State of Utah

GARY R. HERBERT
Governor

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Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
Cheryl Heying
Director

DAQE-IN0109740006-09

October 14, 2009

Dave Holden
Williams International
3450 Sam Williams Dr
PO Box 9785
Ogden, UT 84409

Dear Mr. Holden:

Re: Intent to Approve: Modification to Increase Jet Fuel, Propane, and Chemical Usage, as well as Include a Nickel Electroplating Process; Weber County; CDS B; Nonattainment and Maintenance Area
Project Number: N010974-0006

The attached document is the Intent to Approve for the above-referenced project. The Intent to Approve is subject to public review. Any comments received shall be considered before an Approval Order is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an Approval Order. An invoice will follow upon issuance of the final Approval Order.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is Camron Harry, who may be reached at (801) 536-4232.

Sincerely,

Martin D. Gray, Manager
Major New Source Review Section

MDG:CAH:sa

cc: Weber-Morgan Health Department

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

INTENT TO APPROVE: Modification to Increase Jet Fuel, Propane, and Chemical Usage, as well as Include a Nickel Electroplating Process

Prepared By: Camron Harry, Engineer
Phone: (801) 536-4232
Email: caharry@utah.gov

INTENT TO APPROVE NUMBER

DAQE-IN0109740006-09

Date: October 14, 2009

Williams International
Gas Turbine Engine Production Plant

Source Contact:
Mr. Dave Holden, Safety Manager
Phone: (801) 395-6503

Martin D. Gray, Manager
Major New Source Review Section
Utah Division of Air Quality

ABSTRACT

Williams International manufactures gas turbine engines for military and commercial applications at a site near the Ogden Airport in Weber County. Williams International is requesting a modification to their current AO to increase jet fuel, propane, and chemical usage, as well as include a nickel electroplating process. Emissions come from standard machining and precision machining operations, boilers, furnaces, generators, and product testing. The plasma spray booths and acid-etch process are sources of VOCs and HAPs.

Ogden City is a nonattainment area of the NAAQS for PM_{10}, and a maintenance area for CO. NSPS, NESHAP, and MACT regulations do not apply to this source. Title V of the Clean Air Act does not apply to this source.

Emissions, in tons per year, will increase as follows: PM_{10} -0.91, NO_x +1.98, SO_2 +1.36, CO +1.27, VOC +10.45, Formaldehyde +0.08, and all other HAPs +0.33

The changes in emissions will result in the following potential to emit totals, in tons per year, PM_{10}=1.90, NO_x=15.17, SO_2=5.44, CO=10.58, VOC=19.38, Formaldehyde=0.31, and all other HAPs=1.17

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Executive Secretary of the Utah Air Quality Board.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Ogden Standard Examiner on October 20, 2009. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

Name of Permittee:

Williams International
3450 Sam Williams Dr
PO Box 9785
Ogden, UT 84409

Permitted Location:

Williams International: Gas Turbine Engine Production Plant
3450 Sam Williams Drive
Ogden, UT 84401

UTM coordinates: 415,355 m Easting, 4,561,367 m Northing
SIC code: 3724 (Aircraft Engines & Engine Parts)

Section I: GENERAL PROVISIONS

I.1 All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]

I.2 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]

I.3 Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]

I.4 All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of two (2) years. [R307-401]

I.5 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]

I.6 The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring. [R307-150]

I.7 The owner/operator shall comply with UAC R307-107. General Requirements: Unavoidable Breakdowns. [R307-107]

Section II: SPECIAL PROVISIONS

II.A The approved installations shall consist of the following equipment:

II.A.1 **Gas Turbine Engine Manufacturer**
Plant Wide

II.A.2 **Boiler**
One 6.3 MMBtu/hr boiler

II.A.3 **Boiler**
One 2.25 MMBtu/hr boiler

II.A.4 **Boiler**
One 1.35 MMBtu/hr boiler

II.A.5 **Casting**
General casting, machining, and milling operations

II.A.6 **Generator**
One natural gas-fired backup generator rated at 55 Kw

II.A.7 **Generator**
One natural gas-fired backup generator rated at 86 kW

II.A.8 **Heaters**
Natural gas-fired appliances including furnaces, ovens, and comfort heaters

II.A.9 **Miscellaneous**
Miscellaneous propane-powered equipment including three forklifts, four steam cleaning units, water heaters, etc

II.A.10 **Plasma Spray**
Two plasma spray operations controlled by a 32-bag dry dust collector

II.A.11 **Shot Peen**
Two shot peen operations controlled by a dust collector (the dust collector vents indoors and is listed here for informational purposes only)

II.A.12 **Acid Etching**
Two acid etching processes each controlled by packed-bed wet scrubbers
One (1) acid etch line castings scrubber (1,800 acfm flow rate)
One (1) blue acid etch line scrubber (1,800 acfm flow rate)

II.A.13 **Heat Treatment**
Heat treatment area

II.A.14 **Cleaning**
Parts cleaning processes

II.A.15 **Nickel Alloy Process**
Including one (1) scrubber (1,800 acfm for rate)

II.A.16 **Nickel Plating Operation**
Including one (1) scrubber (1,800 acfm for rate)

II.A.17 **Storage Tanks**
Five 10,000 gallon underground jet fuel storage tanks

II.A.18 **Gas Turbine Engine**
Five gas turbine engine cells

II.A.19 **Welding**
Welding equipment

II.B Requirements and Limitations

II.B.1 **Gas Turbine Engine Manufacturing Plant**

II.B.1.a Visible emissions from any stationary point source or fugitive emission source associated with the installation of the source or with the control facilities shall not exceed the following values:

A. Plasma spray operation stack - 10% opacity

B. All boiler and fuel burning furnace stacks - 10% opacity

C. Engine test cell stacks - 20% opacity

D. All scrubbers - 15% opacity

E. All other emission points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. Visible emissions from mobile sources and intermittent sources shall use procedures similar to Method 9, but the requirement for observations to be made at 15-second intervals over a six-minute period shall not apply. Any time interval with no visible emission shall not be included. [R307-201-3]

II.B.1.b The following consumption limits shall not be exceeded:

A. 200,000 gallons of jet fuel consumed per rolling 12-month total

B. 130,000,000 cubic feet of natural gas consumed per rolling 12-month total

C. 4,000 gallons of propane consumed per rolling 12-month total

To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the twentieth day of each month using data from the previous 12 months. Consumption shall be determined by examination of fuel supplier billing records. The records of consumption shall be kept on a monthly basis. Records of consumption/production shall be kept for all periods when the plant is in operation. [R307-401-8]

II.B.1.c The owner/operator shall use only natural gas or propane as fuel in the boilers and other fuel burning equipment, excluding jet engines. If any other fuel is to be used, an AO shall be required. [R307-401]

II.B.1.d Owner/Operator shall notify the Executive Secretary in writing when the installation of the new equipment listed in Condition II.A has been completed and is operational. To ensure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If the construction and/or installation has not been completed within 18 months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time, the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO. [R307-401-18]

II.B.1.e The owner/operator shall install, calibrate, maintain, and operate monitoring devices for daily measurement of the change in pressure of the stream through the scrubbers and dust collectors. The monitoring devices shall be certified by the manufacturer and shall be accurate within plus or minus 0.5 inch of water gauge and must be calibrated on an annual basis according to the manufacturer's instructions. Continuous recording for the monitoring devices is not required, however, daily records of readings shall be maintained. [R307-150]

II.B.2 **HAPs Limits**

II.B.2.a The plant wide emissions of the following chromium compounds shall not exceed the following values:

A. Trivalent chromium compounds: 1.42 lbs per rolling 12-month total

B. Hexavalent chromium compounds: 7.08 lbs per rolling 12-month total

To determine compliance with a rolling 12-month total, by the first day of each month a new 12-month total shall be calculated using data from the previous 12 months. Monthly calculations shall be made no later than 20 days after the end of each calendar month. Records of consumption shall be kept for all periods when the plant is in operation.

Chromium emissions shall be determined by maintaining a record of Chromium-containing products consumed each month. The record shall include the following data for each material used:

1) Name of the product, such as: Amdry 961, SulzerMetco 136F, Sulf Kote WIMS323C, etc

2) Density of each material used (pounds per gallon)

3) Concentration of chromium compound in each product (percent by weight) used

4) Quantity (lbs or gallons) of each product used

5) The amount of Chromium emitted monthly by each material used shall be calculated by the following procedure:

(%Chromium Compound by Weight/100) x [Density (lb/gal)] x Gal Consumed x 1 ton/2000 lb

Chromium Compound =(% Chromium Compound by Weight/100) x [Density (lb/gal)] x Gal Consumed x 1 ton/2000 lb

6) The amount of trivalent and hexavlent chromium compounds emitted monthly from all products used

7) The amount of any chromium compound-containing products reclaimed shall be similarly quantified and subtracted from the quantities calculated above to provide the monthly total emissions. [R307-401]

II.B.3 **Emergency Generators**

II.B.3.a Emergency generators shall be used for electricity producing operations only during periods when electric power from the public utilities is interrupted, or for regular maintenance of the generators. Records documenting generator usage shall be kept by the owner/operator and shall include the date of use, the duration of usage in hours, and the reason for each usage. [R307-401]

II.B.4 **Plasma Spray Operation**

II.B.4.a The following dust collector operating parameters for the plasma spray operations shall be maintained within the indicated ranges: The pressure drop shall not be less than 2.0 plus or minus 0.5 inches of water or more than 4.0 plus or minus 0.5 inches of water. [R307-401]

II.B.5 **Scrubber Operation**

II.B.5.a The following operating parameters shall be maintained within the indicated ranges:

A. Scrubber - acid-etching line casting: The recirculation liquid flow rate shall not be less than 48 gallons per minute (gpm) or more than 78 gpm.

B. Scrubber - blue acid etch line: The recirculation liquid flow rate shall not be less than 80 gpm or more than 110 gpm.

C. Scrubber - nickel alloy etch line: The recirculation liquid flow rate shall not be less than 48 gpm or more than 78 gpm.

D. Scrubber - nickel plating etch line: The recirculation liquid flow rate shall not be less than 80 gpm or more than 110 gpm. [R307-401]

PERMIT HISTORY

The final AO will be based on the following documents:

Is Derived From	BACT Analysis dated August 13, 2009
Is Derived From	Additional Information dated July 29, 2009
Is Derived From	Additional Information dated July 27, 2009
Is Derived From	NOI dated January 8, 2009
Replaces	DAQE-AN0109740005-08 dated October 13, 2008

ACRONYMS

The following lists commonly used acronyms and their associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by EPA to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CO	Carbon monoxide
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO_x	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM_{10}	Particulate matter less than 10 microns in size
$PM_{2.5}$	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO_2	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds