

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY CLASS I PERMIT

COMPANY: Arizona Public Service Company
FACILITY: Cholla Steam Electric Station
PERMIT #: 33500
DATE ISSUED: Permit Draft for EPA Review (March 6, 2006)
EXPIRY DATE:

SUMMARY

This permit is a renewal of the Air Quality Title V Permit No. 1000108 issued to Arizona Public Service Company (APS), the Permittee, for operation of its Cholla Power Plant, located approximately two miles east of the town of Joseph City on Interstate 40, in Navajo County, Arizona, and approximately 200 miles northeast of Phoenix at an elevation of 5019 feet above sea level. The Cholla Power Plant consists of four pulverized coal-fired, steam boilers which generate approximately 1,000 megawatts of electricity. Each unit is a tangentially-fired, dry bottom furnace. Natural gas and diesel fuel are used as warm-up and stabilization fuels. Unit 4 burns used oil and/or used oil fuel for energy recovery purposes and are co-fired with coal.

The control equipment used on Unit 1 is mechanical dust collectors and a wet scrubber system for control of sulfur dioxide (SO₂) and particulate matter. Unit 2 has similar particulate removal and scrubbing equipment. Unit 3 has an electrostatic precipitator for particulate removal, but does not have SO₂ control equipment. Units 2 and 3 share a common stack and are regulated as a single source for SO₂. When Unit 3 is operating and Unit 2 is out of service, a special, lower sulfur coal (approximately 0.3-0.4% by weight) is used to control SO₂ emissions. Unit 4 is equipped with an electrostatic precipitator for particulate matter removal and sulfur dioxide scrubbing equipment.

APS will implement a voluntary air pollution reduction project during the course of this permit that includes installation, operation and maintenance of the following air pollution control equipment to replace or upgrade the current control: (i) fabric filter device at Steam Boiler Units 1, 3 and 4 for better performance of particulate matter (PM) removal, and (ii) scrubber upgrade at Steam Boiler Unit 1 and new absorbers at Steam Boiler Units 3 and 4 for better performance of sulfur dioxide (SO₂) removal.

The Cholla Power Plant is classified as a Class I, Major Source, pursuant to A.A.C. R18-2-101.61. The potential emission rates of the following pollutants are greater than 100 tons per year: (i) particulate matter, (ii) sulfur dioxide, (iii) nitrogen oxides, and (iv) carbon monoxide. The Cholla Power Plant is also subject to the Acid Rain Program of the Clean Air Act.

This Class I permit is issued in accordance with Title V of the Clean Air Act, and Title 49, Chapter 3 of the Arizona Revised Statutes. All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code R18-2-101 et. seq. (A.A.C.) and 40 Code of Federal Regulations (CFR), except as otherwise defined in this permit. Unless noted otherwise, references cited in the permit conditions refer to the A.A.C. All terms and conditions in this permit are enforceable by the Administrator of the United States Environmental Protection Agency (U.S. EPA), except for those terms and conditions that have been designated as "State requirements".

This Class I permit supersedes all previous operating permits issued to APS, Cholla. The terms and conditions of these permits are void as of the date of issuance of this permit. This permit incorporates the applicable requirements contained in the underlying construction/installation permits and does not affect those applicable requirements.

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ATTACHMENT “A”: GENERAL PROVISIONS
Air Quality Control Permit No. 33500

For

Arizona Public Service Company – Cholla Power Plant

I. PERMIT EXPIRATION AND RENEWAL

[ARS § 49-426.F, A.A.C. R18-2-304.C.2, and -306.A.1]

- A. This permit is valid for a period of five years from the date of issuance.
- B. The Permittee shall submit an application for renewal of this permit at least 6 months, but not more than 18 months, prior to the date of permit expiration.

II. COMPLIANCE WITH PERMIT CONDITIONS

[A.A.C. R18-2-306.A.8.a and b]

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
- B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

[A.A.C. R18-2-306.A.8.c, -321.A.1, and -321.A.2]

- A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- B. The permit shall be reopened and revised under any of the following circumstances
 - 1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless an application for renewal has been submitted pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term.
 - 2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit.

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.
- C. Proceedings to reopen and reissue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopenings shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.

IV. POSTING OF PERMIT

[A.A.C. R18-2-315]

- A. The Permittee shall post this permit or a certificate of permit issuance where the facility is located in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:
1. Current permit number; or
 2. Serial number or other equipment ID number that is also listed in the permit to identify that piece of equipment.
- B. A copy of the complete permit shall be kept on site.

V. FEE PAYMENT

[A.A.C. R18-2-306.A.9 and -326]

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE

[A.A.C. R18-2-327.A and B]

- A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.
- B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.

VII. COMPLIANCE CERTIFICATION

[A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

- A. The Permittee shall submit a compliance certification to the Director semiannually, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;
 2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period;
 3. The status of compliance with the terms and conditions of this permit for the period covered by the certification, based on the methods or means designated in Condition VII.A.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;
 4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;
 5. All instances of deviations from permit requirements reported pursuant to Condition XII.B of this attachment; and
 6. Other facts the Director may require to determine the compliance status of the source.
- B. A copy of all compliance certifications shall also be submitted to the EPA Administrator.
- C. If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

[A.A.C. R18-2-304.H]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY

[A.A.C. R18-2-309.4]

- A. Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:
- B. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
- C. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
- D. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- E. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
- F. Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD [A.A.C. R18-2-304.C]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. ACCIDENTAL RELEASE PROGRAM [40 CFR Part 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting [A.A.C. R18-2-310.01.A and -310.01.B]

1. Excess emissions shall be reported as follows:
 - a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:
 - (1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.
 - (2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a.(1) above.
 - b. The report shall contain the following information:
 - (1) Identity of each stack or other emission point where the excess emissions occurred;
 - (2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
 - (3) Date, time and duration, or expected duration, of the excess emissions;
 - (4) Identity of the equipment from which the excess emissions emanated;
 - (5) Nature and cause of such emissions;
 - (6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions; and
 - (7) Steps taken to limit the excess emissions; if the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.
2. In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period or changes in the nature of the emissions as originally reported shall require additional notification pursuant to Condition XII.A.1 above. [A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting

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

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Prompt reporting shall mean that the report was submitted to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to an emergency or within two working days of the time when the owner or operator first learned of the occurrence of a deviation from a permit requirement.

C. Emergency Provision

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

1. An “emergency” means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if Condition XII.C.3 is met.
3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;
 - b. The permitted facility was being properly operated at the time;
 - c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule

[ARS § 49-426.I.5]

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown

[A.A.C. R18-2-310]

1. Applicability

This rule establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Act;
- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;
- d. Contained in A.A.C. R18-2-715.F; or
- e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;
- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
- e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
- f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
- h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
- i. All emissions monitoring systems were kept in operation if at all practicable; and
- j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

3. Affirmative Defense for Startup and Shutdown

- a. Except as provided in Condition XII.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:
- (1) The excess emissions could not have been prevented through careful and prudent planning and design;
 - (2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
 - (3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - (4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
 - (5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
 - (6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
 - (7) All emissions monitoring systems were kept in operation if at all practicable; and
 - (8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.
- b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.

4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2 above.

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XII.E.2 or XII.E.3 above, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

XIII. RECORD KEEPING REQUIREMENTS

[A.A.C. R18-2-306.A.4]

- A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:
 - 1. The date, place as defined in the permit, and time of sampling or measurements;
 - 2. The date(s) analyses were performed;
 - 3. The name of the company or entity that performed the analyses;
 - 4. A description of the analytical techniques or methods used;
 - 5. The results of such analyses; and
 - 6. The operating conditions as existing at the time of sampling or measurement.
- B. The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
- C. All required records shall be maintained either in an unchangeable electronic format or in a handwritten logbook utilizing indelible ink.

XIV. REPORTING REQUIREMENTS

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

The Permittee shall submit the following reports:

- A. Compliance certifications in accordance with Section VII of Attachment “A”.
- B. Excess emission; permit deviation, and emergency reports in accordance with Section XII of Attachment “A”.
- C. Other reports required by any condition of Attachment “B”.

XV. DUTY TO PROVIDE INFORMATION

[A.A.C. R18-2-304.G and -306.A.8.e]

- A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.
- B. If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

XVI. PERMIT AMENDMENT OR REVISION

[A.A.C. R18-2-318, -319, and -320]

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Section XVII, as follows:

- A. Administrative Permit Amendment (A.A.C. R18-2-318);
- B. Minor Permit Revision (A.A.C. R18-2-319); and
- C. Significant Permit Revision (A.A.C. R18-2-320)

The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION

[A.A.C. R18-2-306.A.4 and -317]

- A. The Permittee may make changes at the permitted source without a permit revision if all of the following apply:
 - 1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(24);
 - 2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;
 - 3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;
 - 4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A; and
 - 5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.
- B. The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this attachment.
- C. For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change as possible or, if advance notification is not practicable, as soon after the change as possible.
- D. Each notification shall include:
 - 1. When the proposed change will occur;
 - 2. A description of the change;
 - 3. Any change in emissions of regulated air pollutants; and

4. Any permit term or condition that is no longer applicable as a result of the change.
- E. The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section, other than implementation of an alternate to Conditions XVII.A and XVII.B above.
- F. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section.
- G. Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

XVIII. TESTING REQUIREMENTS

[A.A.C. R18-2-312]

- A. The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.
- B. Operational Conditions during Testing

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.
- C. Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.
- D. Test Plan

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

 1. Test duration;
 2. Test location(s);
 3. Test method(s); and
 4. Source operation and other parameters that may affect test results.
- E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

 1. Sampling ports adequate for test methods applicable to the facility;
 2. Safe sampling platform(s);
 3. Safe access to sampling platform(s); and

4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

G. Report of Final Test Results

A written report of the results of all performance tests shall be submitted to the Director within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

XIX. PROPERTY RIGHTS

[A.A.C. R18-2-306.A.8.d]

This permit does not convey any property rights of any sort, or any exclusive privilege.

XX. SEVERABILITY CLAUSE

[A.A.C. R18-2-306.A.7]

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

XXI. PERMIT SHIELD

[A.A.C. R18-2-325]

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled "Permit Shield". The permit shield shall not apply to minor revisions pursuant to Condition XVI.B of this attachment and any facility changes without a permit revision pursuant to Section XVII of this attachment.

XXII. PROTECTION OF STRATOSPHERIC OZONE

[40 CFR Part 82]

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

ATTACHMENT "B": SPECIFIC CONDITIONS
Air Quality Control Permit No. 33500

For

Arizona Public Service Company - Cholla Power Plant

I. GENERAL REQUIREMENTS

- A. The permit conditions or portions of the permit conditions which are material pursuant to A.A.C. R18-2-331 and A.R.S. §49-464 are indicated by a double underlined and italicized print.
- B. Definitions
1. Compliance coal refers to coal of a sulfur content adequate to meet the sulfur dioxide emission limitation of 0.8 pounds per million Btu, when averaged over a three-hour period. [PSD Permit No. M170843S1-98, Attachment "B", Condition XII.C]
 2. Regular coal is any coal other than compliance coal.
 3. Startup for Steam Boiler Units 2, 3 and 4. Startup means the setting in operation of a steam boiler unit for any purpose. For opacity purposes, startup begins when any forced draft, induced draft, or booster induced draft fan of the unit is turned on for any purpose. [40 CFR 60.2]
 4. Shutdown for Steam Boiler Units 2, 3 and 4. Shutdown means the cessation of operation of a steam boiler unit for any purpose. For opacity purposes, shutdown begins when the unit begins to drop load to go off line and ends when all fans of the unit are turned off. [40 CFR 60.2]
 5. Malfunction for Steam Boiler Units 2, 3 and 4. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment or a process to operate in a normal and usual manner, but does not include failures that are caused by poor maintenance, careless operation or any other upset condition or equipment breakdown which could have been prevented by the exercise of reasonable care. [40 CFR 60.2]
 6. Boiler operating day means a 24-hour period during which fossil fuel is combusted in a steam generating unit for the entire 24 hours. [40 CFR 60.41a]
- C. For the purpose of this permit, unless otherwise specified in the applicable standards, for any facilities subject to the new source performance standards from 40 CFR Part 60, compliance with such standards other than opacity standards shall be determined in accordance with performance tests. The performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the subsection "Performance Testing Requirements" of each applicable section. [40 CFR 60.11(a) and 8(b)]
- D. For the purpose of this permit, for any facilities subject to the new source performance standards from 40 CFR Part 60, compliance with the new source opacity standards shall be determined by conducting observations in accordance with EPA Reference Method 9, or any alternative method that is approved by the Director, unless the Permittee elects to submit continuous opacity monitoring system data for compliance with the opacity standards. 40 CFR 60.11(b)]

- E. For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any new source performance standards from 40 CFR 60 subsumed under this attachment, nothing in this attachment shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with such standards if the appropriate performance or compliance test or procedure had been performed. [40 CFR 60.11(g)]
- F. For the purpose of this permit, the EPA Reference Method 9 reading shall be defined as an average of 24 consecutive opacity observations recorded at 15-second intervals. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall two sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. [A.A.C. R18-2-306.A.3.c and 40 CFR 60, Appendix A, Method 9, Section 2.5]
- G. Within 180 days of issuance of this permit, the Permittee shall have on staff a person that is certified in EPA Reference Method 9. [A.A.C. R18-2-306.A.3.c]
- H. Within fourteen (14) calendar days after the compliance certifications required by Section VII of Attachment "A" have been submitted, the Permittee shall submit summary reports of all monitoring activities required in this attachment performed in the six months prior to the date of the report. [A.A.C. R18-2-306.A.5.a]
- I. For the purposes of this permit, Visible Emissions Observation Procedure shall refer to the following methodology:
1. Upon issuance of the permit, the Permittee shall have on file with the Director, a visual observation plan. The observation plan shall identify a central lookout station or multiple observation points, as appropriate, from where point and/or non-point sources, and where applicable, fugitive emissions, shall be monitored. When multiple observation points are used, all the point and/or non-point sources, and where applicable, fugitive emissions, associated with each observation point shall be specifically identified within the observation plan.
 2. A certified EPA Reference Method 9 observer shall conduct a visual survey of visible emissions from point and/or non-point sources, and where applicable, fugitive emissions, in accordance with the observation plan, under normal representative operating conditions. The survey shall be conducted at the frequency specified in the permit condition that refers to this procedure. The Permittee shall keep a record of the name of the observer, the date and time on which the observation was made, the location(s) of the observation, and the results of the observation.
 3. If the observer sees a plume from a point and/or non-point source or a fugitive emissions source that on an instantaneous basis appears to exceed the applicable opacity standard, then the observer shall, if practicable, take a six-minute EPA Reference Method 9 observation of the plume.
 4. If the six-minute opacity of the plume is less than the applicable opacity standard, the observer shall make a record of the following:
 - a. Location, date, and time of the observation;
 - b. The results of the EPA Reference Method 9 observation; and
 - c. The name of the observer.
 5. If the six-minute opacity of the plume exceeds the applicable opacity standard, then the Permittee shall do the following:

- a. Adjust or repair the controls or equipment to reduce opacity to below the applicable opacity standard;
 - b. Record corrective actions;
 - c. Report as an excess emission in accordance with Section XII of Attachment “A” of this permit; and
 - d. Conduct a six-minute EPA Reference Method 9 observation reading within 48 hours after taking corrective action. The results of this observation including date, time, name of the observer, and location shall be recorded.
6. Any changes to the observation plan shall be made only with the prior approval of the Director.

J. Voluntary Air Pollution Reduction Project

1. The Permittee shall be allowed during the course of this permit to implement a voluntary air pollution reduction project that includes installation, operation and maintenance of the air pollution control equipment described as follows:
 - a. Fabric filter device at Steam Boiler Units 1, 3 and 4 for better performance of particulate matter (PM) removal; and
 - b. Scrubber upgrade at Steam Boiler Unit 1 and new absorbers at Steam Boiler Units 3 and 4 for better performance of sulfur dioxide (SO₂) removal.
2. The Permittee shall continue to comply with all requirements of this permit while implementing the voluntary air pollution reduction project.
3. In the event that the information required under Attachment “C” of this permit for the control equipment become available, the Permittee shall follow the appropriate administrative procedures as set forth in Article 3 of Title 18, Chapter 2 of the Arizona Administrative Code to include such equipment in the permit.

