



Air Quality Permitting Statement of Basis

December 23, 2004

Permit to Construct No. P-040031

**Idaho Power Evander Andrews Power Complex
Mountain Home**

Facility ID No. 039-00024

Prepared by:

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AIR QUALITY DIVISION**

FINAL PERMIT

Acronyms, Units, and Chemical Nomenclatures

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
Btu	British thermal unit
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gpm	gallons per minute
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
m	meter(s)
MMBtu	million British thermal units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/yr	tons per year
µg/m ³	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct.

2. FACILITY DESCRIPTION

The Idaho Power Company (Idaho Power) operates the Evander Andrews Power Complex located near Mountain Home Idaho. The facility description is given as follows, and it is not changed as a result of this PTC revision. This is an electric power generating facility which utilizes two advanced Siemens-Westinghouse (S-W) 251B12A, simple cycle combustion turbines and generators. The heat input for each turbine is approximately 508 MMBtu/hr and the generating capacity is approximately 52 megawatts each. Both turbines are identical in design, fired only with natural gas, and are equipped with dry low NO_x (DLN) burners. DLN burners combust a leaner mixture of fuel and air, thereby lowering the peak temperature and NO_x emissions. During warm weather, evaporative cooling and inlet air fogging may be used to cool the turbine inlet air. Natural gas flow rates are measured continuously by a certified fuel flow monitoring system. Facility operations are monitored by an integrated microprocessor-based control system. Each combustion turbine is equipped with a continuous emissions monitoring system (CEMS) to measure NO_x, carbon monoxide (CO), and diluent oxygen (O₂). Also included is a data acquisition and handling system (DAHS) for data acquisition and analysis. These data systems are used during all facility operations, including startup and shutdown. Ancillary units at the facility include a natural gas-fired heater to heat the natural gas prior to combustion and a diesel-fired emergency fire pump.

The following is a list of the sources at the facility:

Gas Turbines:	Siemens-Westinghouse (S-W) 251B12A
Heat Input:	508 MMBtu/hr each, natural gas
Fuel Heater:	2.2 MMBtu/hr, natural gas
Emergency Fire Pump:	185 horsepower diesel, 500 hr/yr

3. FACILITY / AREA CLASSIFICATION

The facility and area classifications for the Evander Andrews Power Complex are given as follows. None of this information is changed as a result of this permit revision. The facility is defined by IDAPA 58.01.01.008.10 as a major facility for Tier I permitting purposes because the facility's potential to emit (PTE) NO_x and CO exceed 100 tons per year. It is not a designated facility as defined in IDAPA 58.01.01.006.27. The facility is not subject to Prevention of Significant Deterioration (PSD) requirements since the potential to emit is less than 250 T/yr. The SIC is 4911 which OSHA describes as *establishments engaged in the generation, transmission, and/or distribution of electric energy for sale*. The AIRS facility classification is "A," because the actual or controlled potentials to emit (PTE) for NO_x and CO are greater than 100 T/yr.

The facility is located within AQCR Region No. 63 and UTM zone 11. The facility is located in Elmore County which is designated as an attainment or unclassifiable area for all criteria pollutants (PM₁₀, CO, NO_x, SO₂, lead, and ozone). There are no Class I areas within 10 km of the facility.

The AIRS information which defines the classification for each regulated air pollutant at the Evander Andrews Power Complex is not changed as a result of this permit revision. This required information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

The purpose of this PTC revision is to streamline permit conditions for two reasons:

- For consistency with the permits of other facilities with gas turbines
- To streamline the PTC requirements prior to issuance of a Tier I operating permit

4.1 Application Chronology

September 30, 2004	DEQ received a PTC revision request from Tetra Tech EM Inc. on behalf of Idaho Power
October 25, 2004	DEQ received additional application information from Idaho Power
October 27, 2004	DEQ declared the PTC application was complete

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 Equipment Listing

The equipment listing is unchanged by this permit revision.

5.2 Emissions Inventory

The emissions inventory for the Evander Andrews Power Complex is unchanged by this permit revision. Emissions will neither increase nor decrease.

