



State of Utah

Department of
Environmental Quality

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DIVISION OF AIR QUALITY
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DAQE-IN2524002-04

March 17, 2004

Robert Van Engelenhoven
PacifiCorp
201 South Main, Suite 2200
Salt Lake City, Utah 84111

Dear Mr. Engelenhoven:

Re: Intent to Approve: Approval Order for 1000 MW Natural Gas Turbine Power Plant Near Mona Reservoir, Juab County – CDS A; ATT; NSPS, HAPs, TITLE IV MAJOR, TITLE V MAJOR
Project Code: N2524-002

The attached document is the Intent to Approve (ITA) for the above-referenced project. ITAs are subject to public review. Any comments received shall be considered before an Approval Order is issued.

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. Please direct any technical questions you may have on this project to Mr. John D. Jenks. He may be reached at (801) 536-4459.

Sincerely,

Rusty Ruby, Manager
New Source Review Section

RR:JJ:re

cc: Central Utah Public Health Department
Mike Owens, EPA Region VIII

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**INTENT TO APPROVE: APPROVAL ORDER FOR 525 MW
NATURAL GAS TURBINE POWER**

**Prepared By: John D. Jenks, Engineer
(801) 536-4459
Email: jjenks@utah.gov**

INTENT TO APPROVE NUMBER

DAQE-IN2524002-04

Date: March 17, 2004

**PacifiCorp
Source Contact
Gene Marshall
(801) 220-4402**

**Richard W. Sprott
Executive Secretary
Utah Air Quality Board**

Abstract

Pacificorp submitted a Notice of Intent (NOI) to install and operate the Currant Creek Power Plant in Juab County near Mona, Utah. The power plant would consist of two natural gas-fired turbine generators with heat recovery steam generators with duct burning and a steam turbine. The plant will be capable of producing 525 MW of electricity in combined cycle mode. Additional equipment would include a wet cooling tower, emergency generator, an auxiliary boiler, fire pump, ammonia storage and handling equipment and water treatment and storage. The source is allowed 10 months of simple cycle operation after initial installation, with a requirement to convert to combined cycle operations by the end of that 10-month period. Juab County is an attainment area of the National Ambient Air Quality Standards (NAAQS) for all pollutants. New Source Performance Standards (NSPS), Subparts A, Da, Dc, and Gg, apply to this source. National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Available Control Technology (MACT) regulations do not apply to this source. Title IV of the Clean Air Act applies to this source. Title V of the 1990 Clean Air Act applies to this source, with the requirement that the source submit a Title V application within one year of commencing operation. The emissions, in tons per year, will be as follows: PM₁₀ 101.6, NO_x 344.3, SO₂ 9.2, CO 277.6, VOC 50.9, HAPs 8.8 (including 4.1 tons per year of Formaldehyde) and 1.0 tons per year of H₂SO₄.

The Notice of Intent (NOI) for the above-referenced project has been evaluated and has been found to be consistent with the requirements of the Utah Administrative Code Rule 307 (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 Approval Order (AO) by the Executive Secretary of the Utah Air Quality Board.

A 30-day public comment period will be held in accordance with UAC R307-401-4. A notice of intent to approve will be published in the Salt Lake Tribune on March 21, 2004. During the public comment period the proposal and the evaluation of its impact on air quality will be available for both you and the public to review and comment. A public hearing will be held March 25, 2004 at the Juab County Commission Chambers, Nephi, Utah. Any comments received during the public comment period and during the hearing will be evaluated prior to issuance of the Approval Order.

Please review the proposed AO conditions during this period and make any comments you may have. The proposed conditions of the AO may be changed as a result of the comments received. Unless changed, the AO will be based upon the following conditions:

General Conditions:

1. This Approval Order (AO) applies to the following company:

Corporate Office Location

Pacificorp
Attn: Environmental Services Department
1407 West North Temple, Suite 330
Salt Lake City, Utah 84116

Phone Number (801) 220-2235

Fax Number (801) 220-4307

The equipment listed in this AO shall be operated at the following location:

Pacificorp – Currant Creek Plant
Attn: Plant Manager
2096 West 300 North
Mona, UT 84645

Universal Transverse Mercator (UTM) Coordinate System: UTM Datum NAD27
4,408.1 kilometers Northing, 423.6 kilometers Easting, Zone 12