- K. The conditions of this attachment shall apply to equipment identified in Attachment “C” of this permit. In the event that after the date of permit issuance, the Permittee identifies pollutant emitting equipment and/or air pollution control equipment existing at the plant at the time of permit issuance, but not included in the permit application for this permit, or if the Permittee identifies errors in Attachment “C” of this permit, the Permittee shall follow the appropriate administrative procedures as set forth in Article 3 of Title 18, Chapter 2 of the Arizona Administrative Code to include such equipment in the permit or to correct such errors.

[A.A.C. R18-2-304.G]

II. STEAM BOILER UNIT 1

A. Emission Limits/Standards

1. Opacity Standard

The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from the stack of Steam Boiler Unit 1, the opacity of which exceeds 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for an exceedance of the visible emissions requirement, such exceedance shall not constitute a violation.

[A.A.C. R18-2-702.B and C]

2. Particulate Matter Standard

[A.A.C. R18-2-703.C.1 and D]

The Permittee shall not cause, allow or permit the emission of particulate matter from the stack of Steam Boiler Unit 1 in excess of the amounts calculated by the following equation and rounded off to two decimal places:

$$E = 1.02 Q^{0.769}$$

Where

E = the maximum allowable particulate matter emissions rate in pounds-mass per hour

Q = the heat input in million Btu per hour

3. Sulfur Dioxide Standard

- a. The Permittee shall not cause, allow, or permit emissions of more than 1.0 pounds of sulfur dioxide maximum three hour average, per million Btu (430 nanograms per joule) heat input from the stack of Steam Boiler Unit 1. [A.A.C. R18-2-703.G.1]
- b. The Permittee shall achieve at least 80 percent sulfur dioxide removal efficiency from the Steam Boiler Unit 1 and associated control device on a 30 successive boiler operating day rolling average. [Installation Permit No. 1247, Attachment "B", Condition II.B]

4. Fuel Limitation

[Installation Permit No. 1002]

The Permittee shall burn only the following fuels in Steam Boiler Unit 1:

- a. Coal;
- b. Natural Gas for startup and stabilization.

5. Definition of Heat Input

For the purpose of conditions II.A.2 and II.A.3 of this section, "heat input" is defined as the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The heat content of solid fuel shall be determined in accordance with A.A.C. R18-2-311. [A.A.C. R18-2-703.B]

B. Air Pollution Control Requirements

1. Particulate Matter

[Installation Permit No. 1002 and A.A.C. R18-2-331.A.3.e]

- a. The Permittee shall, at all times, including periods of startup, shutdown and malfunction, to the extent practicable, operate and maintain Steam Boiler Unit 1 and its mechanical dust collectors/Venturi scrubbers in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.
- b. In the event that a fabric filter control device is commissioned at Steam Boiler Unit 1 to replace the current mechanical dust collectors/Venturi scrubbers for better PM removal performance, the Permittee shall
 - (1) Notify the Director within 30 days of initial startup of the new fabric filter;
 - (2) Operate and maintain at all times, including periods of startup, shutdown and malfunction, to the extent practicable, Steam Boiler Unit 1 and the fabric filter in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

2. Sulfur Dioxide

[Installation Permit No. 1247 and A.A.C. R18-2-331.A.3.e]

- a. The Permittee shall, at all times, including periods of startup, shutdown and malfunction, to the extent practicable, operate and maintain Steam Boiler Unit 1

and its Venturi scrubbers/absorber in a manner consistent with good air pollution control practice for minimizing sulfur dioxide emissions.

- b. In the event that the scrubber is upgraded to an absorber for better SO₂ removal performance, the Permittee shall
 - (1) Notify the Director within 30 days of initial startup of the upgraded absorber;
 - (2) Operate and maintain at all times, including periods of startup, shutdown and malfunction, to the extent practicable, Steam Boiler Unit 1 and the upgraded absorber in a manner consistent with good air pollution control practice for minimizing sulfur dioxide emissions.

C. Monitoring, Recordkeeping and Reporting Requirements

1. Continuous Monitoring for Opacity, SO₂, and O₂/CO₂

- a. The Permittee shall calibrate, maintain, and operate the continuous emission monitoring systems (CEMS) at the stack of Steam Boiler Unit 1 for measuring the opacity, sulfur dioxide, and oxygen content, except when the unit is not in operation. [A.A.C. R18-2-313.A.2, 313.C.1 and 703.J]
- b. To determine the 30 successive boiler operating day rolling average SO₂ removal efficiency specified in paragraph II.A.3.b of this attachment for Steam Boiler Unit 1, the Permittee shall conduct the following: [A.A.C. R18-2-306(A)(3)(c)]
 - (1) Calibrate, maintain, and operate the SO₂ and O₂/CO₂ CEMS installed at the Unit 1 SO₂ scrubber inlet, and record the output of the system, for measuring sulfur dioxide emissions. In conjunction with the scrubber outlet SO₂ and O₂/CO₂ CEMS prescribed in Paragraph II.C.1.a, the Permittee shall monitor the sulfur dioxide emissions at both the inlet and outlet of the sulfur dioxide control device;
 - (2) Calculate average daily removal efficiency using the 1-hour average CEMS data and Reference Method 19; and
 - (3) Accumulate the average daily removal efficiencies described in paragraph (2) above at the end of each boiler operating day for the last 30 successive boiler operating days to calculate the 30-day rolling average removal efficiency and to determine compliance with the standard of 80% removal efficiency.
 - (4) The Permittee shall operate the SO₂ and O₂/CO₂ CEMS and record data during all periods of operation of Steam Boiler Unit 1 including periods of startup, shutdown, malfunction or emergency conditions, except for continuous monitoring system breakdown, repairs, calibration checks, and zero and span adjustments.
 - (5) The Permittee shall obtain the SO₂ emission data from the scrubber inlet and outlet CEMS for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with the CEMS, the Permittee shall supplement emission data with the reference methods and procedures as specified in 40 CFR 47a(h) or (j).
- c. The continuous emission monitoring systems for SO₂ and O₂/CO₂ shall meet the following requirements: [A.A.C. R18-2-313]
 - (1) 40 CFR Part 75, Appendix A, "Specification and Test Procedures"
 - (a) Installation and measurement location
 - (b) Equipment specifications

- (c) Performance specifications
 - (d) Data acquisition and handling systems
 - (e) Calibration gas
 - (f) Certifications tests and procedures
 - (g) Calculations
- (2) 40 CFR Part 75, Appendix B, “Quality Assurance and Quality Control Procedure”
- (a) Quality control program
 - (b) Frequency of testing
- (3) Data Reduction
- The Permittee shall comply with the data reduction requirements of 40 CFR Part 75.10(d)(1).
- (4) 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.
- d. The continuous opacity monitoring systems shall meet the following requirements: [A.A.C. R18-2-313]
- (1) 40 CFR 60, Appendix B, Performance Specification 1, Specification and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources [A.A.C. R18-2-313.D.1.a]
- (a) Apparatus
 - (b) Installation Specifications
 - (c) Design and Performance Specifications
 - (d) Design Specifications Verification Procedure
 - (e) Performance Specifications Verification Procedure
 - (f) Equations
- (2) Quality Assurance Requirements
- (a) Calibration Checks
- The Permittee shall record the zero and span drift in accordance with the method prescribed by the manufacturer's recommended zero and span check at least once daily unless the manufacturer has recommended adjustments at shorter intervals, in which case such recommendations shall be followed. [A.A.C. R18-2-313.D.6]
- (b) Zero and Span Drift Adjustments
- i) The Permittee shall adjust the zero or span whenever the 24 hour zero drift or 24 hour calibration drift limits of 2% opacity are exceeded. [A.A.C. R18-2-313.D.6]
 - ii) The system shall allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. [A.A.C. R18-2-313.D.6]
 - iii) The optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments except that for systems using automatic zero adjustments.

- iv) The optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4% opacity.

(c) Minimum Frequency of Operation

Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS shall be in continuous operation and shall complete a minimum of one cycle of sampling and analyzing for each successive 15-second period and one cycle of data recording for each successive 6-minute period. [A.A.C. R18-2-313.E.2]

(d) Data Reduction Procedures [A.A.C. R18-2-313.E]

- i) The Permittee shall reduce all data from the COMS to 6-minute averages. Six-minute opacity averages shall be calculated from 24 or more data points equally spaced over each 6-minute period.
- ii) Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under the previous paragraph. An arithmetic or integrated average of all data may be used.

e. Recordkeeping and Reporting Requirements

(1) Quarterly reporting requirements

- (a) The Permittee shall submit to the Director a written report of all emission exceedances for each calendar quarter and the nature and cause of the exceedances, if known, postmarked by the 30th day following the end of each calendar quarter. The averaging period used for data reporting shall correspond to the averaging period specified in the emission standard. The required report shall include, as a minimum, the data stipulated in this subsection. [A.A.C. R18-2-313.E.1]
- (b) For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of all six minute opacity averages greater than any applicable standards for each hour of operation of the facility. Average values may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four equally spaced, instantaneous opacity measurements per minute. Any time periods exempted shall be deleted before determining any averages in excess of opacity standards. [A.A.C. R18-2-313.E.2]
- (c) For gaseous measurements the summary shall consist of emission averages in the units of the applicable standard for each averaging period during which the applicable standard was exceeded. [A.A.C. R18-2-313.E.3]
- (d) For SO₂ removal efficiency, the summary shall include the 30-day rolling average of the removal efficiency for each day in the quarter. [Installation Permit No. 1247]
- (e) The date and time identifying each period during which the continuous emission monitoring system was inoperative, except for zero and span checks and the nature of system repair or adjustment shall be reported. The Director may require proof of continuous emission monitoring system performance whenever system repairs or adjustments have been made. [A.A.C. R18-2-313.E.4]

(2) Emission deviations reporting requirements

In addition to paragraph (1) above, the Permittee shall report emissions exceeding an emission limitation or standard as deviations in accordance with Section XI.B of Attachment “A” of this permit. [A.A.C. R18-2-306.A.5.b]

(3) When no emission exceedances/deviations have occurred and the continuous emission monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the quarterly report. [A.A.C. R18-2-306.A.5.b and 313.E.5]

(4) The Permittee shall comply with all the recordkeeping and reporting requirements of 40 CFR Part 75 Subparts F and G respectively. [A.A.C. R18-2-306.A.4 and 5]

2. Compliance Assurance Monitoring for Particulate Matter [40 CFR 64]

Upon issuance of the permit, the Permittee shall conduct the compliance assurance monitoring required in Attachment “E” of this permit for Steam Boiler Unit 1.

D. Performance Testing Requirements

1. Opacity

The Permittee shall perform an annual opacity observation of the stack of Steam Boiler Unit 1 in accordance with EPA Reference Method 9. [A.A.C. R18-2-312.A]

2. Particulate Matter

The Permittee shall use the applicable reference methods given in the Appendices to 40 CFR 60 to determine compliance with the standard of particulate matter emissions from the stack of Steam Boiler Unit 1, as specified in paragraph II.A.2 of this section. The performance test using such reference methods shall be conducted annually and during operation at the nominal rated capacity of the unit. [A.A.C. R18-2-311.A, 312.A, 703.B and 703.K]

3. Sulfur Dioxide

a. The Permittee shall use the applicable reference methods given in the Appendices to 40 CFR 60 to determine compliance with the standard of sulfur dioxide emissions from the stack of Steam Boiler Unit 1, as specified in paragraph II.A.3.a of this section. The performance test using such reference methods shall be conducted annually and during operation at the nominal rated capacity of the unit. [A.A.C. R18-2-311.A, 312.A, 703.B and 703.K]

b. The Permittee shall obtain SO₂ emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If the Permittee has not obtained the required minimum quantity of data, compliance of Steam Boiler Unit 1 with the SO₂ emission requirements under paragraph II.A.3.b, Attachment “B” of the permit for the day on which the 30-day period ends shall be determined by following the applicable procedures in Section 7 of EPA Reference Method 19. [A.A.C. R18-2-306(A)(3)(c)]

E. Compliance Plan With Respect To Opacity Standard

1. Description [A.A.C. R18-2-309.5.a and b.iii]

The Permittee is currently capable of controlling the Unit 1 flue gas opacity to below 40 percent by operating and maintaining the mechanical dust collectors/lime slurry scrubber consistent with Condition II.B.1 of this attachment. After April 23, 2006, however, the 40 percent opacity standard will be phased out and a new 20 percent opacity will be required, as specified in Condition II.A.1 of this attachment. In order to

achieve compliance with the new opacity limit, the Permittee plans to replace the current control device with fabric filter control according to the following schedule.

2. Compliance schedule [A.A.C. R18-2-309.5.c.iii]

The Permittee shall comply with the timelines outlined in the following schedule to ensure that an enforceable sequence of actions with milestones, leading to compliance with the 20 percent opacity limit after April 23, 2006, is met:

Actions with milestones	Completion date
Secure the engineering, procurement, and construction (EPC) contract with Alstom	Completed
Demolition and site preparation	Completed
Piling and foundations	June 1, 2006
Complete detailed engineering	June 30, 2006
Completion of construction of baghouse to the point that it is ready for tie into the boiler during an outage	December 31, 2006
Beginning tie into boiler (outage in spring 07 but looking at delaying until the fall after summer peak due to lead time of non-baghouse outage items)	November 01, 2007
Commission of the new baghouse (startup date following tie in)	December 15, 2007
Conduct stack test to demonstrate compliance with 20% opacity limit	December 30, 2007

3. Progress report [A.A.C. R18-2-309.5.d]

The Permittee shall submit certified progress reports at least twice a year along with the compliance certification submittal required in Section VII, Attachment “A” of the permit to report the following:

- a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance and dates when such activities, milestones, or compliance were achieved; and
- b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures taken.

F. Permit Shield [A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with the applicable requirements prescribed under A.A.C. R18-2-703 for the affected sources subject to this Section.

III. STEAM BOILER UNIT 2

A. Emission Limits/Standards

1. Opacity Standard

The opacity of emissions from the stack of Steam Boiler Unit 2 shall not be greater than 20 percent at all times except for periods of startup, shutdown, and malfunction as defined in paragraphs I.B.3, 4 and 5 of this attachment, and for one six-minute period per hour of not more than 27 percent opacity. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with the opacity standard. [40 CFR 60.42(a)(2), 60.11(c) and 60.11(e)(1)]

2. Particulate Matter Standard

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 2, any gases which contain particulate matter in excess of 43 nanogram per joule heat input (0.10 lb per million Btu) derived from fossil fuel.

[40 CFR 60.42(a)(1)]

3. Sulfur Dioxide Standard

a. The Permittee shall not cause to be discharged into the atmosphere from Steam Boiler Unit 2 any gases which contain sulfur dioxide in excess of 0.8 pounds per million Btu heat input; and [PSD Permit No. M170843S1-98, Attachment "B", Condition XII.B.1]

b. The Permittee shall not cause to be discharged into the atmosphere from Steam Boiler Unit 2, any gases which contain sulfur dioxide in excess of 10 percent of the potential combustion concentration (90 percent reduction).

[PSD Permit No. M170843S1-98, Attachment "B", Condition XII.B.1]

c. The sulfur dioxide emission standards required under paragraphs III.A.3.a and b above shall apply at all times except during periods of startup, shutdown, or when both emergency conditions, as defined in 40 CFR 60.41a, exist and emergency procedures under paragraph III.B.2.d of this section are implemented.

[PSD Permit No. M170843S1-98 and 40 CFR 60.46a(c)]

4. Nitrogen Oxide Standard

a. Coal

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 2 any gases which contain nitrogen oxides, expressed as NO₂ in excess of 300 nanogram per joule heat input (0.70 lb per million Btu) derived from solid fossil fuel.

[40 CFR 60.44(a) and 44(a)(3)]

b. Combination Fuels

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 2, when different fossil fuels are burned simultaneously in any combination, any gases which contain nitrogen oxides in excess of the applicable standard (in ng/J) derived using the following proration formula:

[40 CFR 60.44(b)]

$$PSNOX = \frac{w(260) + x(86) + y(130) + z(300)}{w + x + y + z}$$

Where:

PSNOX = prorated standard for nitrogen oxides when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

w = percentage of total heat input derived from lignite;

x = percentage of total heat input derived from gaseous fossil fuel;

y = percentage of total heat input derived from liquid fossil fuel; and

z = percentage of total heat input derived from solid fossil fuel (except lignite).