5.3 Modeling

Modeling is not necessary for this PTC revision since no increase in allowable emissions will occur.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC revision.

IDAPA 58.01.01.201, 209.04 Permit to Construct Required

In order to change existing permit conditions, a permit revision is required. Under the revised permit, the facility will continue to meet all applicable requirements of sections 200 through 228 of the *Rules*.

IDAPA 58.01.01.203.02, 575 National Ambient Air Quality Standards (NAAQS)

Since emissions will not increase as a result of this permit revision, the existing NAAQS analysis remains valid and unchanged. A new NAAQS analysis is not necessary.

IDAPA 58.01.01.203.03, 210 Toxic Air Pollutants (TAP)

Since TAP emissions will not increase as a result of this permit revision, the existing TAP analysis remains valid and unchanged. A new TAP analysis is not necessary.

IDAPA 58.01.01.590New Source Performance Standards (NSPS), 40 CFR 60 Subpart GG Revisions to 40 CFR Part 60 Subpart GG were issued by the EPA as a final rule on July 8, 2004. The revised regulatory analysis for Subpart GG is provided below.

60.330, Applicability and designation of affected facility. The provisions of Subpart GG apply to the turbine since the heat input at peak load is greater than 10 MMBtu/hr.

60.332, Standard for Nitrogen Oxides. The NO_x emission standard under 60.332(a)(1) applies, and the standard under 60.332(a)(2) does not apply per 60.332(b). This standard was not changed under the revision to the regulation and it continues to be 142 ppm by volume at 15% oxygen and on a dry basis. It is noted that the F-value is accepted to be zero, and the permittee has not chosen to apply a NO_x emission allowance for fuel-bound nitrogen as defined in 60.332(a)(4). The requirements under 60.332(c), (d), (e), (f), (g), (h), (i), (j), and (l) do not apply to this source.

60.333, Standard for Sulfur Dioxide. The SO₂ emission standard under 60.333 applies, and the facility needs to comply with either 60.333(a) or 60.333(b). For this facility, the latter requirement is the chosen option which means that no fuel shall be burned in the turbine which contains total sulfur in excess of 0.8% by weight (8000ppmw).

60.334, Monitoring of Operations. Under 60.334(c), for purposes of determining excess NO_x emissions the facility may use a CEMS that meets the requirements of 60.334(b). With regard to sulfur content monitoring for the turbine fuel, 60.334(h)(4) applies; in addition, 60.334(h)(1) applies, except as provided in 60.334(h)(3). The frequency for determining the sulfur content of the fuel is specified by 60.334(i), including new requirements for custom fuel monitoring schedules. The excess emission reporting requirements under 60.334(j)(1)(iii), (j)(2)(i) and (j)(5) apply. For purposes of reporting excess NO_x emissions under 60.334, an exceedance shall be any emissions from the gas turbine stack that exceed 142 ppmvd at 15% oxygen. The emergency fuel reporting requirement under 60.332(k) applies, however, an emergency fuel has not been identified for this source, and therefore this requirement was not included in the permit.

The following requirements under 60.334 are not applicable to this source. 60.334(a), 60.334(b) (except as applicable under 60.334(c)), and 60.334(d) do not apply since the turbine does not use water or steam injection to control NO_x emissions. 60.334(e) and (f) don't apply since construction occurred before July 8, 2004. 60.334(i)(1) doesn't apply since oil is not used for fuel. The excess emission reporting requirements under 60.334(j)(1)(i), (ii) and (iv), and under 60.334(j)(2)(ii) and (iii) do not apply. The ice fog requirements under 60.334(j)(3) don't apply because 60.332(f) doesn't apply. There are several fuel-bound nitrogen monitoring requirements in 60.334(h), (i), and (j), and these do not apply since the permittee has chosen not to use a NO_x emission allowance for fuel-bound nitrogen as defined in 60.332(a)(4).

60.335, Test Methods and Procedures. When testing is required, the test methods and procedures given under 60.335 shall be followed.

