



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007-2935
(602) 771-2300 • www.azdeq.gov



Stephen A. Owens
Director

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

April 6, 2007

Conrad Spencer
Arizona Public Service Company
PO Box 188
Joseph City, AZ 86032

FILE

AQD:PS:CTS: 148780

Dear Mr. Spencer:

Subject: Air Quality Control Significant Permit Revision No. 41787 (to Operating Permit No. 33500)
Electric Generating Plant - Place ID: 447

The Arizona Department of Environmental Quality has received payment of the fee requested. Enclosed is a permit revision for the referenced facility. Per your request during the public comment period, the Department has deleted Condition XIV.B.2 from the public notice version of the permit that specified the operational dates for the low-NO_x burners.

In accordance with Arizona Revised Statutes, §49-430, this permit should be readily available at all times on the premises. Please keep us informed of any changes that would affect your air pollution status during the period of this permit.

You are advised that a permit is a legally enforceable document. If your facility fails to comply with the provisions contained in its permit, you will be subject to enforcement action and could incur civil fines of up to ten thousand dollars per day under A.R.S. §49-463 and/or be subject to criminal penalties in accordance with A.R.S. §49-464.

If you have any questions, please do not hesitate to contact the Permits Section of the Air Quality Division at (602) 771-4490 or me at (602) 771-2308.

Sincerely,

Nancy C. Wrona, Director
Air Quality Division

cc: Kathleen Stewart, EPA Region IX

Encl: Significant Permit Revision No.: 41787

NCW:zfl

Northern Regional Office
1515 East Cedar Avenue • Suite F • Flagstaff, AZ
86004
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ
85701
(520) 628-6733

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9. The nature and cause of the excess emissions: _____

10. If the excess emissions were the result of a malfunction, steps taken to remedy the and malfunction the steps taken to prevent the recurrence of such malfunctions: _____

11. The steps that were or are being taken to limit the excess emissions. If the source's permit contains procedures governing source operations during periods of start-up or malfunction and the excess emissions resulted from start-up or malfunction; a list of the steps taken to comply with the permit procedures: _____

Certification of Truth, Accuracy, and Completeness

By my signature; I, _____, hereby certify that based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

Signature of responsible official: _____ Date: _____ / _____ / _____

Instructions for completing the Excess Emission Report form

1. **Company Name:** The name of your company and the name of the facility if applicable as it appears on your current ADEQ/AQD operating permit.
2. **Permit No.:** Your current ADEQ/AQD operating permit number.
3. **Report Date:** The date on which this report was completed.
4. **Identity of the stack or other emission point where the excess emissions occurred:** A textual description of the stack that the excess emissions were, or are being emitted from. This description may include the stack ID number as designated on your most recent Emissions Inventory submittal.
5. **The identity of the process equipment from which the excess emissions originated:** A description of the point of origin of the pollutant emitted in excess. This may include the point ID number from your most recent Emissions Inventory submittal.
6. **Magnitude of the excess emissions expressed in units of the applicable emissions limitation:** for example; 60% Opacity, 0.899 lbs/MM Btu, 6.5 lbs/ton feed.
7. **Operating data and calculations used in determining the magnitude of the excess emissions:** If surrogate parameters are used to determine emission rates then a description of these surrogate parameters, the emissions factors used to convert them to emission rates, and the equations used to calculate the emissions. A surrogate parameter could be something like combustion chamber temperature used, with the proper factors and equations, to calculate NO₂ emissions.
8. **Date and Time the Excess Emission event began:** When the excess emissions started.
Date and Time the Excess Emission event ceased: When the excess emissions stopped.
Duration or expected duration of excess emissions: How long the excess emissions occurred or if the excess emissions are occurring at the time of the report or are anticipated to occur, the estimated length of time the excess emissions will continue.
9. **The nature and cause of the excess emissions:** A comprehensive description of the reason why the excess emission occurred.
10. **If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken to prevent the recurrence of such malfunctions:** What actions were taken to stop the excess emissions and what actions were or are being taken to prevent this type of emission from occurring again.
11. **The steps that were or are being taken to limit the excess emissions. If the source's permit contains procedures governing source operations during periods of start-up or malfunction and the excess emissions resulted from start-up or malfunction; a list of the steps taken to comply with the permit procedures:** What steps are or were being taken to limit, reduce, or control excess emissions until resumption of normal operation. What was done to comply with permit conditions covering such occurrences.