5. Fuel Limitation

[Installation Permit No. 1037]

The Permittee shall burn only the following fuels in Steam Boiler Unit 2:

a. Coal;

b. No. 2 fuel oil for startup and stabilization.

B. Air Pollution Control Requirements

1. Control Requirements

a. Particulate matter control

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, continue to operate and maintain Steam Boiler Unit 2 and its mechanical dust collectors and Venturi scrubbers in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.e]

b. Sulfur dioxide control

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, continue to operate and maintain Steam Boiler Unit 2 and its lime thiosulfate Venturi flooded disc scrubbers (Venturi scrubbers) and absorbers in a manner consistent with good air pollution control practice for minimizing sulfur dioxide emissions.

[40 CFR 60.11(d) and PSD Permit No. M170843S1-98, Attachment "B", Condition XVI and A.A.C. R18-2-331.A.3.e]

2. Operation Procedures

a. Startup

During startups of Steam Boiler Unit 2, the Venturi scrubbers and absorbers of the unit shall be placed in service within one hour of the boiler-induced draft fans and forced draft fans being placed in service and before fires are in the boiler.

[40 CFR 60.11(d)]

b. Shutdown

During shutdowns of Steam Boiler Unit 2, the Venturi scrubbers and absorbers of the unit shall remain in service after fires in the boiler are out and shall not be taken out of service until just prior to the boiler forced draft fans and induced draft fans being turned off.

[40 CFR 60.11(d)]

c. Malfunction

For Steam Boiler Unit 2 with any malfunction of its Venturi scrubbers that exceeds four hours, if fires are in the boiler, the Permittee shall reduce the unit's load so that the Venturi scrubbers in service can properly process and treat the volume of flue gas being produced. If a malfunction makes it impossible to properly process and treat the volume of flue gas being produced, the unit shall be shut down.

[40 CFR 60.11(d)]

d. Emergency

[PSD Permit No. M170843S1-98]

During emergency conditions as defined in 40 CFR 60.41a, Steam Boiler Unit 2 with a malfunctioning flue gas desulfurization (FGD) system may be operated if sulfur dioxide emissions are minimized by:

(1) Operating all operable flue gas desulfurization system modules, and bringing back into operation any malfunctioned module as soon as repairs are completed;

[40 CFR 60.46a(d)(1)]

(2) Bypassing flue gases around only those flue gas desulfurization system modules that have been taken out of operation because they were incapable of any sulfur dioxide emission reduction or which would have suffered significant physical damage if they had remained in operation; and

[40 CFR 60.46a(d)(2)]

- (3) Designing, constructing, and operating a spare FGD system module for Steam Boiler Unit 2, the Permittee shall demonstrate the capability of the spare FGD system in accordance with 40 CFR 60.46a(d)(3). [40 CFR 60.46a(d)(3)]

C. Monitoring, Recordkeeping and Reporting Requirements

1. Continuous Monitoring for Opacity, SO₂ and NO_x Emissions, and O₂/CO₂ Content

a. Opacity

The Permittee shall calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions. [40 CFR 60.45(a)]

b. NO_x

The Permittee shall calibrate, maintain, and operate a continuous monitoring system for measuring the nitrogen oxides emissions. [40 CFR 60.45(a)]

c. SO₂ and O₂/CO₂ [PSD Permit No. M170843S1-98, Attachment "B", Condition XV.A]

(1) The Permittee shall calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring sulfur dioxide emissions. The sulfur dioxide emissions shall be monitored at both the inlet and outlet of the sulfur dioxide control device. [40 CFR 60.47a(b)]

(2) The Permittee shall calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring the oxygen content of the flue gases at each location where SO₂ emissions are monitored. [40 CFR 60.47a(d)]

(3) The Permittee shall operate the SO₂ and O₂/CO₂ continuous monitoring systems and record data during all periods of operation of Steam Boiler Unit 2 including periods of startup, shutdown, malfunction or emergency conditions, except for continuous monitoring system breakdown, repairs, calibration checks, and zero and span adjustments. [40 CFR 60.47a(e)]

(4) The Permittee shall obtain the SO₂ emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. [40 CFR 60.47a(f)]

d. The continuous emission monitoring systems for SO₂, NO_x, and O₂/CO₂ shall meet the following requirements:

(1) 40 CFR Part 75, Appendix A, "Specification and Test Procedures" [40 CFR 60.13]

(a) Installation and measurement location

(b) Equipment specifications

(c) Performance specifications

(d) Data acquisition and handling systems

(e) Calibration gas

(f) Certifications tests and procedures

(g) Calculations

(2) 40 CFR Part 75, Appendix B, "Quality Assurance and Quality Control Procedure" [40 CFR 60.13]

(a) Quality control program

(b) Frequency of testing

(3) Data Reduction [40 CFR 60.13(h)]

The Permittee shall comply with the data reduction requirements of 40 CFR Part 75.10(d)(1).

- (4) 40 CFR Part 75, Appendix F, "Conversion Procedures" [A.A.C. R18-2-306.A.3.a]

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.

- e. Sulfur Dioxide Emissions Missing Data Supplemental Procedures

[40 CFR 60.47a(f), (h) and (j) and PSD Permit No. M170843S1-98, Attachment "B", Condition XV.A]

If the minimum data requirement specified in paragraph III.C.1.c(4) above cannot be met with the continuous monitoring system in use, the Permittee shall supplement SO₂ emission data with other monitoring systems approved by the Director or the following reference methods and procedures:

- (1) Reference Method 6 shall be used to determine the SO₂ concentration at the same location as the SO₂ monitor.
- (2) 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.
- (3) The procedures in Reference Method 19 shall be used to compute each 1-hour average concentration in ng/J (pounds per million Btu).
- (4) As alternatives, the reference methods and procedures described in 40 CFR 47a(j) may be used.

- f. The continuous opacity monitoring system shall meet the following requirements:

- (1) 40 CFR 60, Appendix B, Performance Specification 1, "Specification and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources" [40 CFR 60.13]

- (a) Apparatus
- (b) Installation Specifications
- (c) Design and Performance Specifications
- (d) Design Specifications Verification Procedure
- (e) Performance Specifications Verification Procedure
- (f) Equations

- (2) Quality assurance requirements:

- (a) Calibration Checks

The Permittee shall check the zero (or low-level value between 0 and 20% of span value) and span calibration drifts at least once daily in accordance with a written procedure. [40 CFR 60.13(d)(1)]

- (b) Zero and Span Drift Adjustments

i) The zero and span shall, as a minimum, be adjusted whenever the 24-hr zero drift or 24-hr span drift exceeds 4% opacity. [40 CFR 60.13(d)(1)]

ii) The system shall allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. [40 CFR 60.13(d)(1)]

- iii) The optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. [40 CFR 60.13(d)(1)]
- iv) For systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4% opacity. [40 CFR 60.13(d)(1)]

(c) System Checks

A method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam to provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photo detector assembly shall be used by the Permittee. [40 CFR 60.13(d)(2)]

(d) Minimum Frequency of Operation

Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS shall be in continuous operation and shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. [40 CFR 60.13(e)(1)]

(e) Data Reduction Procedures [40 CFR 60.13(h)]

- i) The Permittee shall reduce all data from the COMS to 6-minute averages. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period.
- ii) Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under the previous paragraph. An arithmetic or integrated average of all data may be used.

g. Recordkeeping and Reporting Requirements

- (1) 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 section 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. [40 CFR 60.7(f)]
- (2) The Permittee shall comply with all the recordkeeping and reporting requirements specified in 40 CFR Part 75 Subparts F and G, respectively. [40 CFR 60.7]
- (3) The Permittee shall record in a permanent log for each shutdown, the date and time Steam Boiler Unit 2 intends to begin dropping load to go off line. The log shall be retained for at least five (5) years following the date of each shutdown. [A.A.C. R18-2-306.A.4]
- (4) Quarterly excess emissions and monitoring system performance reports
 - (a) The Permittee shall submit an excess emissions and monitoring systems performance (MSP) report and/or a summary report form to the Department for every calendar quarter, unless the total duration of excess

emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the continuous monitoring system downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, in which case only the summary report form shall be submitted and the excess emissions report need not be submitted unless requested by the Department. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. [40 CFR 60.7(c) and (d), 45(g) and 49a(i)]

(b) The summary report form submission required in the preceding paragraph (a) shall be in the format specified in 40 CFR 60.7(d). Each excess emission and MSP report shall include the following information:

[40 CFR 60.7(c)]

- i) The magnitude of excess emissions computed, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.
- ii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the steam boiler unit. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.
- iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
- iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(c) Definitions

Periods of excess emissions and monitoring systems (MS) downtime that shall be reported are defined as follows:

i) Opacity

Opacity excess emissions are defined as any six-minute period during which the average opacity of emissions from Steam Boiler Unit 2 stack exceeds 20 percent opacity as measured by a continuous opacity monitor, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

[40 CFR 60.45(g)(1)]

ii) Sulfur Dioxide

Unless otherwise specified, SO₂ excess emissions are defined as any 30 successive boiler operating days for which, except for data obtained during startup, shutdown, or emergency conditions, the arithmetic average of all hourly emission rates for sulfur dioxide exceeds the applicable standard of 0.8 pounds per million Btu heat input, or the percentage sulfur dioxide reduction falls below the applicable standard of 90 percent, as required in paragraph III.A.3 of this attachment. The percentage sulfur dioxide reduction is determined based on the average inlet and average outlet SO₂ emission rates for the 30 successive boiler operating days.

[40 CFR 60.46a(e), (g) and PSD Permit No. M170843S1-98, Attachment "B", Condition XII.A]

iii) Nitrogen Oxides

NO_x excess emissions for Steam Boiler Unit 2 are defined as any three-hour period during which the average NO_x emissions (arithmetic average of three contiguous one-hour periods), as measured by a continuous emissions monitoring system, exceed the applicable standards specified in paragraph III.A.4 of this attachment. [40 CFR 60.45(g)(3)]

(5) Emission deviations reporting requirements

In addition to the quarterly reporting required under paragraph III.C.1.g(4) above, the Permittee shall report emissions exceeding an emission limitation or standard as deviations in accordance with Section XI.B of Attachment "A" of this permit. [A.A.C. R18-2-306.A.5.b]

(6) Subpart Da Reporting Requirements for Sulfur Dioxide

[PSD Permit No. M170843S1-98, Attachment "B", Condition XV.B.6]

The Permittee shall include in the quarterly reports required under paragraph III.C.1.g(4) the following additional information in regard to sulfur dioxide:

- (a) For sulfur dioxide, the following information shall be reported to the Director for each 24-hour period: [40 CFR 60.49a(b)]
- i) Calendar date;
 - ii) Average sulfur dioxide emission rates (ng/J or lb/million Btu) for each 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the emission standards; and description of corrective actions taken.
 - iii) Percent reduction of the potential combustion concentration of sulfur dioxide for each 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the emission standards; and description of corrective actions taken.
 - iv) Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 18 hours of operation of the facility; justification for not obtaining sufficient data; and description of corrective actions taken.
 - v) Identification of the time when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, emergency conditions, or other reasons, and justification for excluding data for reasons other than startup, shutdown, or emergency conditions.
 - vi) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.
 - vii) Identification of times when hourly averages have been obtained based on manual sampling methods.
 - viii) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.
 - ix) Description of any modifications to the continuous monitoring system which could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.
- (b) For the purpose of SO₂ emission reporting, minimum quantity of SO₂ emission data requires that the available data from CEMS for each boiler

operating day be at least 18 hours in at least 22 out of 30 successive boiler operating days. If the minimum quantity of emissions data is not obtained for any 30 successive boiler operating days, the following information shall be reported to the Director for that 30-day period:

[40 CFR 60.47a(f) and 49a(c)]

- i) The number of hourly averages available for the outlet emission rates (n_o) and the inlet emission rates (n_i) as applicable.
 - ii) The standard deviation of hourly averages for the outlet emission rates (s_o) and inlet emission rates (s_i) as applicable.
 - iii) The lower confidence limit for the mean outlet emission rate (E_o^*) and the upper confidence limit for the mean inlet emission rate (E_i^*) as applicable.
 - iv) The applicable potential combustion concentration.
 - v) The ratio of the upper confidence limit for the mean outlet emission rate (E_o^*) and the allowable emission rate (E_{std}) as applicable.
- (c) If the sulfur dioxide standards under paragraph III.A.3.a and b of this attachment are exceeded during emergency conditions because of control system malfunction, the Permittee shall submit a signed statement:
- [40 CFR 60.49a(d)]
- i) Indicating if emergency conditions existed and requirements under paragraph III.B.2.d (Emergency Procedures) of this attachment were met during each period, and
 - ii) Listing the following information:
 - a) Time periods the emergency condition existed;
 - b) Electrical output and demand on the owner or operator's electric utility system and the affected facility;
 - c) Amount of power purchased from interconnected neighboring utility companies during the emergency period;
 - d) Percent reduction in emissions achieved;
 - e) Atmospheric emission rate (ng/J) of the pollutant discharged; and
 - f) Actions taken to correct control system malfunction.
- (d) If fuel pretreatment credit toward the sulfur dioxide emission standard is claimed, the Permittee shall submit a signed statement:
- [40 CFR 60.49a(e)]
- i) Indicating what percentage cleaning credit was taken for the calendar quarter, and whether the credit was determined in accordance with the provisions of paragraph III.A.3.c(1) of this attachment and Method 19 (appendix A); and
 - ii) Listing the quantity, heat content, and date each pretreated fuel shipment was received during the previous quarter; the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the previous quarter.
- (e) For any periods for which sulfur dioxide emissions data are not available, the Permittee shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and affected facility during periods of data unavailability are to be compared with

operation of the control system and affected facility before and following the period of data unavailability. [40 CFR 60.49a(f)]

- (f) The Permittee shall submit a signed statement indicating whether: [40 CFR 60.49a(g)]
- i) The required sulfur dioxide continuous monitoring system calibration, span, and drift checks or other periodic audits have or have not been performed as specified.
 - ii) The data used to show compliance was or was not obtained in accordance with approved methods and procedures of this section and is representative of plant performance.
 - iii) The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.
 - iv) Compliance with the standards has or has not been achieved during the reporting period.

2. Compliance Assurance Monitoring for Particulate Matter [40 CFR 64]

Upon issuance of the permit, the Permittee shall conduct the compliance assurance monitoring required in Attachment "E" of this permit for Steam Boiler Unit 2.

D. Performance Testing Requirements

1. Opacity

The Permittee shall perform an annual opacity observation of the stack of Steam Boiler Unit 2 in accordance with EPA Reference Method 9. [40 CFR 60.8(a) and 46(b)(3)]

2. Particulate Matter and Nitrogen Oxides

The Permittee shall perform annual performance tests for particulate matter and nitrogen oxides emissions from the stack of Steam Boiler Unit 2, using the following reference methods and procedures: [40 CFR 60.8(a)]

a. Particulate Matter

EPA Reference Method 5 or 5B shall be used to determine the particulate matter concentration (C) at the stack of Steam Boiler Unit 2. [40 CFR 60.46(b)(2)]

b. Nitrogen Oxides

EPA Reference Method 7 shall be used to determine the nitrogen oxides concentration (C) at the stack of Steam Boiler Unit 2. [40 CFR 60.46(b)(5)]

c. Emission Rate

For the purpose of compliance determination, the emission rate (E) of PM or NOx shall be computed for each run using the following equation: [40 CFR 60.46(b)(1)]

$$E = C F_d (20.9)/(20.9 - \%O_2)$$

E = emission rate of pollutant, ng/J (1b/million Btu).

C = concentration of pollutant, ng/dscm (1b/dscf).

%O₂ = oxygen concentration, percent dry basis.

F_d = factor as determined from Method 19.

- d. The Permittee may conduct the annual performance tests using alternatives described in 40 CFR 60.46(d).

