 12-month summation of the fuel consumed.

(3) In accordance with OAC rule 3745-31-10(A)(3), the permittee shall maintain annual records for ten (10) years after the issuance of this permit of the following:

a. the number of gallons of jet fuel consumed;

b. the total annual NOx, VOC, CO, PM_{10}, and $PM_{2.5}$ (using factor for PM_{10}) emissions for this emissions unit, as calculated by multiplying the emissions factors from the IERA-RS-BR-SR-2001-0010 titled UNITED STATES AIR FORCE IERA Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations by the annual gallons of jet fuel consumed; and

c. the total annual SO_2 emissions for this emissions unit as calculated by multiplying the emissions factors from AP-42 for Distillate Oil Fired Stationary Gas Turbine factors (Table 3.1-2a Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines) by the annual gallons of jet fuel consumed.

e) Reporting Requirements

(1) The permittee shall submit deviation (excursion) reports to the Cleveland Division of Air Quality (Cleveland DAQ) that identify each day when a fuel other than commercially available naptha and distillate-based jet fuel was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

(2) The permittee shall submit quarterly deviation (excursion) reports to the Cleveland DAQ which identify all exceedances of the rolling, 12-month limitation on the amount of fuel consumption.

These reports shall be submitted in accordance with the reporting requirements specified in the Standard Terms and Conditions of this permit.

(3) In accordance with OAC rule 3745-31-10(A)(5), the permittee shall submit a deviation report to the Cleveland DAQ if the actual annual emissions, in tons/year, exceed the baseline actual emissions by a significant amount for CO, NOx, PM_{10}, $PM_{2.5}$, SO_2, and VOC, as noted in b)(2)d. and b)(2)e. above, and if such emissions differ from the preconstruction projection as documented and maintained pursuant to OAC rule 3745-31-10(A)(1)(c). Such report shall be submitted within 60 days after the end of such year. This condition will remain in effect for ten years after the issuance date of this permit.

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

f) Testing Requirements

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

a. <u>Emission Limitation</u>:

NOx emissions shall not exceed 118.2 pounds per hour.

<u>Applicable Compliance Method</u>:
The short term emission limitation was determined by multiplying the worst case scenario emissions factor for NOx (59.0824 lbs/1,000 gallons of fuel burned) by

the maximum fuel consumption rate of the unit (2,000 gallons/hour). Emissions factor for Nitrogen Oxides - 59.0824 lbs/1,000 gallons, taken from IERA-RS-BR-SR-2001-0010 titled UNITED STATES AIR FORCE IERA Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations.

b. Emission Limitation:

SO_2 emissions shall not exceed 104 pounds per hour.

Applicable Compliance Method:
The short term emission limitation was determined by multiplying the worst case scenario emissions factor for SO_2 (52 lbs/1,000 gallons of fuel burned) by the maximum fuel consumption rate of the unit (2,000 gallons/hour).

The emission factor for SO_2 (52 lbs/1,000 gallons), was taken from AP-42 for Distillate Oil Fired Stationary Gas Turbine factors (Table 3.1-2a Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines). This factor was converted from the AP-42 for the worst case fuel with a sulfur content of 0.4%, heat content of 18,400 Btu/lb, and density of 7 lbs/gallon. The AP-42 factor is 1.01(S) lb SO_2/mmBtu where S is the sulfur content of the fuel. Using 0.4 for the sulfur content gives an emission factor of 0.404 lb SO_2/mmBtu.

This factor is converted as follows:

0.404 lb SO_2/mmBtu x 0.0184 mmBtu/lb X 7 lbs/gal x 1,000 gal/1,000 gal = 52 lbs SO_2/1,000 gallons

c. Emission Limitation:

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

Applicable Compliance Method:
Compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Method 9.

d. Emission Limitation:

PE shall not exceed 0.040 lb/mmBtu.

Applicable Compliance Method:
The short term emission limitation was determined by dividing the worst case scenario emissions factor for PM (21.29 lbs/1,000 gallons of fuel burned) by the heat content of the fuel (125,000 mmBtu/gallon).

