



State of Utah

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Governor

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Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
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Director

DAQE-IN0107560005-09

November 5, 2009

Matt Armstrong
Northwest Pipeline GP
PO Box 58900
Salt Lake City, UT 84158-0900

Dear Mr. Armstrong:

Re: Intent to Approve: Northwest Pipeline GP has requested a Modification to their Approval Order DAQE-AN0756002-05, to Replace Two Existing Grandfathered Turbines with one Turbine, and to Change an Emergency Generator Engine, Uintah County; CDS B; Attainment Area, MACT (Part 63), NSPS (Part 60)
Project Number: N010756-0005

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 Tad Anderson, who may be reached at (801) 536-4456.

Sincerely,

Martin D. Gray, Manager
Major New Source Review Section

MDG:TA:kw

cc: Mike Owens
TriCounty Health Department

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

INTENT TO APPROVE: Northwest Pipeline GP has Requested a Modification to their Approval Order DAQE-AN0756002-05, to Replace Two Existing Grandfathered Turbines with one Turbine, and to Change an Emergency Generator Engine

**Prepared By: Tad Anderson, Engineer
Phone: (801) 536-4456
Email: tdanderson@utah.gov**

INTENT TO APPROVE NUMBER

DAQE-IN0107560005-09

Date: November 5, 2009

**Northwest Pipeline GP
Vernal Compressor Station (Grand Father Equipment)**

**Source Contact:
Mr. Matt Armstrong, Environmental Specialist
Phone: (801) 584-6354**

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

ABSTRACT

Northwest Pipeline GP has requested a modification to DAQE-AN0756002-05, to replace two grandfathered turbines with one new turbine and change a generator engine at the Vernal Compressor Station. The Vernal Compressor Station is located approximately 17 miles north east of Vernal, Utah. The existing Vernal Compressor Station consist of three turbines (two grandfathered), and an emergency generator. The new Vernal Compressor Station will consists of two turbines, an emergency generator, and a fuel gas heater. The emissions increases from the Vernal Compressor Station are as follows: 31.66 Tons Per Year (TPY) of NO_x, 37.61 of TPY CO, 4.77 TPY of SO_x, 10.98 TPY of VOC, and 1.42 TPY of HAPs. The emissions from the Vernal Compressor Station are as follows: 3.46 TPY of PM₁₀, 48.74 TPY of NO_x, 59.61 of TPY CO, 7.32 TPY of SO_x, 16.98 TPY of VOC, and 1.54 TPY of combined HAPs.

The Vernal Compressor Station is located in an attainment area for all criteria pollutants. The new Solar Taurus 70 turbine engine is subject to 40 CFR Part 60, Subparts A and KKKK (Stationary Gas Turbines). The Vernal Compressor Station is classified as a Title V minor source. The estimated emissions from the operation of this source are below the threshold level established in DAQ's modeling for criteria pollutant guidelines. Modeling was conducted for formaldehyde and the concentration was below the Toxic Screening Level.

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 Vernal Express on November 11, 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:

Northwest Pipeline GP
PO Box 58900
Salt Lake City, UT 841580900

Permitted Location:

Vernal Compressor Station
1025 E 7750 N
Vernal, UT 84078

UTM coordinates: 641300 m Easting, 4492000 m Northing
SIC code: 4922 (Natural Gas Transmission)

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 **Plant Wide**
Turbine Compressor Station
- II.A.2 **T-1**
Turbine Compressor (NSPS GG)
Manufacturer: Solar Centaur 40 Turbine
Model: T-4700S
Size: 4,162 hp (at 6,100 feet elev. and 0 degrees F)
Fuel Usage: 358.7 MMscf
- II.A.3 **T-2**
Turbine Compressor (NSPS KKKK)
Manufacturer: Solar Taurus 70
Model: T-10302S
Size: 9,755 hp (at 6,100 feet elev. and 0 degrees F)
Fuel Usage: 662.2 MMscf