3. Sulfur Dioxide

[PSD Permit No. M170843S1-98]

a. Compliance determination procedures and methods

- (1) The Permittee shall determine compliance with the SO₂ standards specified in paragraphs III.A.3.a and b of this attachment as follows:

- (a) The percent of potential SO₂ emissions (%Ps) to the atmosphere shall be computed using the following equation: [40 CFR 60.48a(c)(1)]

$$\%Ps = [(100 - \%Rf) (100 - \%Rg)] / 100$$

where:

%Ps=percent of potential SO₂ emissions, percent

%Rf=percent reduction from fuel pretreatment, percent

%Rg=percent reduction by SO₂ control system, percent

- (b) The procedures in EPA Reference Method 19 may be used to determine percent reduction (%Rf) of sulfur by such processes as fuel pretreatment (physical coal cleaning, hydrodesulfurization of fuel oil, etc.), coal pulverizes, and bottom and fly ash interactions. This determination is optional. [40 CFR 60.48a(c)(2)]

- (c) The procedures in EPA Reference Method 19 shall be used to determine the percent SO₂ reduction (%Rg) of any SO₂ control system. [40 CFR 60.48a(c)(3)]

- (d) The appropriate procedures in EPA Reference Method 19 shall be used to determine the emission rate. [40 CFR 60.48a(c)(4)]

- (e) The continuous monitoring system required in paragraph III.C.1.c of this attachment shall be used to determine the concentrations of SO₂ and O₂. [40 CFR 60.48a(c)(5)]

- (2) Compliance with the sulfur dioxide emission limitations and percentage reduction requirements under paragraphs III.A.3.a and b of this attachment shall be based on the average emission rate for 30 successive boiler operating days. A separate performance test shall be completed at the end of each boiler operating day, and a new 30 day average emission rate for sulfur dioxide and a new percent reduction for sulfur dioxide shall be calculated to show compliance with the standards. [40 CFR 60.46a(e)]

- (3) Compliance shall be determined by calculating the arithmetic average of all hourly emission rates for SO₂ for the 30 successive boiler operating days, except for data obtained during startup, shutdown, or the emergency conditions defined in 40 CFR 60.41a. Compliance with the percentage reduction requirement for SO₂ shall be determined based on the average inlet and average outlet SO₂ emission rates for the 30 successive boiler operating days. [40 CFR 60.46a(g)]

- (4) The Permittee shall obtain SO₂ emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If the Permittee has not obtained the minimum quantity, compliance of Steam Boiler Unit 2 with the SO₂ emission requirements under paragraphs III.A.3.a and b of this attachment for the day on which the 30 day period ends may be determined by the Director by following the applicable procedures in section 7 of EPA Reference Method 19. [40 CFR 60.46a(h)]

E. Permit Shield

[A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance of the affected sources subject to this Section with the applicable requirements prescribed under 40 CFR 60.42, 40 CFR 60.43, 40 CFR 60.44, 40 CFR 60.45, and 40 CFR 60.46 for PM and NO_x, and 40 CFR 60.41a, 40 CFR 60.43a, 40 CFR 60.46a, 40 CFR 60.47a, 40 CFR 60.48a, 40 CFR 60.49a and PSD Permit No.M170843S1-98 for SO₂.

IV. COMBINED OPERATION OF STEAM BOILER UNITS 2 AND 3

A. Emission Limits/Standards

1. The Permittee shall not cause to be discharged any gases from the common stack of Steam Boiler Units 2 and 3 which contain sulfur dioxide in a megawatt weighted average over any consecutive three-hour period, as measured by the continuous emission monitoring systems, in excess of 0.8 pounds per million Btu.
[PSD Permit No. M170843S1-98, Attachment "B", Condition XII.A]
2. When SO₂ emissions from the common stack of Steam Boiler Units 2 and 3 were caused to exceed the limit specified in the preceding paragraph IV.A.1 of this attachment by malfunction(s) of the Steam Boiler Unit 2 or its associated air pollution control equipment, operation of the Unit 3 portion of the common stack of Steam Boiler Units 2 and 3 shall be included in the excess emissions reporting under Section XI.A, Attachment "A" of this permit.
[PSD Permit No. M170843S1-98, Attachment "B", Condition XII.C]
3. During all times described in paragraph IV.A.2 of this attachment, the Permittee shall load compliance coal, as defined in paragraph I.B.1 of this attachment, to the silos of Steam Boiler Unit 3 in the next and subsequent coal loadings. Compliance coal shall be combusted in Steam Boiler Unit 3 for a sufficient period of time equal to that for which Steam Boiler Unit 2 has malfunctioned as defined in the preceding paragraph A.2 of this subsection. The amount of compliance coal to be loaded shall be determined by Equation 1 below:
[PSD Permit No. M170843S1-98, Attachment "B", Condition XII.C]

Equation 1

$$C = X (280) (0.54)$$

where

C = amount of compliance coal to be loaded (tons).

X = length of time that the Steam Boiler Unit 2 generator breaker is open or the length of time the emission limit in paragraph 1 above was exceeded, whichever is greater, or the length of time the emission limit in paragraph 1 above was exceeded due to the malfunction of the Steam Boiler Unit 2 air pollution control equipment (hours).

280 = peak gross load of Steam Boiler Unit 3 (megawatts).

0.54 = ratio of typical tons of coal burned to produce one megawatt of electrical energy for one hour.

Compliance with the compliance coal loading procedures above shall be deemed to meet the requirements of A.A.C. R18-2-310 (A) (4) and (5), as well as the requirement of minimizing emissions as per 40 CFR 60.11(d).

B. Monitoring, Recordkeeping and Reporting Requirements

1. The Permittee shall comply with all the monitoring, recordkeeping and reporting (MRR) requirements in Sections III.C and V.C of this attachment, set forth individually for Steam Boiler Units 2 and 3. [PSD Permit No. M170843S1-98, Attachment "B", Condition XV.A]
2. In addition to the MRR requirements for each unit, the Permittee shall submit to the Department for every calendar quarter a written report of sulfur dioxide emissions from the common stack of Steam Boiler Units 2 and 3. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. The reports shall
 - a. Demonstrate the continuous compliance of the combined operation of Steam Boiler Units 2 and 3 with the 0.8 pounds per million Btu sulfur dioxide emission limitation in paragraph IV.A.1 of this attachment on a three-hour rolling average,
 - b. Set forth the hourly sulfur dioxide emission rate in pounds per million Btu for each portion of the common stack of the Steam Boiler Units 2 and 3, and the megawatt weighted average of the sulfur dioxide emissions from the two portions for each hour, and
 - c. Include the three-hour rolling average sulfur dioxide emissions, on an hourly basis, from the common stack of Steam Boiler Units 2 and 3 in pounds per million Btu for each rolling three-hour period during each quarterly reporting period. [PSD Permit No. M170843S1-98, Attachment "B", Condition XV.B]
3. The Permittee shall record and maintain a file of each loading of compliance coal to the silos of Steam Boiler Unit 3. The file shall contain the date and amount of each load. [A.A.C. R18-2-306.A.3.c]

C. Permit Shield [A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with the applicable conditions of PSD Permit No. M170843S1-98, Attachment "B" for the affected sources subject to this Section.

V. STEAM BOILER UNIT 3

A. Emission Limits/Standards

1. Opacity Standard

The opacity of emissions from the stack of Steam Boiler Unit 3 shall not be greater than 20 percent at all times except for periods of startup, shutdown, and malfunction as defined in paragraphs I.B.3, 4 and 5 of this attachment, and for one six-minute period per hour of not more than 27 percent opacity. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with the opacity standard. [40 CFR 60.42(a)(2), 60.11(c) and 60.11(e)(1)]

2. Particulate Matter Standard

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 3, any gases which contain particulate matter in excess of 43 nanogram per joule heat input (0.10 lb per million Btu) derived from fossil fuel.

[40 CFR 60.42(a)(1)]

3. Sulfur Dioxide Standard

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 3 any gases which contain sulfur dioxide in excess of 520 nanogram per joule heat input (1.2 pounds per million Btu) derived from solid fossil fuel, or 340

nanogram per joule heat input (0.8 pounds per million Btu) derived from liquid fossil fuel. [A.A.C. R18-2-903.3.c.i & ii]

4. Nitrogen Oxide Standard

a. Coal

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 3 any gases which contain nitrogen oxides, expressed as NO₂ in excess of 300 nanogram per joule heat input (0.70 lb per million Btu) derived from solid fossil fuel. [40 CFR 60.44(a)(3)]

b. Combination Fuels

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 3, when different fossil fuels are burned simultaneously in any combination, any gases which contain nitrogen oxides in excess of the applicable standard (in ng/J) derived using the following proration formula: [40 CFR 60.44(b)]

$$PSNOX = \frac{w(260) + x(86) + y(130) + z(300)}{w + x + y + z}$$

Where:

PSNOX = prorated standard for nitrogen oxides when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

w = percentage of total heat input derived from lignite;

x = percentage of total heat input derived from gaseous fossil fuel;

y = percentage of total heat input derived from liquid fossil fuel; and

z = percentage of total heat input derived from solid fossil fuel (except lignite).

5. Fuel Limitation

[Installation Permit No. 1037]

The Permittee shall burn only the following fuels in Steam Boiler Unit 3:

- a. Coal;
- b. No. 2 fuel oil for startup and stabilization.

B. Air Pollution Control Requirements

1. Particulate matter control

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.e]

a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, operate and maintain Steam Boiler Unit 3 and its electrostatic precipitators (ESPs) in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

b. In the event that a fabric filter control device is commissioned at Steam Boiler Unit 3 to replace the current ESPs for better PM removal performance, the Permittee shall

(1) Notify the Director within 30 days of initial startup of the new fabric filter;

(2) Operate and maintain at all times, including periods of startup, shutdown and malfunction, to the extent practicable, Steam Boiler Unit 3 and the fabric

filter in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

2. Sulfur Dioxide

[A.A.C. R18-2-331.A.3.e]

In the event that a lime slurry flue gas desulfurization (FGD) system is commissioned at Steam Boiler Unit 3 for better SO₂ removal performance, the Permittee shall

- a. Notify the Director within 30 days of initial startup of the new lime slurry FGD system;
- b. Operate and maintain at all times, including periods of startup, shutdown and malfunction, to the extent practicable, Steam Boiler Unit 3 and the lime slurry FGD system in a manner consistent with good air pollution control practice for minimizing sulfur dioxide emissions.

3. Operation Procedures

a. Startup

[40 CFR 60.11(d)]

During startups of Steam Boiler Unit 3, the electrostatic precipitators (ESPs) of the unit shall be placed in service as soon as practicable, but no more than one hour after fires are in the boiler and the flue gas temperature measured at the air preheater gas inlet has reached 200 degree Fahrenheit.

During startups of Steam Boiler Unit 3 with fabric filter control device and lime slurry FGD system in use, the fabric filter shall be placed in service before startup of any boiler forced draft or induced draft fan. The fabric filter may be removed from service just prior to igniting oil fires (startup fuel) but must be returned to service before coal fires are placed in the boiler or within one hour after the flue gas temperature measured at the air preheater gas outlet has reached 200 degrees Fahrenheit, whichever occurs first. The FGD system shall be placed in service after the fabric filter is placed in service, and before coal fires are in the boiler.

b. Shutdown

[40 CFR 60.11(d)]

During shutdowns of Steam Boiler Unit 3, the ESPs of the unit shall remain in service until fires in the boiler are out. When fires in the boiler are out, the ESPs are automatically taken out of service. The ESPs shall remain out of service until boiler air flow is taken to greater than 30 percent of capacity for six minutes to purge the ESPs. The ESPs shall then be returned to service and shall not be taken out of service until just prior to the boiler forced draft fans and induced draft fans being turned off.

During shutdowns of Steam Boiler Unit 3 with fabric filter control device and lime slurry FGD system in use, the fabric filter shall remain in service until after the boiler forced draft fans and induced draft fans have been turned off. The FGD system shall remain in service until coal fires in the boiler are out.

c. Malfunction

[40 CFR 60.11(d)]

For Steam Boiler Unit 3 with any malfunction of its ESPs that exceeds four hours, if fires are in the boiler, the Permittee shall reduce the unit's load so that the ESP banks in service can properly process and treat the volume of flue gas being produced. If a malfunction makes it impossible to properly process and treat the volume of flue gas being produced, the unit shall be shut down.

For Steam Boiler Unit 3 with any malfunction of its fabric filter that exceeds four hours, if fires are in the boiler, the Permittee shall reduce the unit's load so that the fabric filter compartments in service can properly process and treat the volume of

flue gas being produced. If a malfunction makes it impossible to properly process and treat the volume of flue gas being produced, the unit shall be shut down.

C. Monitoring, Recordkeeping and Reporting Requirements

1. Continuous Monitoring for Opacity, SO₂ and NO_x Emissions, and O₂/CO₂ Content

a. Opacity [40 CFR 60.45(a)]

The Permittee shall calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions.

b. NO_x [A.A.C. R18-2-306.A.3.c]

The Permittee shall employ the 40 CFR 75 NO_x CEMS installed on Steam Boiler Unit 3 for the purpose of periodic monitoring of the nitrogen oxides emissions under this permit.

c. SO₂ and O₂ [PSD Permit No. M170843S1-98, Attachment "B", Condition XV.A]

(1) The Permittee shall calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring sulfur dioxide emissions from the stack of Steam Boiler Unit 3. [40 CFR 60.47a(b)]

(2) The Permittee shall calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring the oxygen content of the flue gases at the location where SO₂ emissions are monitored. [40 CFR 60.47a(d)]

(3) The Permittee shall operate the SO₂ and O₂/CO₂ continuous monitoring systems and record data during all periods of operation of Steam Boiler Unit 3 including periods of startup, shutdown, malfunction, or emergency conditions, except for continuous monitoring system breakdown, repairs, calibration checks, and zero and span adjustments. [40 CFR 60.47a(e)]

d. The continuous emission monitoring systems for SO₂, NO_x and O₂/CO₂ shall meet the following requirements:

(1) 40 CFR Part 75, Appendix A, "Specification and Test Procedures" [40 CFR 60.13 for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

- (a) Installation and measurement location
- (b) Equipment specifications
- (c) Performance specifications
- (d) Data acquisition and handling systems
- (e) Calibration gas
- (f) Certifications tests and procedures
- (g) Calculations

(2) 40 CFR Part 75, Appendix B, "Quality Assurance and Quality Control Procedure" [40 CFR 60.13 for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

- (a) Quality control program
- (b) Frequency of testing

(3) Data Reduction [40 CFR 60.13(h) for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

The Permittee shall comply with the data reduction requirements of 40 CFR Part 75.10(d)(1).