Filing Instructions

This completed form may be used to satisfy the requirements of A.A.C. R18-2-310.01 by faxing it, within 24 hours of the time when the owner or operator first learned of the occurrence of excess emissions, to:

(602) 771-4251
ATTN: Latha Toopal, Compliance Section, Technical Services Unit

This completed and **signed** form may be used to satisfy the requirements of A.A.C. R18-2-310.C.1.b by certifying it with an original signature and **mailing** it, within 72 hours of the initial notification of A.A.C. R18-2-310.C.1.b, to:

Arizona Department of Environmental Quality
Air Quality Division
Compliance Section, Technical Services Unit
1110 West Washington Street, 3415A - 3
Phoenix, Arizona 85007 - 2935

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division

1110 W. Washington Street, Phoenix, AZ 85007 Phone: (602) 771-4490

SIGNIFICANT PERMIT REVISION TO AIR QUALITY CONTROL PERMIT

(As required by Title 49, Chapter 3, Article 2, Section 49-426, Arizona Revised Statutes)

This air quality control permit does not relieve applicant of responsibility for meeting all air pollution regulations

1. PERMIT TO BE ISSUED TO (Business license name of organization that is to receive permit) _____

Arizona Public Service Company

2. NAME (OR NAMES) OF OWNER OR PRINCIPALS DOING BUSINESS AS THE ABOVE ORGANIZATION _____

Arizona Public Service Company & PacifiCorp

3. MAILING ADDRESS PO Box 188 _____

Number Street
Joseph City, AZ 86032
City or Community State Zip Code

4. ORIGINAL EQUIPMENT LOCATION/ADDRESS 4801 Frontage Road _____

Number Street
Joseph City, Navajo County, AZ 86032
City or Community State Zip Code

5. FACILITIES OR EQUIPMENT DESCRIPTION Electric Utility Station

6. THIS PERMIT ISSUED SUBJECT TO THE FOLLOWING Conditions as described in attached

7. ADEQ SIGNIFICANT REVISION NUMBER 41787 PERMIT CLASS I

SIGNIFICANT REVISION ISSUED THIS 6th DAY OF April, 2007


SIGNATURE

Nancy C. Wrona, Director, Air Quality Division

TITLE

SIGNIFICANT PERMIT REVISION DESCRIPTION

Arizona Public Service Company (APS), the Permittee, proposes to retrofit all four steam boiler units at its Cholla Power Plant with low NOx burners and over-fire air systems. While reducing nitrogen oxides (NOx) emissions, the low NOx burner project may result in carbon monoxide (CO) emissions increase in excess of the CO significant threshold and therefore, trigger the Protection of Significant Deterioration (PSD) provision. This permit action is a significant permit revision to Cholla's Air Quality Class I Permit No. 33500. It authorizes APS to proceed with the low NOx burner project by incorporating into the current permit, the PSD Best Available Control Technology (BACT) and continuous emission monitoring requirements for CO emissions.

ADDENDUM (SIGNIFICANT REVISION) NO. 41787 TO AIR QUALITY PERMIT NO. 33500 For Arizona Public Service Company

This addendum is both an authorization for the Permittee to make modifications at the Cholla Power Plant that include installation and operation of the low NOx burners at Steam Boiler Units 1 through 4, and a significant revision to the Class I Air Quality Permit No. 33500. In addition to the terms and conditions of Permit No. 33500, the Permittee shall comply with the terms and conditions required in this addendum as follows:

Attachment "B" of Permit No. 33500 is hereby amended by adding a new Section XIV to read as follows:

XIV. LOW NO_x BURNERS AND OVER-FIRE AIR SYSTEMS PROJECT

A. Authorization

The Permittee shall be authorized under this Section to install and operate the low NOx burners during the term of this permit at Steam Boiler Units 1 through 4 to replace the existing burners. [A.A.C. R18-2-402.A]

B. Source Obligation

[A.A.C. R18-2-402.D.4]

This Section shall become invalid if installation of the low NOx burners is not begun within 18 months of issuance of the addendum or, if during installation of the low NOx burners, work is suspended for more than 18 months.

C. Notification

[A.A.C. R18-2-306.A.5]

The Permittee shall furnish the Director in writing, the following notifications for each affected steam boiler unit:

1. A notification of the date upon which installation of the low NOx burners is commenced, postmarked within 15 days after such date.
2. A notification of the actual date of initial startup of the low NOx burners,

postmarked within 15 days after such date.