Emission factor for PM: See Miscellaneous Requirements: g)(1)a.

e. Emission Limitation:

SO_2 emissions shall not exceed 0.5 lbs/mmBtu actual heat input.

Applicable Compliance Method:

The short term emission limitation was determined by dividing the worst case scenario emissions factor for SO_2 (52 lbs/1,000 gallons of fuel burned) by the heat content of the fuel (125,000 mmBtu/gallon).

f. Emission Limitation:

NOx emissions shall not exceed 23.63 TPY.

Applicable Compliance Methods:
Compliance shall be determined by the record keeping and reporting requirements in d) and e) above.

Compliance with the annual allowable NOx emission rate shall be determined by multiplying the NOx emission factor (lbs/1,000 gal) times the fuel usage for each month (gallons/month) summed over the most recent 12-month period times (1 ton/2,000 pounds)

g. Emission Limitation:

SO_2 emissions shall not exceed 20.8 TPY based upon a rolling, 12-month summation.

Applicable Compliance Methods**:**
Compliance shall be determined by the record keeping and reporting requirements in d) and e) above.

Compliance with the allowable SO_2 emission rate shall be determined by multiplying the SO_2 emission factor (lbs/1,000 gallon) times the fuel usage for each month (gallons/month) summed over the most recent 12-month period times (1 ton/2,000 pounds).

The emission factor for SO_2 (52 pounds/1,000 gallons), was taken from AP-42 for Distillate Oil Fired Stationary Gas Turbine factors (Table 3.1-2a Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines).

h. Emission Limitation:

PM emissions shall not exceed 8.52 TPY based upon a rolling, 12-month summation.

Applicable Compliance Methods:
Compliance shall be determined by the record keeping and reporting requirements in d) and e) above.

Compliance with the allowable PM rate shall be determined by multiplying the PM emission factor (lbs/1,000 gallons) times the fuel usage for each month (gallons/month) summed over the most recent 12-month period times (1 ton/2,000 lbs).

Emission factor for PM: See Miscellaneous Requirements: g)(1)a.

i. Emission Limitation:

CO emissions shall not exceed 5.54 TPY based upon a rolling, 12-month summation.

Applicable Compliance Methods**:**
Compliance shall be determined by the record keeping and reporting requirements in d) and e) above.

Compliance with the allowable CO emission rate shall be determined by multiplying the CO emission factor (lbs/1,000 gallons) times the fuel usage for each month (gallons/month) summed over the most recent 12-month period times (1 ton/2,000 lbs).

Emission factor for CO: See Miscellaneous Requirements g)(1)b.

j. Emission Limitation:

VOC emissions shall not exceed 2.57 TPY based upon a rolling, 12-month summation.

Applicable Compliance Methods:
Compliance shall be determined by the record keeping and reporting requirements in d) and e) above.

Compliance with the allowable VOC emission rate shall be determined by multiplying the VOC emission factor (lbs/1,000 gallons) times the fuel usage for each month (gallons/month) summed over the most recent 12-month period times (1 ton/2,000 lbs).

Emission factor for VOC: See Miscellaneous Requirements g)(1)c.

g) Miscellaneous Requirements

(1) Calculations and Emission Factors:

IERA-RS-BR-SR-2001-0010 titled UNITED STATES AIR FORCE IERA Air Emission Inventory Guidance Document for Mobile Sources at Air Force Installations

a. PM: 21.29 lbs/1,000 gallons

(21.29 lbs/1,000 gal)(800,000 gal/yr)(1 ton/2,000 lbs) = 8.52 TPY

*PM represents PM_{10}/$PM_{2.5}$ combined emissions.

b. CO: 13.5876 lbs/1,000 gallons

(13.8576 lbs/gal)(800,000 gal/yr)(1 ton/2,000 lbs) = 5.54 TPY

c. VOC: 6.422 lbs/1,000 gallons

(6.42 lbs/1,000 gal)(800,000 gal/yr)(1 ton/2,000 lbs) = 2.57 TPY

(2) This emissions unit was installed 12/31/2008.