(4) 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.

e. Sulfur Dioxide Emissions Missing Data Supplemental Procedures

[40 CFR 60.47a(f), (h) and (j) and PSD Permit No. M170843S1-98, Attachment "B", Condition XV.A]

In addition to the requirements specified in the preceding paragraph V.C.1.d of this attachment, the Permittee shall obtain the SO₂ emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with the continuous monitoring system in use, the Permittee shall supplement SO₂ emission data with other monitoring systems approved by the Director or the following reference methods and procedures:

- (1) Reference Method 6 shall be used to determine the SO₂ concentration at the same location as the SO₂ monitor.
- (2) 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.
- (3) The procedures in Reference Method 19 shall be used to compute each 1-hour average concentration in ng/J (pounds per million Btu).
- (4) As alternatives, the reference methods and procedures described in 40 CFR 47a(j) may be used.

f. The continuous opacity monitoring system shall meet the following requirements:

- (1) 40 CFR 60, Appendix B, Performance Specification 1, "Specification and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources" [40 CFR 60.13]

- (a) Apparatus
- (b) Installation Specifications
- (c) Design and Performance Specifications
- (d) Design Specifications Verification Procedure
- (e) Performance Specifications Verification Procedure
- (f) Equations

(2) Quality assurance requirements:

(a) Calibration Checks

The Permittee shall check the zero (or low-level value between 0 and 20% of span value) and span calibration drifts at least once daily in accordance with a written procedure. [40 CFR 60.13(d)(1)]

(b) Zero and Span Drift Adjustments

i) The zero and span shall, as a minimum, be adjusted whenever the 24-hr zero drift or 24-hr span drift exceeds 4% opacity. [40 CFR 60.13(d)(1)]

ii) The system shall allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. [40 CFR 60.13(d)(1)]

iii) The optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. [40 CFR 60.13(d)(1)]

- iv) For systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4% opacity. [40 CFR 60.13(d)(1)]

(c) System Checks

A method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam to provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photo detector assembly shall be used by the Permittee. [40 CFR 60.13(d)(2)]

(d) Minimum Frequency of Operation

Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS shall be in continuous operation and shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. [40 CFR 60.13(e)(1)]

(e) Data Reduction Procedures [40 CFR 60.13(h)]

- i) The Permittee shall reduce all data from the COMS to 6-minute averages. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period.
- ii) Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under the previous paragraph. An arithmetic or integrated average of all data may be used.

g. Recordkeeping and Reporting Requirements

- (1) 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 section 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. [40 CFR 60.7(f)]
- (2) The Permittee shall comply with all the recordkeeping and reporting requirements of 40 CFR Part 75 Subparts F and G, respectively. [40 CFR 60.7]
- (3) The Permittee shall record in a permanent log for each shutdown, the date and time Steam Boiler Unit 3 intends to begin dropping load to go off line. The log shall be retained for at least five (5) years following the date of each shutdown. [A.A.C. R18-2-306.A.4]
- (4) Quarterly excess emissions and monitoring system performance reports
 - (a) The Permittee shall submit an excess emissions and monitoring systems performance (MSP) report and/or a summary report form to the Department for every calendar quarter, unless the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the continuous monitoring system downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, in which case only the

summary report form shall be submitted and the excess emissions report need not be submitted unless requested by the Department. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. [40 CFR 60.7(c) and (d), 45(g) and 49a(i)]

(b) The summary report form submission required in the preceding paragraph (a) shall be in the format specified in 40 CFR 60.7(d). Each excess emission and MSP report shall include the following information: [40 CFR 60.7(c)]

- i) The magnitude of excess emissions computed, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.
- ii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the steam boiler unit. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.
- iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
- iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(c) Definitions

Periods of excess emissions and monitoring systems (MS) downtime that shall be reported are defined as follows:

i) Opacity

Opacity excess emissions are defined as any six-minute period during which the average opacity of emissions from Steam Boiler Unit 3 stack exceeds 20 percent opacity as measured by a continuous opacity monitor, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

[40 CFR 60.45(g)(1)]

ii) Sulfur Dioxide

SO₂ excess emissions are defined as any three-hour period during which, the average SO₂ emissions from Steam Boiler Unit 3 stack (arithmetic average of three contiguous one-hour periods) as measured by a continuous monitoring system exceed 1.2 pounds per million Btu for solid fossil fuel or 0.8 pounds per million Btu for liquid fossil fuel, as specified in paragraph V.A.3 of this attachment.

[40 CFR 60.45(g)(2)]

(5) Emission deviations reporting requirements

In addition to the quarterly reporting required under paragraph V.C.1.g(4) above, the Permittee shall report emissions exceeding an emission limitation or standard as deviations in accordance with Section XI.B of Attachment "A" of this permit. [A.A.C. R18-2-306.A.5.b]

2. Compliance Assurance Monitoring for Particulate Matter

[40 CFR 64]

Upon issuance of the permit, the Permittee shall conduct the compliance assurance monitoring required in Attachment "E" of this permit for Steam Boiler Unit 3.

D. Performance Testing Requirements

1. Opacity

The Permittee shall perform an annual opacity observation of the stack of Steam Boiler Unit 3 in accordance with EPA Reference Method 9. [40 CFR 60.8(a) and 46(b)(3)]

2. Particulate Matter, Sulfur Dioxide and Nitrogen Oxides

The Permittee shall perform annual performance tests for emissions of particulate matter, sulfur dioxide, and nitrogen oxides from the stack of Steam Boiler Unit 3, using the following reference methods and procedures: [40 CFR 60.8(a)]

a. Particulate Matter

EPA Reference Method 5 or 5B shall be used to determine the particulate matter concentration (C) at the stack of Steam Boiler Unit 3. [40 CFR 60.46(b)(2)]

b. Sulfur Dioxide

EPA Reference Method 6 shall be used to determine the SO₂ concentration at the stack of Steam Boiler Unit 3. [40 CFR 60.46(b)(4)]

c. Nitrogen Oxides

EPA Reference Method 7 shall be used to determine the nitrogen oxides concentration (C) at the stack of Steam Boiler Unit 3. [40 CFR 60.46(b)(5)]

d. Emission Rate

For the purpose of compliance determination, the emission rate (E) of PM or NO_x shall be computed for each run using the following equation: [40 CFR 60.46(b)(1)]

$$E = C Fd (20.9)/(20.9 - \%O_2)$$

E = emission rate of pollutant, ng/J (1b/million Btu).

C = concentration of pollutant, ng/dscm (1b/dscf).

%O₂ = oxygen concentration, percent dry basis.

Fd = factor as determined from Method 19.

e. The Permittee may conduct the annual performance tests using alternatives described in 40 CFR 60.46(d).

E. Permit Shield

[A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with the applicable requirements prescribed under A.A.C. R18-2-903.3.c.i & ii, 40 CFR 60.42, 40 CFR 60.43, 40 CFR 60.44, 40 CFR 60.45, 40 CFR 60.46, and PSD Permit No.M170843S1-98 for the affected sources subject to this Section.

VI. STEAM BOILER UNIT 4

A. Emission Limits/Standards

1. Opacity Standard

The opacity of emissions from the stack of Steam Boiler Unit 4 shall not be greater than 20 percent at all times except for periods of startup, shutdown, and malfunction as defined in paragraphs I.B.3, 4 and 5 of this attachment, and for one six-minute period per hour of not more than 27 percent opacity. Opacity readings of portions of plumes

which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with the opacity standard. [40 CFR 60.42(a)(2), 60.11(c) and 60.11(e)(1)]

2. Particulate Matter Standard

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 4 any gases which contain particulate matter in excess of 43 nanogram per joule heat input (0.10 lb per million Btu) derived from fossil fuel.

[40 CFR 60.42(a)(1)]

3. Sulfur Dioxide Standard

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 4 any gases which contain sulfur dioxide in excess of 340 nanograms per joule heat input (0.8 pounds per million Btu) derived from solid or liquid fossil fuel.

[A.A.C. R18-2-903.1 and 40 CFR 60.43(a)(1)]

4. Nitrogen Oxide Standard

a. Coal

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 4 any gases which contain nitrogen oxides, expressed as NO₂ in excess of 300 nanogram per joule heat input (0.70 lb per million Btu) derived from solid fossil fuel.

[40 CFR 60.44(a)(3)]

b. Combination Fuels

The Permittee shall not cause to be discharged into the atmosphere from the stack of Steam Boiler Unit 4, when different fossil fuels are burned simultaneously in any combination, any gases which contain nitrogen oxides in excess of the applicable standard (in ng/J) derived using the following prorating formula:

[40 CFR 60.44(b)]

$$PSNOX = \frac{w(260) + x(86) + y(130) + z(300)}{w + x + y + z}$$

Where:

PSNOX = prorated standard for nitrogen oxides when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

w = percentage of total heat input derived from lignite;

x = percentage of total heat input derived from gaseous fossil fuel;

y = percentage of total heat input derived from liquid fossil fuel; and

z = percentage of total heat input derived from solid fossil fuel (except lignite).

5. Fuel Limitation

[Installation Permit No. 1085]

The Permittee shall burn only the following fuels in Steam Boiler Unit 4:

a. Coal;

b. No. 2 fuel oil for startup and stabilization;

c. Co-firing of coal and used oil or used oil fuel subject to the requirements set forth in Conditions VI.A.6.a and b of this attachment below.

6. Used Oil and Used Oil Fuel

a. Specifications

[A.R.S. §49-426.G.1]

The used oil or used oil fuel allowed to be burned shall meet the following conditions:

- (1) The flash point of the oil does not fall below 100 °F;
- (2) The oil does not have following constituents in excess of the following allowable levels:
 - (a) Arsenic 5 ppm
 - (b) Cadmium 2 ppm
 - (c) Chromium 10 ppm
 - (d) Lead 100 ppm
 - (e) PCBs 2 ppm

b. Limitations

[A.R.S. §49-426.G.1]

- (1) The Permittee shall not burn used oil and/or used oil fuel at a feed rate greater than twenty (20) gallons per minute while co-firing with coal in Steam Boiler Unit 4 at a minimum of 230 gross MW; and
- (2) The Permittee shall not burn used oil and/or used oil fuel in excess of 200,000 gallons per year.

B. Air Pollution Control Requirements

1. Control Requirements

a. Particulate matter

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.e]

- (1) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, operate and maintain Steam Boiler Unit 4 and its electrostatic precipitators (ESPs) in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.
- (2) In the event that a fabric filter control device is commissioned at Steam Boiler Unit 4 to replace the current ESPs for better PM removal performance, the Permittee shall
 - (a) Notify the Director within 30 days of initial startup of the new fabric filter;
 - (b) Operate and maintain at all times, including periods of startup, shutdown and malfunction, to the extent practicable, Steam Boiler Unit 4 and the fabric filter in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

b. Sulfur dioxide

[Installation Permit No. 1247, 40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.e]

- (1) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, operate and maintain Steam Boiler Unit 4 and its lime slurry flue gas desulfurization (FGD) system in a manner consistent with good air pollution control practice for minimizing sulfur dioxide emissions.
- (2) In the event that a new lime slurry FGD system is commissioned at Steam Boiler Unit 4 to replace the current system for better SO₂ removal performance, the Permittee shall

- (a) Notify the Director within 30 days of initial startup of the new lime slurry FGD system;
- (b) Operate and maintain at all times, including periods of startup, shutdown and malfunction, to the extent practicable, Steam Boiler Unit 4 and the lime slurry FGD system in a manner consistent with good air pollution control practice for minimizing sulfur dioxide emissions.

2. Operation Procedures

a. Startup

[40 CFR 60.11(d)]

During startups of Steam Boiler Unit 4, the electrostatic precipitators (ESPs) of the unit shall be placed in service as soon as practicable, but no more than one hour after fires are in the boiler and the flue gas temperature measured at the air preheater gas inlet has reached 200 degree Fahrenheit. The lime slurry FGD system of the unit shall be placed in service after the ESPs are placed in service, and before coal fires are in the boiler.

During startups of Steam Boiler Unit 4 with fabric filter control device in use, the fabric filter shall be placed in service before startup of any boiler forced draft or induced draft fan. The fabric filter may be removed from service just prior to igniting oil fires (startup fuel) but must be returned to service before coal fires are placed in the boiler or within one hour after the flue gas temperature measured at the air preheater gas outlet has reached 200 degrees Fahrenheit, whichever occurs first. The lime slurry FGD system of the unit shall be placed in service after the fabric filter is placed in service, and before coal fires are in the boiler.

b. Shutdown

[40 CFR 60.11(d)]

During shutdowns of Steam Boiler Unit 4, the ESPs of the unit shall remain in service until fires in the boiler are out. When fires in the boiler are out, the ESPs are automatically taken out of service. The ESPs shall remain out of service until boiler air flow is taken to greater than 30 percent of capacity for six minutes to purge the ESPs. The ESPs shall then be returned to service and shall not be taken out of service until just prior to the boiler forced draft fans and induced draft fans being turned off. The lime slurry FGD system of the unit shall remain in service until coal fires in the boiler are out.

During shutdowns of Steam Boiler Unit 4 with fabric filter control device in use, the fabric filter shall remain in service until after the boiler forced draft fans and induced draft fans have been turned off. The lime slurry FGD system of the unit shall remain in service until coal fires in the boiler are out.

c. Malfunction

[40 CFR 60.11(d)]

For Steam Boiler Unit 4 with any malfunction of its ESPs that exceeds four hours, if fires are in the boiler, the Permittee shall reduce the unit's load so that the ESP banks in service can properly process and treat the volume of flue gas being produced. If a malfunction makes it impossible to properly process and treat the volume of flue gas being produced, the unit shall be shut down. During malfunction of the unit's FGD system, any coal loaded to the unit's conveyor system shall be compliance coal as defined in paragraph I.B.1 of this attachment, provided however that, if regular coal is being loaded to the unit's conveyor system when the malfunction occurs, the Permittee shall cease the loading of regular coal to the conveyor system as soon as practicable, but in no event later than one (1) hour.

For Steam Boiler Unit 4 with any malfunction of its fabric filter that exceeds four hours, if fires are in the boiler, Permittee shall reduce the unit's load so that the fabric filter compartments in service can properly process and treat the volume of flue gas being produced. If a malfunction makes it impossible to properly process and treat the volume of flue gas being produced, the unit shall be shut down. During malfunction of the unit's FGD system, any coal loaded to the unit's conveyor system shall be compliance coal as defined in paragraph I.B.1 of this attachment, provided however that, if regular coal is being loaded to the unit's conveyor system when the malfunction occurs, the Permittee shall cease the loading of regular coal to the conveyor system as soon as practicable, but in no event later than one (1) hour.

C. Monitoring, Recordkeeping and Reporting Requirements

1. Continuous Monitoring for Opacity, SO₂ and NO_x Emissions, and O₂/CO₂ Content

- a. Opacity [40 CFR 60.45(a)]

The Permittee shall calibrate, maintain, and operate continuous monitoring systems for measuring the opacity of emissions.

- b. NO_x [A.A.C. R18-2-306.A.3.c]

The Permittee shall employ the 40 CFR 75 NO_x CEMS installed on Steam Boiler Unit 4 for the purpose of periodic monitoring of the nitrogen oxides emissions under this permit.

- c. SO₂ and O₂ [40 CFR 60.45(a)]

The Permittee shall calibrate, maintain, and operate continuous monitoring systems for measuring sulfur dioxide emissions and oxygen.

- d. The continuous emission monitoring systems for SO₂, NO_x and O₂/CO₂ shall meet the following requirements:

- (1) 40 CFR Part 75, Appendix A, "Specification and Test Procedures" [40 CFR 60.13 for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

- (a) Installation and measurement location
- (b) Equipment specifications
- (c) Performance specifications
- (d) Data acquisition and handling systems
- (e) Calibration gas
- (f) Certifications tests and procedures
- (g) Calculations

- (2) 40 CFR Part 75, Appendix B, "Quality Assurance and Quality Control Procedure" [40 CFR 60.13 for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

- (a) Quality control program
- (b) Frequency of testing

- (3) Data Reduction [40 CFR 60.13(h) for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

The Permittee shall comply with the data reduction requirements of 40 CFR Part 75.10(d)(1).

- (4) 40 CFR Part 75, Appendix F, "Conversion Procedures" [A.A.C. R18-2-306.A.3.a for SO₂ and O₂/CO₂ and A.A.C. R18-2-306.A.3.c for NO_x]

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.