3. A notification of the date upon which performance demonstration of the continuous monitoring system for carbon monoxide is conducted in accordance with Condition F.3.c(6) of this Section, postmarked within 15 days after such date.

D. Emission Limits/Standards

At all times upon installation of the low NO_x burners, the Permittee shall not cause to be discharged into the atmosphere from the stack of each affected steam boiler unit, any gases which contain carbon monoxide in excess of:

1. 0.15 lb per million Btu heat input derived from combustion of fuel, based on a 30-day rolling average, excluding periods of startup, shutdown, or malfunction. [A.A.C. R18-2-406.A.4]
2. 0.75 lb per million Btu heat input derived from combustion of fuel, on an hourly basis. [A.A.C. R18-2-406.A.5]

E. Air Quality Control Requirements

1. Carbon monoxide [A.A.C. R18-2-406.A.4]
 - a. At all times upon installation of the low NO_x burners, including periods of startup, shutdown and malfunction, to the extent practicable, the Permittee shall operate and maintain each steam boiler unit and associated low NO_x burners in a manner consistent with good combustion practices for minimizing carbon monoxide emissions.
 - b. For the purpose of this Section, the good combustion practices shall include, but is not limited to, the following components:
 - (1) Good air/fuel mixing in the combustion zone;
 - (2) High temperatures and low oxygen levels in the primary combustion zone;
 - (3) Overall excess oxygen levels high enough to complete combustion while maximizing boiler thermal efficiency; and
 - (4) Sufficient residence time to complete combustion.
 - c. Determination of whether the good combustion practices are being implemented for minimizing boiler carbon monoxide emissions will be based on information available to the Director which may include, but not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the source.

2. Nitrogen oxides

At all times upon installation of the low NO_x burners, including periods of startup, shutdown and malfunction, to the extent practicable, the Permittee shall

operate and maintain each steam boiler unit and associated low NOx burners in a manner consistent with good air pollution control practice for minimizing nitrogen oxides emissions. {this is a material permit condition} [A.A.C. R18-2-331.A.3.e]

F. Monitoring, Recordkeeping and Reporting

1. In conjunction with installation and operation of the low NOx burners, the Permittee shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) at each affected steam boiler unit, and record the output of the system, for measuring carbon monoxide (CO) and diluent (O₂/CO₂) emissions from exhaust of the boiler's stack. The output of the CEMS shall be expressed in pounds CO per million Btu heat input.
{this is a material permit condition} [A.A.C. R18-2-306.A.3.a, 331.A.3.c and 406.A.4]
2. The existing diluent (O₂/CO₂) continuous monitoring systems required under Sections II, III, V and VI of Attachment "B" of the permit may be used to satisfy the requirement for monitoring of diluent emissions.
3. All continuous monitoring systems prescribed in this Section shall meet the following requirements: [A.A.C. R18-2-306.A.3.a and 406.A.4]
 - a. 40 CFR Part 60, Appendix B, Performance Specification 4A, "Specifications and Test Procedures for Carbon Monoxide Continuous Emission Monitoring Systems in Stationary Sources".
 - b. 40 CFR Part 60, Appendix B, Performance Specification 3, "Specifications and Test Procedures for O₂ and CO₂ Continuous Emission Monitoring Systems in Stationary Sources".
 - c. 40 CFR Part 75, Appendix A, "Specification and Test Procedures"
 - (1) Installation and measurement location
 - (2) Equipment specifications
 - (3) Performance specifications
 - (4) Data acquisition and handling systems
 - (5) Calibration gas
 - (6) Certifications tests and procedures
 - (7) Calculations
 - d. 40 CFR Part 75, Appendix B, "Quality Assurance and Quality Control Procedure"
 - (1) Quality assurance/quality control program
 - (2) Frequency of testing
 - e. Data Reduction
The Permittee shall comply with the data reduction requirements of 40 CFR Part 75.10(d)(1).

f. Missing Data Substitution

- (1) The Permittee shall, in processing any CO emission data gaps throughout operation, comply with the appropriate provisions in 40 CFR Part 75, Subpart D, "Missing Data Substitution Procedures" and Appendix C, "Missing Data Estimation Procedures". For the purpose of this Section, when monitor data availability reaches below 80%, all CO emission data gaps shall be substituted using a CO emission rate not less than 0.75 lb per million Btu heat input derived from combustion of fuel.
- (2) The Permittee may elect to supplement CO emission data with the following USEPA reference methods and procedures:
 - (a) Reference Method 10 shall be used to determine the CO concentration at the same location as the CO monitor.
 - (b) The emission rate correction factor, integrated bag sampling and analysis procedure of Reference Method 3B shall be used to determine the O₂/CO₂ concentration at the same location as the O₂/CO₂ monitor.
 - (c) The procedures in Reference Method 19 shall be used to compute each 1-hour average concentration in ng/J (pounds per million Btu).
 - (d) As Method 19 does not provide conversion factors for carbon monoxide, a conversion factor of 7.269×10^{-8} shall be used to convert parts per million (ppm) to pounds per standard cubic foot (lb/scf).