5.5 Fee Review

DEQ received a \$1,000 PTC application fee (IDAPA 58.01.01.224) from Idaho Power on October 7, 2004 and the \$250.00 PTC processing fee (IDAPA 58.01.01.225) on November 29, 2004. The processing fee is \$250.00 because no engineering analysis is required for the PTC modification, and there is no change in emissions associated with this modification (see Table 5.1). The balance of PTC fees due is \$0.00.

The Evander Andrews Power Complex is a major facility as defined in IDAPA 58.01.01.008.10. Therefore, Tier I registration fees are applicable in accordance with IDAPA 58.01.01.387. As of November 19, 2004, the current balance due for Tier I fees is \$0.00.

Table 5.1 PTC PROCESSING FEE TABLE

Pollutant	Annual Emissions (Tons/yr)	Annual Emissions Threshold (Tons/yr)	Annual Emissions Charge (\$/Tons)
NO _x	0.0	0	0.0
SO ₂	0.0	0	0.0
CO	0.0	0	0.0
PM ₁₀	0.0	0	0.0
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0	0.0
Fee Due	\$ 250.00		

6. PERMIT CONDITIONS

This section of the Statement of Basis specifically outlines changes made to PTC No. 039-00024, dated August 21, 2002, (hereafter referred to as the August 21, 2002 permit). Where appropriate, it provides a regulatory analysis of the applicable air quality rules. Where permit condition numbers are given, these numbers correspond to the revised PTC, unless stated otherwise.

PTC Page 1

The project name was changed to “Evander Andrews Power Complex”, the information for the responsible official and facility contact were changed and the facility location was also changed..

Permit Condition 1.1

The project description was changed to include the correct facility name (Evander Andrews Power Complex).

Permit Condition 1.2

Permit Conditions 1.2, 1.3 and the Appendix in the August 21, 2002 PTC were consolidated into condition 1.2 in the revised PTC. Only the annual limits for NO_x and CO are retained in the PTC. This is because these two are the only pollutants which could potentially exceed a major source threshold for annual emissions (i.e., the 250 ton/yr PSD threshold in this case). With regard to the BACT-type limits specified in ppm, these are not appropriate for this facility since BACT requirements do not apply. With regard to short term pound per hour emission limits, it is apparent that short term emission limits for all criteria pollutants are not necessary based on the margin of compliance shown in the NAAQS compliance demonstration for this facility. For convenient reference, the results of this facility’s NAAQS analysis, as presented in DEQ’s September 11, 2001 Technical Analysis Memorandum are provided in Table 6.1:

Table 6.1 EVANDER ANDREWS POWER COMPLEX NAAQS ANALYSIS RESULTS

Pollutant	Averaging Period	Total Ambient Impact ($\mu\text{g}/\text{m}^3$)	Significant Contribution Level ($\mu\text{g}/\text{m}^3$)	Background Concentration ($\mu\text{g}/\text{m}^3$)	Total Ambient Concentration ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
PM ₁₀	Annual	0.72	1	32.7	33	50
	24-hour	2.51	5	86	89	150
NO ₂	Annual	0.96	1	40	41	100
SO ₂	Annual	0.51	1	18.3	19	80
	24-hour	2.81	5	120	123	365
	3-hour	6.3	25	374	380	1,300
CO	8-hour	306	500	5,130	5436	10,000
	1-hour	883	2000	11,450	12,333	40,000

Permit Condition 1.3

The NSPS NO_x standard specified by 40 CFR 60.332(a)(1) was added to the permit so it is clear that this standard applies to each turbine.

Permit Condition 1.4

Requirements for the turbines and the fire water pump were removed from this permit condition since they do not apply to this equipment.

Permit Condition 1.6, 1.9 and 1.17 of the August 21, 2002 PTC

These permit conditions regarding odors and fugitive dust were removed from the PTC since odors and fugitive dust from this facility are not reasonably expected to occur. It is noted, however, that the odor and fugitive dust rules under IDAPA 58.01.01.776 and 58.01.01.651 will continue to apply regardless of whether or not they are repeated in the PTC. As such, these rules are applicable requirements, and they will be included in the forthcoming Tier I operating permit as a standard Tier I facility-wide permit conditions.