- e. The continuous opacity monitoring system shall meet the following requirements:
- (1) 40 CFR 60, Appendix B, Performance Specification 1, "Specification and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources" [40 CFR 60.13]
 - (a) Apparatus
 - (b) Installation Specifications
 - (c) Design and Performance Specifications
 - (d) Design Specifications Verification Procedure
 - (e) Performance Specifications Verification Procedure
 - (f) Equations
 - (2) Quality assurance requirements:
 - (a) Calibration Checks

The Permittee shall check the zero (or low-level value between 0 and 20% of span value) and span calibration drifts at least once daily in accordance with a written procedure. [40 CFR 60.13(d)(1)]
 - (b) Zero and Span Drift Adjustments
 - i) The zero and span shall, as a minimum, be adjusted whenever the 24-hr zero drift or 24-hr span drift exceeds 4% opacity. [40 CFR 60.13(d)(1)]
 - ii) The system shall allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. [40 CFR 60.13(d)(1)]
 - iii) The optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. [40 CFR 60.13(d)(1)]
 - iv) For systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4% opacity. [40 CFR 60.13(d)(1)]
 - (c) System Checks

A method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam to provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photo detector assembly shall be used by the Permittee. [40 CFR 60.13(d)(2)]
 - (d) Minimum Frequency of Operation

Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS shall be in continuous operation and shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. [40 CFR 60.13(e)(1)]
 - (e) Data Reduction Procedures [40 CFR 60.13(h)]

- i) The Permittee shall reduce all data from the COMS to 6-minute averages. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period.
 - ii) Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under the previous paragraph. An arithmetic or integrated average of all data may be used.
- f. Recordkeeping and Reporting Requirements
 - (1) 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 section 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.
[40 CFR 60.7(f)]
 - (2) The Permittee shall comply with all the recordkeeping and reporting requirements of 40 CFR Part 75 Subparts F and G, respectively. [40 CFR 60.7]
 - (3) The Permittee shall record in a permanent log for each shutdown, the date and time Steam Boiler Unit 4 intends to begin dropping load to go off line. The log shall be retained for at least five (5) years following the date of each shutdown.
[A.A.C. R18-2-306.A.4]
 - (4) Quarterly excess emissions and monitoring systems performance reports
 - (a) The Permittee shall submit an excess emissions and monitoring systems performance (MSP) report and/or a summary report form to the Department for every calendar quarter, unless the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the continuous monitoring system downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, in which case only the summary report form shall be submitted and the excess emissions report need not be submitted unless requested by the Department. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.
[40 CFR 60.7(c) and (d) and 45(g)]
 - (b) The summary report form submission required in the preceding paragraph (a) shall be in the format specified in 40 CFR 60.7(d). Each excess emission and MSP report shall include the following information:
[40 CFR 60.7(c)]
 - i) The magnitude of excess emissions computed, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.
 - ii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

- iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
- iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(c) Definitions

Periods of excess emissions and monitoring systems (MS) downtime that shall be reported are defined as follows:

i) Opacity

Opacity excess emissions are defined as any six-minute period during which the average opacity of emissions from Steam Boiler Unit 4 stack exceeds 20 percent opacity as measured by a continuous opacity monitor, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

[40 CFR 60.45(g)(1)]

ii) Sulfur Dioxide

SO₂ excess emissions are defined as any three-hour period during which the average SO₂ emissions from Steam Boiler Unit 4 stack (arithmetic average of three contiguous one-hour periods) as measured by a continuous monitoring system exceed 0.8 pound per million Btu, as specified in paragraph VI.A.3 of this attachment.

[40 CFR 60.45(g)(2)]

(5) Emission deviations reporting requirements

In addition to the quarterly reporting required under paragraph VI.C.1.e(4) above, the Permittee shall report emissions exceeding an emission limitation or standard as deviations in accordance with Section XI.B of Attachment "A" of this permit.

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

2. Compliance Assurance Monitoring for Particulate Matter

[40 CFR 64]

Upon issuance of the permit, the Permittee shall conduct the compliance assurance monitoring required in Attachment "E" of this permit for Steam Boiler Unit 4.

D. Performance Testing Requirements

1. Opacity

The Permittee shall perform an annual opacity observation of the stack of Steam Boiler Unit 4 in accordance with EPA Reference Method 9.

[40 CFR 60.8(a) and 46(b)(3)]

2. Particulate Matter, Sulfur Dioxide and Nitrogen Oxides

The Permittee shall perform annual performance tests for emissions of particulate matter, sulfur dioxide, and nitrogen oxides from the stack of Steam Boiler Unit 4, using the following reference methods and procedures:

[40 CFR 60.8(a)]

a. Particulate Matter

EPA Reference Method 5 or 5B shall be used to determine the particulate matter concentration (C) at the stack of Steam Boiler Unit 4.

[40 CFR 60.46(b)(2)]

b. Sulfur Dioxide

EPA Reference Method 6 shall be used to determine the SO₂ concentration at the stack of Steam Boiler Unit 4. [40 CFR 60.46(b)(4)]

c. Nitrogen Oxides

EPA Reference Method 7 shall be used to determine the NO_x concentration at the stack of Steam Boiler Unit 4. [40 CFR 60.46(b)(5)]

d. Emission Rate

For the purpose of compliance determination, the emission rate (E) of PM, SO₂ or NO_x shall be computed for each run using the following equation:

[40 CFR 60.46(b)(1)]

$$E = C F_d (20.9)/(20.9 - \%O_2)$$

E = emission rate of pollutant, ng/J (1b/million Btu).

C = concentration of pollutant, ng/dscm (1b/dscf).

%O₂ = oxygen concentration, percent dry basis.

F_d = factor as determined from Method 19.

e. The Permittee may conduct the annual performance tests using alternatives described in 40 CFR 60.46(d).

3. Used Oil and Used Oil Fuel Testing

[A.R.S. §49-426.G.2]

The Permittee shall perform a semiannual sample test for the used oil and/or used oil fuel to be burned for flash point and concentrations (ppm) of Arsenic, Cadmium, Chromium, Lead, and PCBs, using the analytical methods specified in EPA Publication SW-846, Third Edition (document number 955-001-00000-1). All sample tests shall be conducted in the laboratories certified by the Arizona Department of Health Services.

E. Permit Shield

[A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with the applicable requirements prescribed under 40 CFR 60.42, 40 CFR 60.43, 40 CFR 60.44, 40 CFR 60.45, and 40 CFR 60.46 for the affected sources subject to this Section.

VII. COOLING TOWERS 3 AND 4

A. Emission Limits/Standards

1. Opacity Standard

The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from Cooling Tower 3 or 4 the opacity of which exceeds 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for an exceedance of any visible emissions requirements, such exceedance shall not constitute a violation. [A.A.C. R18-2-702.B and C]

2. Particulate Matter Standard

[A.A.C. R18-2-730.A.1(b)]

The Permittee shall not cause, allow or permit the emission of particulate matter from Cooling Tower 3 or 4 in excess of the amounts calculated by the following equation:

$$E = 55.0 P^{0.11} - 40$$

Where:

E = The maximum allowable particulate emissions rate in pounds-mass per hour;

P = The process weight rate in tons-mass per hour. The total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.

B. Monitoring, Recordkeeping and Reporting Requirements

The Permittee shall conduct a weekly Visible Emissions Observation Procedure for the cooling towers consistent with Condition I.I of this attachment. [A.A.C. R18-2-306.A.3.c]

C. Permit Shield

[A.A.C. R18-2-325]

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-702.B and 730.A.1(b) for the affected sources subject to this Section.

VIII. COAL PREPARATION PLANT

A. Emission Limits/Standards

1. Opacity Standard

The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from the coal preparation plant the opacity of which exceeds 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for an exceedance of any visible emissions requirements, such exceedance shall not constitute a violation. [A.A.C. R18-2-702.B and C]

2. Particulate Matter Standard

[A.A.C. R18-2-716.B & D]

The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in any one hour from the coal preparation plant in total quantities in excess of the amounts calculated by the following equation:

$$E = 55.0 P^{0.11} - 40$$

Where:

E = The maximum allowable particulate emissions rate in pounds-mass per hour.

P = The process weight rate in tons-mass per hour. The total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emissions of particulate matter.

B. Air Pollution Control Requirements

1. The Permittee shall operate and maintain water spraying/chemical dust suppression at the feeders during railcar unloading, at the screen feeders during screening, at the coal piles during stockpiling, and at the entrance and exit of the crusher during crushing, in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the coal preparation plant. [Installation Permit No. 1160]

2. The Permittee shall operate and maintain dust collectors installed for coal silos and conveyor transfer points of the Steam Boiler Units 1-4, in a manner consistent with good air pollution control practice for minimizing particulate emissions.

[Installation Permit No. 1160]

C. Monitoring, Recordkeeping and Reporting Requirements

1. Opacity

[A.A.C. R18-2-306.A.3.c]

The Permittee shall conduct a weekly Visible Emissions Observation Procedure for any point source, non-point sources, or fugitive emissions at the coal preparation plant consistent with Condition I.I of this attachment.

2. Particulate Matter

[A.A.C. R18-2-306.A.4]

a. The water spraying/chemical dust suppressing system and dust collectors for the coal preparation plant shall be operated and maintained in accordance with the manufacturer's specification. These specifications shall be on file and shall be readily available for inspection by the Department.

b. The Permittee shall maintain records of emissions control equipment maintenance performed on the water spraying/chemical dust suppressing system and dust collectors.

D. Permit Shield

[A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-702.B and 716.B and D for the affected sources subject to this Section.

IX. FLY ASH HANDLING FACILITY

A. Emission Limits/Standards

1. Opacity

The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from the fly ash silo vent the opacity of which exceeds 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for an exceedance of any visible emissions requirements, such exceedance shall not constitute a violation.

[A.A.C. R18-2-702.B and C]

2. Particulate Matter

[A.A.C. R18-2-730.A.1.b and B]

The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in any one hour from the fly ash silo baghouse exhaust vent in total quantities in excess of the amounts calculated by the following equation:

$$E = 55.0 P^{0.11} - 40$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

B. Air Pollution Control Requirements

The Permittee shall operate and maintain at all times the baghouse in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the fly ash silo vent.

[Installation Permit No. 1244]

C. Monitoring, Recordkeeping and Reporting Requirements

1. Opacity [A.A.C. R18-2-306.A.3.c]

The Permittee shall conduct a weekly Visible Emissions Observation Procedure for any point/non-point sources, or fugitive emissions at the fly ash handling facility consistent with Condition I.I of this attachment.

2. Particulate Matter
 - a. The Permittee shall maintain and operate the fly ash silo baghouse in accordance with the manufacturer's specification. These specifications shall be on file and shall be readily available for inspection by the Department. [Installation Permit No. 1244]
 - b. The Permittee shall maintain records of emissions control equipment maintenance performed on the fly ash silo baghouse. [Installation Permit No. 1244]

- D. Permit Shield [A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-702.B and A.A.C. R18-2-730.A.1.b and B for the affected sources subject to this Section.

X. LIME HANDLING AND SLAKING

- A. Emission Limits/Standards

1. Opacity

The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from the lime silo baghouse exhaust vent or the lime slaking wet scrubber exhaust vent the opacity of which exceeds 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for an exceedance of any visible emissions requirements, such exceedance shall not constitute a violation. [A.A.C. R18-2-702.B and C]

2. Particulate Matter [A.A.C. R18-2-730.A.1.a and B]

The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in any one hour from the lime silo baghouse exhaust vent or the lime slaking wet scrubber exhaust vent in total quantities in excess of the amounts calculated by the following equation:

$$E = 4.10 P^{0.67}$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

- B. Air Pollution Control Requirements

The Permittee shall, during operation of the lime handling and slaking facility, operate and maintain a wet scrubber on the lime slaker vent and a baghouse on the lime silo vent in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from those vents. [Installation Permit No. 1247]

- C. Monitoring, Recordkeeping and Reporting Requirements

1. Opacity [A.A.C. R18-2-306.A.3.c]

The Permittee shall conduct a weekly Visible Emissions Observation Procedure for any point/non-point sources, or fugitive emissions at the lime handling and slaking facility consistent with Condition I.I of this attachment.

2. Particulate Matter [A.A.C. R18-2-306.A.4]
- a. The Permittee shall maintain and operate the lime silos baghouse and lime slaker vent wet scrubber in accordance with the manufacturer's specification. These specifications shall be on file and shall be readily available for inspection by the Department.
 - b. The Permittee shall maintain records of emissions control equipment maintenance performed on the lime silo baghouse and lime slaker vent wet scrubber.

D. Permit Shield [A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-702.B and A.A.C. R18-2-730.A.1.a and B for the affected sources subject to this Section.

XI. FUGITIVE DUST SOURCES

A. Emission Limits/Standards

1. Open Areas, Roadways & Streets, Storage Piles, and Material Handling
- a. The Permittee shall not cause, allow or permit visible emissions from open areas, roadways and streets, storage piles or material handling in excess of 40% opacity measured in accordance with the Arizona Testing Manual, Reference Method 9. Open fires permitted under A.A.C. R18-2-602 are exempt from this requirement. [A.A.C. R18-2-610]
 - b. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:
 - (1) Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means; [A.A.C. R18-2-604.A]
 - (2) Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means; [A.A.C. R18-2-604.B]
 - (3) Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed; [A.A.C. R18-2-605.A]
 - (4) Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust; [A.A.C. R18-2-605.B]
 - (5) Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods when crushing, handling, or conveying material likely to give rise to airborne dust; [A.A.C. R18-2-606]

- (6) Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored; [A.A.C. R18-2-607.A]
- (7) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents; [A.A.C. R18-2-607.B]
- (8) Take reasonable precautions such as the use of dust suppressants before the cleaning of site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means; or [A.A.C. R18-2-804.B]
- (9) Any other method as proposed by the Permittee and approved by the Director. [A.A.C. R18-2-306.A.3.c]

2. Open Burning [A.A.C. R18-2-602]

Except as provided in A.A.C. R18-2-602.C(1), C(3), and C(4), and except when permitted to do so by either ADEQ or the local officer delegated the authority for issuance of open burning permits the Permittee shall not conduct open burning.

B. Monitoring, Recordkeeping and Reporting Requirements

1. Open Areas, Roadways & Streets, Storage Piles and Material Handling

The Permittee shall maintain records of the dates on which any of the activities listed in XI.A.1.b(1) through (9) of this attachment were performed and control measures adopted. [A.A.C. R18-2-306.A.4]

2. Weekly Opacity Survey

The Permittee shall conduct a weekly Visible Emissions Observation Procedure for all fugitive dust sources at open areas, roadways and streets, storage piles and material handling facilities consistent with Condition I.I of this attachment. [A.A.C. R18-2-306.A.3.c]

3. Open Burning

The monitoring requirements for Section XI.A.2 of this attachment may be complied with by maintaining copies of all open burning permits on file. [A.A.C. R18-2-306.A.4]

C. Permit Shield [A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-602, 604 through 607 and 804.B for the affected sources subject to this Section.

XII. OTHER PERIODIC ACTIVITIES

A. Emission Limits/Standards

1. Abrasive Blasting [A.A.C. R18-2-726]

a. The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include, but are not limited to:

- (1) Wet blasting;
- (2) Effective enclosures with necessary dust collecting equipment; or

(3) Any other method as proposed by the Permittee and approved by the Director.

- b. The Permittee shall not cause, allow or permit visible emissions from sandblasting or other abrasive blasting operations, the opacity of which exceeds 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for the exceedance of any visible emissions requirements, such exceedance shall not constitute a violation. [A.A.C. R18-2-702.B and C]

2. Use of Paints

While performing spray painting operations the Permittee shall comply with the following requirements:

- a. The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations other than architectural coating and spot painting shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray. [A.A.C. R18-2-727.A]
- b. The Permittee or his designated contractor shall not either:
- (1) Employ, apply, evaporate or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or
 - (2) Thin or dilute any architectural coating with a photochemically reactive solvent. [A.A.C. R18-2-727.B]
- c. For the purposes of parts b. and e. of this condition, a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in paragraphs (1) through (3) of this subsection, or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent: [A.A.C. R18-2-727.C]
- (1) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation- hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: five percent
 - (2) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: eight percent
 - (3) A combination of ethylbenzene, ketones having branched structures, trichloro-ethylene or toluene: 20 percent
- d. Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups or organic compounds described in subsection c(1) through c(3) of this condition, it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents. [A.A.C. R18-2-727.D]
- e. The Permittee shall not dispose by evaporation more than 1.5 gallons of photochemically reactive solvent in any one day. [SIP Provision R9-3-527.C]
- f. Visible emissions from spray painting operations shall not have an opacity greater than 40 percent before or on April 23, 2006 and 20 percent after April 23, 2006, measured in accordance with by EPA Reference Method 9. Where the presence of uncombined water is the only reason for the exceedance of any visible emissions requirements, such exceedance shall not constitute a violation. [A.A.C. R18-2-702.B and C]

3. Solvent Degreasing

The Permittee shall process, store, use, and transport materials including solvents or volatile compounds in such a manner and by such means that they will not evaporate, leak, escape, or be otherwise discharged into the atmosphere so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge, the installation and usage of such control methods, devices, or equipment shall be mandatory. [A.A.C. R18-2-730.F]

4. Roadway and Site Cleaning Machinery

The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. [A.A.C. R18-2-804.A]

5. Demolition/Renovation

The Permittee shall comply with all of the requirements of 40 CFR 61, Subpart M (National Emissions Standards for Hazardous Air Pollutants - Asbestos). [A.A.C. R18-2-1101.A.8]

6. Nonvehicle Air Conditioner Maintenance and/or Services

The Permittee shall comply with the applicable requirements of 40 CFR 82 - Subpart F (Protection of Stratospheric Ozone - Recycling and Emissions Reduction). [40 CFR 82, Subpart F]

B. Monitoring, Recordkeeping and Reporting Requirements

1. Abrasive Blasting

Each time an abrasive blasting project is conducted, the Permittee shall log in ink or in an electronic format, a record of the following:

- a. The date the project was conducted;
- b. The duration of the project; and
- c. Type of control measures employed.