2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
5. All records referenced in this AO or in applicable NSPS and/or NESHAP and/or MACT standards, 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 five-year period prior to the date of the request. Records shall be kept for the following minimum periods:
 - A. Emission inventories Five years from the due date of each emission statement or until the next inventory is due, whichever is longer.
 - B. All other records Five years
6. Pacificorp shall install and operate the Currant Creek Power Project and shall conduct its operations of the same in accordance with the terms and conditions of this AO, which was written pursuant to Pacificorp's Notice of Intent submitted to the Division of Air Quality (DAQ) on August 6, 2003 and additional information submitted to the DAQ on September 26, 2003; October 20, 2003; October 29, 2003; December 2, 2003; December 16, 2003; and February 3, 2004.
7. The approved installations shall consist of the following equipment or equivalent*:
 - A. Two (2) General Electric Frame 7FA natural gas-fired turbine generator sets (140 MW nominal capacity each in simple cycle mode)
140' simple cycle bypass stacks (as measured from the base of the stack)
 - B. Two (2) heat recovery steam generators (HRSGs) each equipped with 500 MMBtu/hr (HHV) duct burners
165' HRSG main stacks (as measured from the base of the stack)
Selective Catalytic Reduction (SCR) system with ammonia injection

- C. One (1) steam turbine (250 MW nominal capacity in combined cycle mode)**
- D. One (1) natural gas-fired 66 MMBtu/hr auxiliary boiler
50' boiler stack (as measured from the base of the stack)
- E. Two (2) natural gas-fired fuel heaters
- F. 800 kW diesel-fired emergency generator
- G. One (1) 250 hp diesel-fired fire pump
- H. One (1) air-cooled condenser**
- I. One (1) mechanical draft cooling tower with drift elimination
- J. Water treatment and storage facilities**
- K. Aqueous ammonia storage and handling equipment**

* Equivalency shall be determined by the Executive Secretary.

** These items are listed for informational purposes only, there are no emissions from these items.

- 8. The SCR system shall be operated at all times that the combustion turbines are operated in combined cycle mode. All emissions from the combustion turbines shall be passed through the SCR system during combined cycle operation.
- 9. PacifiCorp shall notify the Executive Secretary in writing when the installation of the equipment listed in Condition #7 has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If construction and/or installation has not been completed within eighteen 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 in accordance with R307-401-11.

Limitations and Tests Procedures

- 10. Emissions to the atmosphere at all times from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Each Bypass Stack (when operating in simple cycle mode)

<u>Pollutant</u>	<u>Limitations at 15% O₂*</u>	<u>Averaging Period</u>
PM ₁₀	10.8 lb/hour	18-hour
NO _x	9.0 ppmvd (54.0 lb/hr)	18-hour
CO.....	7.8 ppmvd (28.0 lb/hr)	24-hour

Source: Each HRSG Stack (when operating in combined cycle mode)

<u>Pollutant</u>	<u>Limitations at 15% O₂*</u>	<u>Averaging Period</u>
PM ₁₀	13.3 lb/hour	24-hour
NO _x	2.25 ppmvd (17.0 lb/hr)	24-hour
CO.....	4.0 ppmvd (17.5 lb/hr)	24-hour
CO (with duct firing).....	10.5 ppmvd (45.6 lb/hr)	24-hour

* Under full load, steady state operation, excluding startups and shutdowns

11. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

A.	<u>Emissions Point</u>	<u>Pollutant</u>	<u>Testing Status</u>	<u>Test Frequency</u>
	Bypass Stacks or HRSG Stacks	PM ₁₀	*	\$
		NO _x	*	#
		CO	*	#

B. Testing Status (To be applied to the source listed above)

* 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 annually

Compliance shall be demonstrated through use of a Continuous Emissions Monitoring System (CEM) as outlined in Conditions #13.A and #20 below. The Executive Secretary may require testing at any time.

C. 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 procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

D. 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.

E. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO₂ Removal & PM, SO₂, NO_x Rates from Electric Utility Steam Generators" or other testing methods approved by the Executive Secretary.

F. PM₁₀

For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201, 201a and 202 or other testing methods approved by the Executive Secretary. All particulate captured shall be considered PM₁₀. The back half condensibles shall be used for compliance demonstration as well as for inventory purposes.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, or 5e as appropriate, or other testing methods approved by the Executive Secretary. The back half condensibles shall also be tested using the method specified by the Executive Secretary. The portion of the front half of the catch considered PM₁₀ shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Executive Secretary.