Permit Conditions 1.6 and 1.7

Permit Conditions 1.6 and 1.7 in the revised PTC replace Permit Condition 1.7 in the August 21, 2002 PTC. These two revised permit conditions present the NSPS SO₂ requirements more clearly. In addition, it is noted that as long as pipeline quality natural gas is used, the NAAQS compliance demonstration will remain valid. For compliance purposes, the definition of pipeline natural gas given in 40 CFR Part 75 should be used. Since the margin of compliance with the SO₂ NAAQS is substantial, and sulfur monitoring requirements are included under the NSPS requirements, the one grain per 100 scf sulfur limitation for natural gas it is not necessary and, therefore, it was removed.

Permit Condition 1.9

This condition was added since it is a new requirement/option provided under the July 8, 2004 revision to 40 CFR Part 60 Subpart GG. This revised rule allows a NO_x CEMS to be used for monitoring compliance with the NSPS NO_x standard of 142 ppm. Also, monitoring of NO_x based on a consecutive 12-month basis was added to demonstrate compliance with the annual NO_x emission rate limit.

Permit Condition 1.13 of the August 21, 2002 PTC

This permit condition was deleted. It is no longer necessary to calculate PM₁₀ emissions because a PM₁₀ emissions limit no longer exists. Refer to the information provided for Permit Condition 1.2 above.

Permit Condition 1.14 of the August 21, 2002 PTC

The requirement for NO_x testing under 40 CFR Part 60 Subpart GG was deleted because the initial test requirements under 60.8 and 60.332 have been complied with. It is noted that the general requirement for testing under the NSPS as given by 60.8(a), "at such times as may be required by the Administrator under Section 114 of the Clean Air Act", continues to apply and this will be included in the forthcoming Tier I permit.

Permit Condition 1.14

The fuel monitoring requirements specified in the PTC were revised to be consistent with the July 8, 2004 revision to 40 CFR Part 60 Subpart GG. Since the EPA approved custom fuel monitoring schedule may still be used under the revised rules, this information was not removed from the permit condition.

Permit Condition 1.16 and 1.19

These permit conditions regarding the submittal of test protocols were revised to be consistent with the forthcoming Tier I operating permit conditions which will govern this action upon issuance of the Tier I permit.

Permit Condition 1.19 of the August 21, 2002 PTC

The ambient air quality monitoring conditions were removed from the permit. The requirement to operate this monitoring equipment until March 1, 2004 was met and no further action is required.

Permit Condition 1.21

This permit condition, including the title, was changed so it is more apparent that this requirement pertains to the CEMS reporting requirements under 60.7.

Permit Condition 1.22

Permit Conditions 1.26 and 1.27 in the August 21, 2002 PTC were combined and this information is now presented as Permit Condition 1.22 in the revised permit. Condition 1.22 incorporates the changes included in the July 8, 2004 revision to 40 CFR Part 60 Subpart GG.

Permit Condition 1.30.1 of the August 21, 2002 PTC

This permit condition was deleted from the PTC since Idaho Power already complied with the requirement to submit a Tier I operating permit application.

Permit Condition 1.24

The excess emissions permit condition was changed for consistency with IDAPA 58.01.01.130-36.

PTC General Provisions

The most recent version of the PTC General Provisions was used in the revised permit.

7. PUBLIC COMMENT

An opportunity for public comment period on the PTC application was provided, in accordance with IDAPA 58.01.01.209.01.c., from November 10, 2004 to December 13, 2004. No comments on the application and no requests for a public comment period on DEQ's proposed action have been received. A draft copy of the revised PTC was also provided to the Boise Regional Office on November 22, 2004.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommend that Idaho Power be issued final PTC No. P-040031 for the Evander Andrews Power Complex. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

KH/sd Permit No. P-040031

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