2. Use of Paints

a. Each time a spray painting project is conducted, the Permittee shall log in ink or in an electronic format, a record of the following:

- (1) The date the project was conducted;
- (2) The duration of the project;
- (3) Type of control measures employed; and
- (4) Material Safety Data Sheets for all paints and solvents used in the project.

b. Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of part a. above.

3. Roadway and Site Cleaning Machinery

The Permittee shall keep a record of all emission related equipment maintenance activities performed on roadway and site cleaning machinery stationed at the facility as per manufacturer's specifications.

4. Demolition/Renovation

As a means of demonstrating compliance with condition XII.A.5 of this attachment, the Permittee shall keep a record of all relevant paperwork on file. The relevant paperwork shall include but not be limited to the “NESHAP Notification for Renovation and Demolition Activities” form, and all supporting documents.

5. Nonvehicle Air Conditioner Maintenance and/or Services

As a means of demonstrating compliance with condition XII.A.6 of this attachment, the Permittee shall keep a record of all relevant paperwork to the applicable requirements of 40 CFR 82 - Subpart F on file.

C. Permit Shield

[A.A.C. R18-2-325]

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-726, A.A.C. R18-2-702.B, A.A.C. R18-2-727, A.A.C. R18-2-730.F, and A.A.C. R18-2-804.A for the affected sources subject to this Section.

XIII. INTERNAL COMBUSTION ENGINES

A. Applicability

This Section applies to the following internal combustion engines as described in Attachment “C” of this permit: 750 KW Beloit Power Emergency Diesel Generator (S/N 604588-R1), 750 KW Beloit Power Emergency Diesel Generator (S/N 504588-R2), and 900 KW Beloit Power Emergency Diesel Generator (S/N 504637-R1).

B. Emission Limits/Standards

1. Particulate matter and opacity

- a. The Permittee shall not cause or allow to be discharged into the atmosphere from the internal combustion engines any smoke for any period greater than 10 consecutive seconds which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

[A.A.C. R18-2-719.E]

- b. The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel, from the internal combustion engines having a heat input rate of 4200 million Btu per hour or less, in excess of the amounts calculated by the following equation:

$$E = 1.02Q^{0.769}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

Q = the heat input in million BTU per hour.

[A.A.C. R18-2-719.C.1]

- c. For the purposes of Condition XIII.B.1.b above, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. Compliance tests shall be conducted during operation at the normal rated capacity of each unit. The total heat input of all operation generators and internal combustion engines on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted.

[A.A.C. R18-2-719.B]

2. Sulfur Dioxide

- a. The Permittee shall only burn low sulfur fuel oil in the internal combustion engines located at the facility. Low sulfur oil is defined as fuel oil containing less than 0.90% by weight of sulfur. [A.A.C.R18-2-719.H]
- b. The Permittee shall not emit or cause to be emitted into the atmosphere any gases containing sulfur dioxide in excess of 1.0 pound per million Btu heat input when low sulfur fuel oil is fired. [A.A.C.R18-2-719.F]

C. Monitoring, Recordkeeping and Reporting Requirements

1. Particulate Matter and Opacity

The Permittee shall conduct a weekly Visible Emissions Observation Procedure consistent with Condition I.I of this attachment, for any visible emissions emanating from all internal combustion engines subject to this Section. [A.A.C. R18-2-306.A.3.c]

2. Sulfur Dioxide

- a. The Permittee shall monitor the lower heating value of the fuel being combusted in the internal combustion engines. The Permittee shall maintain records of the lower heating value of the fuel fired in the internal combustion engines. This may be accomplished by maintaining on record a copy of fuel supplier certifications that specify the lower heating value of the fuel. [A.A.C. R18-2-306.A.3.c and A.A.C. R18-2-719.I]
- b. The Permittee shall report to the Director any daily period during which the sulfur content of the fuel being fired in the machine exceeds 0.8%. [A.A.C. R18-2-719.J and 306.A.3]

D. Permit Shield

[A.A.C. R18-2-325]

Compliance with the conditions of this Section shall be deemed compliance with A.A.C. R18-2-719.B, A.A.C. R18-2-719.C.1, A.A.C. R18-2-719.E, A.A.C. R18-2-719.F, A.A.C. R18-2-719.H, A.A.C. R18-2-719.I, and A.A.C. R18-2-719.J.

**ATTACHMENT “C”: EQUIPMENT LIST
Air Quality Control Permit No. 33500**

For

Arizona Public Service Company - Cholla Power Plant

Table C-1: Equipment List

Equipment	Operating Scenario	Quantity	Manufacturer	Model/Type	Serial Number	Date Installed	Rated Capacity
UNIT 1							
Boiler -Tangential fired furnace	Normal	1	Combustion Engineering	R	19537	1961	865K lbs/hr steam flow @1925 psig @1005 degrees F at superheater outlet
Coal Mills - bowl mills	Normal	4	Combustion Engineering	#633	60814 through 60817	1961	34,000 lbs/hr coal each
Scrubber/Absorber - Lime slurry	Normal	2 Flooded disc modules	Research Cottrell	--	--	1972	240,000 acfm each with combined 80% SO ₂ and 98.6% PM removal
Mechanical dust collector	Normal	1	Research Cottrell as retrofitted with Process Control Equipment internal components	--	--	1961 retrofitted in 1998	55% design efficiency @ 480,000 acfm at a gas density of 0.045 lbs/cf, grain loading of 6.0 gr/dscf, maximum 3.5” wg pressure drop, 2.2 sp. Gravity, with particulate distribution shown in EPA AP-42, Table 1.1.-5.
Absorber – Lime slurry	Alternate	2	URS	Tray Tower			240,000 acfm each with combined 90% SO ₂ removal
Fabric Filter	Alternate	1	Alstom	Pulse Jet			99.9% design efficiency
UNIT 2							
Boiler - Tangential fired furnace	Normal	1	Combustion Engineering	RR	7072	1974	2,015K lbs/hr steam @1990 psig @1005 degrees F at superheater outlet
Coal Mills - bowl mills	Normal	5	Combustion Engineering	#863	72806 through 72810	1974	94,400 lbs/hr coal each
Scrubber/Absorber	Normal	4 wet Venturi scrubber modules and 4 absorber towers	Research Cottrell	--	--	1974	413,500 acfm each with combined 90% SO ₂ and 98% PM removal.
Mechanical dust collector	Normal	1	Zurn	--	--	1974	Approx. 70% efficiency @ 248,000- 332,000 lbs/hr gas flow.
Emergency Diesel Generator	Normal	1	Beloit Power Systems	--	604588-R1	1974	750 KW @ 480 volts
UNIT 3							
Boiler - Tangential fired furnace	Normal	1	Combustion Engineering	RR	9272	1975	2,015K lbs/hr steam @1990 psig @1005 degrees F at superheater outlet

Equipment	Operating Scenario	Quantity	Manufacturer	Model/Type	Serial Number	Date Installed	Rated Capacity
Coal Mills - bowl mills	Normal	5	Combustion Engineering	#863	74817 through 74821	1975	94,400 lbs/hr coal each
Electrostatic Precipitator(hot sided ESP)	Normal	1	Universal Oil Products	--	72-250	1975	1,850K acfm gas flow 700 degrees F gas temperature 99% PM removal efficiency.
Absorber – Lime slurry	Alternate	1	TBD	Tray Tower			0.15 lbs/MMBtu design outlet emissions rate
Fabric Filter	Alternate	1	TBD	Pulse Jet			99.9% design efficiency
Emergency Diesel Generator	Normal	1	Beloit Power Systems	--	504588-R2	1975	750 KW @ 480 volts
Cooling tower	Normal	1	Marley	6516-3-6 Forced draft 7 cells	--	1975	140,000 gpm water flow
UNIT 4							
Boiler - Tangential fired furnace	Normal	1	Combustion Engineering	RR	5174	1978	2,830K lbs/hr steam @1990 psig @1005 degrees F at superheater outlet
Coal Mills - bowl mills	Normal	5	Combustion Engineering	#903	74840 through 74844	1978	108,000 lbs/hr coal each
Absorber	Normal	1	Research Cottrell	--	--	1978	628,700 acfm gas flow @ 95% SO2 removal efficiency
Electrostatic Precipitator (Hot sided ESP)	Normal	1	Universal Oil Products	--	72-412	1978	2,480K acfm gas flow 700 degrees F gas temperature 99% PM removal efficiency
Absorber – Lime slurry	Alternate	1	TBD	Tray Tower			0.15 lbs/MMBtu design outlet emissions rate
Fabric Filter	Alternate	1	TBD	Pulse Jet			99.9% design efficiency
Emergency Diesel Generator	Normal	1	Beloit Power Systems	--	504637-R1	1978	900 KW @ 480 volts
Cooling tower	Normal	1	Marley	6516-3-6 Forced draft 11 cells	--	1978	145,000 gpm water flow
FLY ASH HANDLING SYSTEM							
Fly ash Baghouse	Normal	2	GE	GE-154-6-12P	--	1988	100% capacity pulse-jet baghouse, 154 bags per baghouse, 6"x12' bags
LIME SLAKING SYSTEM							
Lime Silo Baghouse	Normal	1	Flex-Kleen	58 BVBS 25IIG	W33793	1994	25 bags, pulse jet baghouse, 6"x6' bags
Lime Slaker Vent Wet Scrubber	Normal	1	Ducon	UW-4 IV size 30	--	1994	2500 inlet acfm @200 degree F

Equipment	Operating Scenario	Quantity	Manufacturer	Model/Type	Serial Number	Date Installed	Rated Capacity
COAL WETTING SYSTEM							
Coal Dust Suppression System	Normal	1	Nalco	Nalco #	--	1995	Chemical treatment and/or wetting at each crusher and various transfer points as needed.
COAL HANDLING SYSTEM							
Conveyor Belts		28	Continental Conveyor	--	--	--	Various
Crushers		3	Continental Conveyor	--	--	--	--
Grizzly		2	Continental Conveyor	--	--	--	600 tons per hr / 1200 tons per hr
Hoppers		9	Continental Conveyor	--	--	--	--
Stackers		2	Continental Conveyor	--	--	--	--
Dust Collector (Unit 1 Silo Ventilation & Conveyors, Tag no. DC-01A)	Normal	1	MAC Equipment	144MCF153-145, Style III	36307-001-1	2002	Exhaust Fan Volumetric Flow Rate: 12,350 cfm; Static Pressure: 13.00" wg
Dust Collector (Unit 2 Silo Ventilation, Tag no. DC-02A)	Normal	1	MAC Equipment	144MCF255-165, Style III	36307-031-1	2002	Exhaust Fan Volumetric Flow Rate: 14,000 cfm; Static Pressure: 13.00" wg
Dust Collector (Unit 2 Transfer Conveyors, Tag no. DC-02B)	Normal	1	MAC Equipment	144MCF361-285, Style III	36307-051-1	2002	Exhaust Fan Volumetric Flow Rate: 24,000 cfm; Static Pressure: 14.00" wg
Dust Collector (Unit 3 Silo Ventilation, Tag no. DC-03A)	Normal	1	MAC Equipment	144MCF153-145, Style III	36307-011-1	2002	Exhaust Fan Volumetric Flow Rate: 14,000 cfm; Static Pressure: 13.00" wg
Dust Collector (Unit 3 Transfer Conveyors, Tag no. DC-03B)	Normal	1	MAC Equipment	144MCF255-165, Style III	36307-041-1	2002	Exhaust Fan Volumetric Flow Rate: 12,000 cfm; Static Pressure: 14.00" wg
Dust Collector (Unit 4 Silo Ventilation, Tag no. DC-04A)	Normal	1	MAC Equipment	144MCF153-130, Style III	36307-061-1	2002	Exhaust Fan Volumetric Flow Rate: 11,000 cfm; Static Pressure: 11.00" wg
Dust Collector (Unit 4 Transfer Conveyors, Tag no. DC-04B)	Normal	1	MAC Equipment	144MCF153-145, Style III	36307-021-1	2002	Exhaust Fan Volumetric Flow Rate: 12,000 cfm; Static Pressure: 13.00" wg

Table C-2: Stack Parameters

Identification	Stack 1	Stack 2	Stack 3	Stack 4	Stack 2/3
Description	Round Vertical Stack	Round Vertical Stack	Round Vertical Stack	Round Vertical Stack	See Stack 2 and Stack 3 for parameters
Building Dimensions (boiler structure)	50 ft W100 ft L155 ft H	100 ft W100 ft L217 ft H	100 ft W100 ft L217 ft H	120 ft W100 ft L247 ft H	
Height	250 ft	550 ft	550 ft	550 ft	
Inside Dimensions	12.9 ft	14.67 ft	17.5 ft	19.17 ft	
Pre-VAPR* Exit Gas Temperature	155 °F	178 °F	316 °F	255 °F	
Pre-VAPR* Exit Gas Velocity	42.6 ft/sec	106.3 ft/sec	90.46 ft/sec	70.07 ft/sec	
Post-VAPR* Exit Gas Temperature	123 °F	n/a	127 °F	127 °F	
Post-VAPR* Exit Gas Velocity	48.74 ft/sec	n/a	63.23 ft/sec	74.59 ft/sec	

* Pre-VAPR and Post-VAPR refer to before and after implementation of the voluntary Air Pollution Reduction project described in Condition I.J, Attachment “B” of this permit.

Table C-3: Continuous Emission Monitors

Steam Unit	NOx Monitor	SO ₂ Monitor	O ₂ Monitor	Opacity Monitor	Flow Monitor
Steam unit 1	TECO	Inlet: Western Research 721M	Siemens Oxymat 6E	Dynatron 1100M	United Sciences 100
		Outlet: Western Research 721AT	Siemens Oxymat 5E		
Steam unit 2	TECO	Inlet: Western Research 721AT	Inlet: Siemens Oxymat 5E	Dynatron 1100M	United Sciences 100
		Outlet: Western Research 721M	Outlet: Siemens Oxymat 5E		
Steam unit 3	TECO	Western Research 721AT	Siemens Oxymat 5E	Dynatron 1100M	United Sciences 100
Steam unit 4	TECO	Western Research 721AT	Siemens Oxymat 5E	Dynatron 1100M	United Sciences 100

**ATTACHMENT "D": PHASE II ACID RAIN PROVISIONS
Air Quality Control Permit No. 33500**

For

Arizona Public Service Company - Cholla Power Plant

I. STATEMENT OF BASIS

Statutory and Regulatory Authorities: In accordance with Arizona Revised Statutes, Title 49, Chapter 3, Article 2, Section 426.N, and Titles IV and V of the Clean Air Act, the Arizona Department of Environmental Quality issues this Phase II Acid Rain Permit pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 3, Section 333 (A.A.C. R18-2-333), "Acid Rain".

II. SO₂ ALLOWANCE[†] ALLOCATIONS AND NO_x REQUIREMENTS FOR EACH AFFECTED UNIT

		2005	2006	2007	2008	2009	2010	2011
Unit 1	SO ₂ allowances under Tables 2, 3, or 4 of 40 CFR part 73	2222*	2222*	2222*	2222*	2222*	2034*	2034*
	NO _x limit	Pursuant to 40 CFR 76.8(d)(2), Arizona Department of Environmental Quality approves a NO _x early election compliance plan for Unit 1. The compliance plan is effective for calendar year 2000 through calendar year 2007. Under the compliance plan, the unit's annual average NO _x emission rate for each year, determined in accordance with 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5(a)(1) of 0.45 lb/MMBtu for tangentially fired boilers. If the unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject to the applicable emission limitation, under 40 CFR 76.7(a)(1), of 0.40 lb/MMBtu until calendar year 2008.						