G. Nitrogen Oxides (NO_x)

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

H. Carbon Monoxide (CO)

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

I. 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.

J. 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.

K. 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.

12. Visible emissions from the following emission points shall not exceed the following values:

- A. All natural gas combustion exhaust stacks - 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.

13. Pacificorp shall operate the Currant Creek Plant according to the following schedule:

- A. For the period through 10 months following commencing of initial operation, the plant can be operated in simple cycle mode. While operating in simple cycle mode the plant shall not exceed 18 hours of operation per day per turbine generator set. During the other 6 hours of that day there shall be no emissions from the Bypass Stack associated with that turbine generator set. Hours of operation shall be determined by supervisor monitoring and the daily maintaining of an operations log. During this period, compliance with the NO_x and CO limitations expressed in Condition #10 shall be monitored through use of a Continuous Emissions Monitoring System (CEM) as outlined in Condition #20.

- B. Beginning no later than 10 months post initial operation, the plant shall be operated in combined cycle mode. The Bypass Stacks shall only be used for periods of upset or breakdown conditions.
- 14. Emergency generators shall be used for electricity producing operation only during the periods when electric power from the public utilities is interrupted, or for regular maintenance of the generators. Records documenting generator usage shall be kept in a log and they shall show the date the generator was used, the duration in hours of the generator usage, and the reason for each generator usage

Fuels

- 15. The owner/operator shall use natural gas as fuel in the combustion turbines, duct burners, fuel heaters and auxiliary boiler.
- 16. The owner/operator shall use #1, #2 or a combination of #1 and #2 diesel fuel in the emergency generators and fire pump.
- 17. The sulfur content of any fuel oil or diesel burned shall not exceed 0.50 percent by weight. The sulfur content shall be determined by ASTM Method D-4294-89 or approved equivalent. Certification of used oil shall be either by Pacificorp's own testing or test reports from the used oil fuel marketer. Certification of other fuels shall be either by Pacificorp's own testing or test reports from the fuel marketer.

Federal Limitations and Requirements

- 18. In addition to the requirements of this AO, all applicable provisions of 40 CFR 60, New Source Performance Standards (NSPS) Subpart A, 40 CFR 60.1 to 60.18 and Subpart GG, 40 CFR 60.330 to 60.334 (Standards of Performance for Stationary Gas Turbines) and Subpart Da, 40 CFR 60.40a to 60.49a (Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978), and Subpart Dc, 40 CFR 60.40c to 60.49c (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units), apply to this installation.
- 19. In addition to the requirements of this AO, all applicable provisions of 40 CFR Part 72, 73, 75, 76, 77 and 78, Federal Regulations for the Acid Rain Program under Clean Air Act Title IV apply to this installation.

Monitoring - Continuous Emissions Monitoring

- 20. Pacificorp shall install, calibrate, maintain, and operate a continuous emissions monitoring system on the HRSG stacks. Pacificorp shall record the output of the system, for measuring the NO_x emissions and the CO emissions. The monitoring system shall comply with all applicable sections of R307-170; 40 CFR 60.13; and 40 CFR 60, Appendix B.

All continuous emissions monitoring devices as required in federal regulations and state rules shall be installed and operational prior to placing the affected source in operation.

Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall

continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section R307-170.

Records & Miscellaneous

- 21. 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 Approval Order 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.
- 22. The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring.
- 23. The owner/operator shall comply with R307-107. General Requirements: Unavoidable Breakdowns.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

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 R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

http://airquality.utah.gov/aq_home.htm

The annual emissions estimations below are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, maintenance area, and Title V source requirements of the R307. They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for this source are currently calculated at the following values:

	<u>Pollutant</u>	<u>Tons/yr</u>
A.	PM ₁₀	101.6
B.	SO ₂	9.2
C.	NO _x	344.3
D.	NO _x (combined cycle mode).....	140.3
E.	CO.....	277.6
F.	VOC.....	50.9
G.	H ₂ SO ₄	1.0
H.	HAPs	
	Formaldehyde.....	4.1
	Total HAPs.....	8.8

The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final Approval Order.

Sincerely,

Rusty Ruby, Manager
New Source Review Section