g. 40 CFR Part 75, Appendix F, "Conversion Procedures"

The Permittee shall convert all hourly pollutant and diluent data to the applicable emissions standard utilizing the procedures of 40 CFR Part 75, Appendix F.

4. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, each continuous monitoring system prescribed in this Section shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [A.A.C. R18-2-306.A.3.a and 406.A.4]
5. Each continuous monitoring system prescribed in this Section shall be installed and operational prior to conducting the initial performance tests required under subsection G of this Section. Verification of operational status shall, at a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of these devices. Notification of the operational status of the continuous monitoring system shall be provided to the Director within 30 days after the system becomes operational, or by the date on which the initial performance test is conducted, whichever occurs first. [A.A.C. R18-2-306.A.3.a and 406.A.4]
6. CO Emissions Compliance Determination [A.A.C. R18-2-406.A.4 and 5]
 - a. The Permittee shall use CO emission data measured and recorded by the continuous monitoring systems prescribed in this Section to demonstrate

compliance with the carbon monoxide emission standards set forth in Conditions D.1 and D.2 of this Section.

- b. After the initial performance tests required to be conducted under subsection G of this Section, compliance with Condition D.1 of this Section shall be based on the average emission rate for 30 successive calendar days. A new 30-day average carbon monoxide emission rate shall be determined at the end of each calendar day by calculating the arithmetic average of all hourly carbon monoxide emission rates for the past 30 successive calendar days, except for data obtained during periods of startup, shutdown, or malfunction.
- c. The following shall be considered periods of excess emissions:
 - (1) Any calendar day for which the 30-day rolling average CO emission rate as determined by the applicable continuous monitoring systems in accordance with Condition F.6.b above exceeds the 30-day average CO emission limit set forth in Condition D.1 of this Section.
 - (2) Any hour for which the hourly CO emission rate as measured by the applicable continuous monitoring systems of this Section exceeds the hourly CO emission limit set forth in Condition D.2 of this Section.
- d. All excess emissions shall be reported in accordance with Section XII, Attachment "A" of the permit. [A.A.C. R18-2-306.A.5.b and 310.01]

- 7. The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records. [A.A.C. R18-2-306.A.4.a and 406.A.4]

G. Initial Performance Testing [A.A.C. R18-2-312, -406.A.4 and -406.A.5]

- 1. Within 60 days after a steam boiler unit, equipped with low NOx burners, has achieved the capability to operate at its maximum production rate on a sustained basis but no later than 180 days after initial startup of the associated low NOx burners, the Permittee shall conduct performance tests at the steam boiler unit to determine initial compliance with the carbon monoxide emission limits set forth in Conditions D.1 and D.2 of this Section.
- 2. For each performance test required pursuant to Condition G.1 above, the Permittee shall submit to the Director a test plan in accordance with Condition XVIII.D, Attachment "A" of the permit and furnish to the Director a written report of the testing results in accordance with Condition XVIII.G, Attachment "A" of the permit.
- 3. Performance tests shall be conducted under such conditions as the Director shall specify to the Permittee based on representative performance of each affected

steam boiler unit. The Permittee shall make available to the Director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions of performance tests.

4. Performance tests shall be conducted and data reduced in accordance with the following EPA reference methods and procedures:
 - a. Method 3A, "Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
 - b. Method 4, "Determination of Moisture Content in Stack Gases"
 - c. Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
 - d. The appropriate procedures in Method 19, "Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates", shall be used to determine the carbon monoxide emission rate. As Method 19 does not provide conversion factors for carbon monoxide, a conversion factor of 7.269×10^{-8} shall be used to convert parts per million (ppm) to pounds per standard cubic foot (lb/scf).
5. The continuous monitoring system certification tests and procedures required in Condition F.3.c(6) of this Section may be used to satisfy the requirement for performing of the initial compliance testing, provided that the timetable set forth in Condition G.1 above is met.