		2005	2006	2007	2008	2009	2010	2011
Unit 2	SO ₂ allowances under Tables 2, 3, or 4 of 40 CFR part 73	5441*	5441*	5441*	5441*	5441*	5067*	5067*
	NO _x limit	Pursuant to 40 CFR 76.8(d)(2), Arizona Department of Environmental Quality approves a NO _x early election compliance plan for Unit 2. The compliance plan is effective for calendar year 2000 through calendar year 2007. Under the compliance plan, the unit's annual average NO _x emission rate for each year, determined in accordance with 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5(a)(1) of 0.45 lb/MMBtu for tangentially fired boilers. If the unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject to the applicable emission limitation, under 40 CFR 76.7(a)(1), of 0.40 lb/MMBtu until calendar year 2008.						

		2005	2006	2007	2008	2009	2010	2011
Unit 3	SO ₂ allowances under Tables 2, 3, or 4 of 40 CFR part 73	5145*	5145*	5145*	5145*	5145*	4858*	4858*
	NOx limit	Pursuant to 40 CFR 76.8(d)(2), Arizona Department of Environmental Quality approves a NOx early election compliance plan for Unit 3. The compliance plan is effective for calendar year 2000 through calendar year 2007. Under the compliance plan, the unit's annual average NOx emission rate for each year, determined in accordance with 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5(a)(1) of 0.45 lb/MMBtu for tangentially fired boilers. If the unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject to the applicable emission limitation, under 40 CFR 76.7(a)(1), of 0.40 lb/MMBtu until calendar year 2008.						

		2005	2006	2007	2008	2009	2010	2011
Unit 4	SO ₂ allowances under Tables 2, 3, or 4 of 40 CFR part 73	8332*	8332*	8332*	8332*	8332*	7784*	7784*
	NOx limit	Pursuant to 40 CFR 76.8(d)(2), Arizona Department of Environmental Quality approves a NOx early election compliance plan for Unit 4. The compliance plan is effective for calendar year 2000 through calendar year 2007. Under the compliance plan, the unit's annual average NOx emission rate for each year, determined in accordance with 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5(a)(1) of 0.45 lb/MMBtu for tangentially fired boilers. If the unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject to the applicable emission limitation, under 40 CFR 76.7(a)(1), of 0.40 lb/MMBtu until calendar year 2008.						

† As defined in 40 CFR §72.2, "Allowance" means an authorization by the Administrator under the Acid Rain Program to emit up to one ton of sulfur dioxide during or after a specified calendar year.

* The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40 CFR part 73 Tables 2, 3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR §72.84).

III. COMMENTS, NOTES AND JUSTIFICATIONS

APS has early-elected for NOx requirements on Units 1 through 4. Plans to construct Unit 5 have been postponed indefinitely.

IV. PERMIT APPLICATION

The Permittee, and any other owners or operators of the units at this facility, shall comply with the requirements contained in the attached acid rain permit application (OMB No. 2060-0258) signed by the Alternate Designated Representative Conrad Spencer on July 16, 2004.

ATTACHMENT "E": COMPLIANCE ASSURANCE MONITORING Air Quality Control Permit No. 33500

For Arizona Public Service Company - Cholla Power Plant

I. APPLICABILITY

The compliance assurance monitoring (CAM) required under this attachment shall apply to Steam Boiler Units 1 through 4 for particulate matter emissions.

II. CAM PLAN

[40 CFR 64.6]

A. Steam Boiler Unit 1

1. Primary and Secondary Indicators

a. Primary Indicator

The opacity of exhaust gases shall be primary indicator of Unit 1 Venturi scrubbers' performance.

b. Secondary Indicators

The flooded disc pressure drop (Δp) and slurry flow shall be secondary indicators of Unit 1 Venturi scrubbers' performance.

2. A COMS shall be used to monitor opacity. The COMS shall be installed and operated in accordance with the requirements specified in Condition II.C.1.d, Attachment "B" of this permit.

3. Using COMS data, the Permittee shall calculate block 1-hour average opacities excluding periods of boiler startup, shutdown, and malfunction. If at any point, excluding periods of startup, shutdown, and malfunction, the opacity average exceeds 19%, then:

a. The Permittee shall check and record the flooded disc Δp and slurry flow for each flooded disc at that specific moment, and

b. The Permittee shall record the operational status of Unit 1 boiler (i.e. load change increase or decrease).

c. Block 1-hour average opacities of 20% or greater and Δp is less than 8 inches of water column or slurry flow is equal to or less than 1,500 gallons per minute per pump shall be considered an excursion.

B. Steam Boiler Unit 2

1. Primary and Secondary Indicators

a. Primary Indicator

The opacity of exhaust gases shall be primary indicator of Unit 2 Venturi scrubbers' performance.

b. Secondary Indicators

The flooded disc pressure drop (Δp) and slurry flow shall be secondary indicators of Unit 2 Venturi scrubbers' performance.

2. A COMS shall be used to monitor opacity. The COMS shall be installed and operated in accordance with the requirements specified in Condition III.C.1.f, Attachment “B” of this permit.
3. Using COMS data, the Permittee shall calculate block 1-hour average opacities excluding periods of boiler startup, shutdown, and malfunction. If at any point, excluding periods of startup, shutdown, and malfunction, the opacity average exceeds 16%, then:
 - a. The Permittee shall check and record the flooded disc Δp and slurry flow for each flooded disc at that specific moment, and
 - b. The Permittee shall record the operational status of Unit 2 boiler (i.e. load change increase or decrease).
 - c. Block 1-hour average opacities of 17% or greater and Δp is less than 15 inches of water column or slurry flow is equal to or less than 4,000 gallons per minute per pump shall be considered an excursion.

C. Steam Boiler Unit 3

1. Primary and Secondary Indicators
 - a. Primary Indicator

The opacity of exhaust gases shall be primary indicator of Unit 3 ESP’s performance.
 - b. Secondary Indicators

The operational status of transformer/rectifier (TR) and rapper and TR amps and volts for each section of Unit 3 ESP shall be secondary indicators of the ESP’s performance.
2. A COMS shall be used to monitor opacity. The COMS shall be installed and operated in accordance with the requirements specified in Condition V.C.1.f, Attachment “B” of this permit.
3. Using COMS data, the Permittee shall calculate block 1-hour average opacities excluding periods of boiler startup, shutdown, and malfunction. If at any point, excluding periods of startup, shutdown, and malfunction, the opacity average exceeds 16%, then:
 - a. The Permittee shall compare and record for each section of the ESP at that specific moment, the TRs that are currently in service to the TRs that were in service during the previous hour to determine if any additional TRs were removed from service. If additional TRs are out then determine and record the following:
 - (1) If they tripped due to malfunction then no excursion occurred and no further action is required.
 - (2) If TRs were removed from service or tripped due to reasons other than malfunction then an excursion has occurred and shall be reported.
 - (3) If the problem with TRs’ operation is not identified, then proceed to Condition II.C.3.b below.
 - b. The Permittee shall compare current rapper operation with the rapper operation during the previous hour to determine if any changes occurred. If changes occurred then determine and record the following:

- (1) If they were caused by malfunction then no excursion occurred and no further action is required.
 - (2) If rappers were removed from service or tripped due to reasons other than malfunction then an excursion has occurred and shall be reported.
 - (3) If the problem with rapper operation is not identified, then proceed to Condition II.C.3.c below.
- c. The Permittee shall compare current TR amps and volts with (a) the amps and volts during previous hour if available, or (b) the most recent available amps and volts recorded to determine if a change occurred. If changes occurred then determine and record the following:
- (1) If they were caused by malfunction then no excursion occurred and no further action is required.
 - (2) If TR amps and/or volts were changed due to reasons other than malfunction then an excursion has occurred and shall be reported.
 - (3) If no change in TR amps and/or volts is identified, then proceed to Condition II.C.3.d below.
- d. If no abnormalities are identified during the investigations listed above then no excursion occurred and the Permittee shall record the conclusion.

D. Steam Boiler Unit 4

1. Primary and Secondary Indicators

a. Primary Indicator

The opacity of exhaust gases shall be primary indicator of Unit 4 ESP's performance.

b. Secondary Indicators

The operational status of transformer/rectifier (TR) and rapper and TR amps and volts for each section of Unit 4 ESP shall be secondary indicators of the ESP's performance.

2. A COMS shall be used to monitor opacity. The COMS shall be installed and operated in accordance with the requirements specified in Condition VI.C.1.e, Attachment "B" of this permit.
3. Using COMS data, the Permittee shall calculate block 1-hour average opacities excluding periods of boiler startup, shutdown, and malfunction. If at any point, excluding periods of startup, shutdown, and malfunction, the opacity average exceeds 16%, then:
 - a. The Permittee shall compare and record for each section of the ESP at that specific moment, the TRs that are currently in service to the TRs that were in service during the previous hour to determine if any additional TRs were removed from service. If additional TRs are out then determine and record the following:
 - (1) If they tripped due to malfunction then no excursion occurred and no further action is required.
 - (2) If TRs were removed from service or tripped due to reasons other than malfunction then an excursion has occurred and shall be reported.

- (3) If the problem with TRs' operation is not identified, then proceed to Condition II.D.3.b below.
 - b. The Permittee shall compare current rapper operation with the rapper operation during the previous hour to determine if any changes occurred. If changes occurred then determine and record the following:
 - (1) If they were caused by malfunction then no excursion occurred and no further action is required.
 - (2) If rappers were removed from service or tripped due to reasons other than malfunction then an excursion has occurred and shall be reported.
 - (3) If the problem with rapper operation is not identified, then proceed to Condition II.D.3.c below.
 - c. The Permittee shall compare current TR amps and volts with (a) the amps and volts during previous hour if available, or (b) the most recent available amps and volts recorded to determine if a change occurred. If changes occurred then determine and record the following:
 - (1) If they were caused by malfunction then no excursion occurred and no further action is required.
 - (2) If TR amps and/or volts were changed due to reasons other than malfunction then an excursion has occurred and shall be reported.
 - (3) If no change in TR amps and/or volts is identified, then proceed to Condition II.D.3.d below.
 - d. If no abnormalities are identified during the investigations listed above then no excursion occurred and the Permittee shall record the conclusion.
- E. The Permittee shall continue to conduct the monitoring required for Steam Boiler Unit 1, 3 or 4 under Conditions II.A, C, and D above until when a fabric filter baghouse is in service to replace the existing particulate matter control device of that boiler unit, at which time, the Permittee shall begin to conduct the monitoring prescribed in Table E-1 of this attachment for the affected boiler unit.
 - 1. Upon commissioning of service of a fabric filter baghouse, the Permittee shall have on file with the Director, a unit specific ID fan suction pressure level for that baghouse. The pressure level shall be so designed as to indicate that the filter bags are plugged with particulate matter to the point where seals or bags may begin to break and degrade the performance of that baghouse.
 - 2. Upon commissioning of service of a fabric filter baghouse, the Permittee shall have on file with the Director, the resting or cleaning mode pressures for each baghouse compartment of that baghouse.

III. CAM OPERATION REQUIREMENTS

[40 CFR 64.7]

- A. Upon issuance of the permit, the Permittee shall conduct the monitoring for each affected control device in accordance with the CAM plan outlined in Section II of this attachment.
- B. At all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

Table E-1: CAM Plan for Fabric Filter Baghouse

General Criteria	Performance indicator	Stack opacity at each of Steam Boiler Units 1, 3 and 4 stacks	Induction draft (ID) fan suction pressure at each of Steam Boiler Units 1, 3 and 4	Individual baghouse compartment magnahelic differential pressure gage readings
	Measurement Approach	Opacity values from the Continuous Opacity Monitor (COM) at each boiler unit are monitored.	This is a direct indication of the condition of the baghouse filters for each boiler unit.	Each baghouse compartment is equipped with a magnahelic differential pressure gauge that continuously measures the differential air pressure across the compartment.
	Indicator range(s) and excursion definition	An excursion is defined as block 1-hour opacity average that exceeds 10%, excluding periods of startup, shutdown, and malfunction. An excursion requires investigation of the compartment pressure differential values for decreases in differential pressure. Repairs or adjustments are made as necessary. A log of the corrective action(s) will be maintained.	An excursion is defined as an ID fan suction pressure reading that exceeds a unit specific pressure level in inches water column ⁽¹⁾ or a sudden drop of more than 1.0 inch in the ID fan suction pressure, excluding periods of startup, shutdown, and malfunction.	An excursion is defined as a differential pressure value of more than ½ inch of water column above the resting or cleaning mode pressures ⁽²⁾ , excluding periods of startup, shutdown, and malfunction. Investigation is initiated to locate the cause
Performance Criteria	Data representativeness	An increase in visible emissions (opacity) under steady-state operating conditions is an indirect indication of an increase in particulate matter emissions.	A high pressure indicates bags may be clogged and particulate matter may be being forced through the bag fabric. A sudden decrease in fan suction pressure indicates a possible bag break or seal loss. Particulate removal rates should remain consistent until a problem is detected.	From the standpoint of particulate removal efficiency, only a reading indicating a loss of compartment integrity shows a reduction in the overall efficiency of the baghouse. Readings indicating a compartment is clogged may not indicate degradation of overall baghouse particulate removal efficiency, but do signal the need for investigation.
	Verification of monitoring status	Effective upon commissioning of service of a fabric filter control device at each affected boiler unit.	Effective upon commissioning of service of a fabric filter control device at each affected boiler unit.	Effective upon commissioning of service of a fabric filter control device at each affected boiler unit.
	QA/QC practices	The COM equipment and data quality assurance is in conformance with 40 CFR Part 60 Appendix B & F.	Annual calibration of ID fan suction pressure gauges.	Annual calibration of the baghouse magnahelic gages. Operators check magnahelics on routine rounds each shift. The most frequent problem identified is plugged sensing lines which are cleared upon detection.
	Monitoring frequency	Continuous recording of opacity.	Continuous, with hourly recording of pressure values.	Cell magnahelic values recorded once per shift.
	Data collection procedures	The opacity monitor continuously records the average for each one (1) minute interval.	Operator records readings on the log sheet hourly.	Magnahelic readings are recorded once per shift. Once per week the operator records the in-service, reverse air cleaning, and at rest magnahelic readings on each cell, and notes any discrepancies. Plant management reviews this data to identify issues that need to be addressed immediately and those that can be added to the next scheduled maintenance work list.
	Averaging period	Block one hour.	N/A	N/A

(1) See Condition II.E.1 of this attachment for additional requirements

(2) See Condition II.E.2 of this attachment for additional requirements

- C. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this Section, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- D. Upon detecting an excursion or exceedance, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- E. Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.
- F. If the Permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the Director and, if necessary, submit a proposed modification to the permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

IV. QUALITY IMPROVEMENT PLAN (QIP) REQUIREMENTS

[40 CFR 64.8]

- A. In the event that an accumulation of exceedances or excursions exceeds 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period based on the results of a determination made under Condition III.E above, the Permittee shall develop and implement a QIP. The Director may otherwise specify the threshold at a higher or lower percent or rely on other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices.

- B. The QIP shall include the following elements:
1. The Permittee shall maintain a written QIP, if required, and have it available for inspection.
 2. The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the Permittee shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:
 - a. Improved preventive maintenance practices;
 - b. Process operation changes;
 - c. Appropriate improvements to control methods;
 - d. Other steps appropriate to correct control performance;
 - e. More frequent or improved monitoring (only in conjunction with one or more steps a through d).
- C. If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the Director if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.
- D. Following implementation of a QIP, upon any subsequent determination pursuant to Condition III.E above, the Director may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:
1. Failed to address the cause of the control device performance problems; or
 2. Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- E. Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

V. REPORTING AND RECORDKEEPING REQUIREMENTS

[40 CFR 64.9]

- A. Upon issuance of the permit, the Permittee shall submit monitoring reports pertaining to this attachment to the Director along with Condition I.H, Attachment “B” and in accordance with Section XII, Attachment “A” of the permit.
- B. A report for monitoring under this attachment shall include, at a minimum, the information required under Condition I.H, Attachment “B” and Section XII, Attachment “A” of the permit, and the following information, as applicable:
1. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
 2. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

3. A description of the actions taken to implement a QIP during the reporting period as specified in Section IV above. Upon completion of a QIP, the Permittee shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.
4. The Permittee shall comply with the recordkeeping requirements specified in Section XIII, Attachment "A" of the permit. The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to Section IV above and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this section (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).
5. Instead of paper records, the Permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

VI. PERMIT SHIELD

[A.A.C. R18-2-325]

Compliance with the terms of this attachment shall be deemed compliance with 40 CFR Part 64.