II.A.4 **H-1**
Line Heater
Size: 0.5 MMBtu/hr

II.A.5 **EG-1**
Emergency Generator Engine (NSPS JJJJ)
Size: 436 hp

II.B Requirements and Limitations

II.B.1.a Visible emissions from the following emission points shall not exceed the following values:

- A. All natural gas operated equipment with an exhaust stack - 10% opacity
- B. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9. [R307-401]

II.B.2 **Site Requirements**

II.B.2.a Northwest Pipeline GP shall only use natural gas as fuel in the turbines compressor engines, natural gas emergency generator and a line heater. [R307-401]

II.B.2.b Northwest Pipeline GP shall notify the Executive Secretary in writing when the installation of the equipment listed in this permit 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]

II.B.3 **Turbine Compressor Engine Requirements**

II.B.3.a Emissions to the atmosphere at all times from the indicated emission point shall not exceed the following rates and concentrations:

Natural Gas Turbine Compressor, Solar Centaur 40 T-47000S (Existing)

Pollutant

NO _x	3.86 lbs/hr
NO _x	25 ppmvd @15% O ₂
CO	4.69 lbs/hr
CO	50 ppmvd @15% O ₂
Testing	@ and *

Natural Gas Turbine Compressor, Solar Taurus 70 T-10302S (new)

Pollutant

NO _x	7.11 lbs/hr
NO _x	25 ppmvd @15% O ₂
CO	8.66 lbs/hr
CO	50 ppmvd @15% O ₂
Testing	@ and **. [R307-401]

II.B.3.b

A. Testing Status

* The initial testing has already been performed.

** Initial compliance testing is required. The initial test date shall be performed as soon as possible and in no case later than 180 days after the start up of a new emission source, an existing source without an AO, or the granting of an AO to an existing emission source that has not had an initial compliance test performed. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.

@ Test every five years. The Executive Secretary may require testing at any time.

B. Notification

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and binder sampling used for tests that have absorption such as VOCs. Remove binder sampling if it is not needed. A pretest conference shall be held, if directed by the Executive Secretary.

C. Sample Location

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Executive Secretary. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

D. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or other testing methods approved by the Executive Secretary.

E. NO_x

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by

the Executive Secretary.

F. CO

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Executive Secretary.

G. Calculations

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

H. New Source Operation

For a new source/emission point, the production rate during all compliance testing shall be no less than 90% of the production rate listed in this AO. If the maximum AO allowable production rate has not been achieved at the time of the test, the following procedure shall be followed:

- 1) Testing shall be at no less than 90% of the production rate achieved to date.
- 2) If the test is passed, the new maximum allowable production rate shall be 110% of the tested achieved rate, but not more than the maximum allowable production rate. This new allowable maximum production rate shall remain in effect until successfully tested at a higher rate.
- 3) The owner/operator shall request a higher production rate when necessary. Testing at no less than 90% of the higher rate shall be conducted. A new maximum production rate (110% of the new rate) will then be allowed if the test is successful. This process may be repeated until the maximum AO production rate is achieved.

I. Existing Source Operation

For an existing source/emission point, the production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three (3) years. [R307-401]

Section III: APPLICABLE FEDERAL REQUIREMENTS

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

MACT (Part 63), ZZZZ: Recipro. Int. Comb Engine (RICE)

NSPS (Part 60), A: General Provisions

NSPS (Part 60), GG: Stationary Gas Turbines

NSPS (Part 60), KKKK: Stationary Combustion Turbines

NSPS (Part 60), JJJJ: Stationary Spark/Ignit R.I.C.E.

PERMIT HISTORY

The final AO will be based on the following documents:

Is Derived From	Additional information dated October 15, 2009
Is Derived From	Additional Information dated September 9, 2009
Is Derived From	NOI dated July 7, 2009
Supersedes	DAQE-AN0756002-05 dated June 10, 2005

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