AEPCO
Arizona Electric Power Cooperative, Inc.
P.O. Box 670 • Benson, Arizona 85602-0670 • Phone 520-586-3631

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AIR QUALITY DIVISION
09 JUN 29 PM 2:15

CTS: 24019

June 25, 2009

Mr. Timothy Franquist, Manager
Air Quality Division/Enforcement Unit
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007

RE: Submittal of Significant Permit Revision Application and O&M Plan for Mercury Control

Dear Mr. Franquist:

Arizona Electric Power Cooperative, Inc. (AEPCO) is a customer-owned electric utility with approximately 300 employees headquartered in Benson, Arizona. We are the owner/operator of Apache Generating Station (Apache Station) which supplies power to six electric distribution cooperatives serving more than 270,000 people in portions of Arizona, California and New Mexico.

As required in a Consent Order between AEPCO and the Arizona Department of Environmental Quality, please find enclosed a significant permit revision application and an operating and maintenance plan (O&M Plan) for the mercury control strategy AEPCO proposes to install on Steam Units 2 and 3 at Apache Station.

If you have any questions regarding this submittal, please feel free to contact me at (520) 586-5122 or Jim Andrew at (520) 384-6517.

Sincerely,

Michelle Freeark

Michelle R. Freeark
Manager of Environmental

Enc.

VIA CERTIFIED MAIL – 7006 3450 0000 0265 2547

c/ T. Baggiore, w/o enc.
M. Vakili. w/ enc.
J. Andrew, w/enc.
G. Grim, w/o enc.
P. Ledger, w/o enc.

File: AZ Dept of Environmental Quality/Air Quality/Mercury Control Permit Application

CTS: 214019

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ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD PERMIT APPLICATION FORM
(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to: (Business license name of organization that is to receive permit) Arizona Electric Power Cooperative, Inc.

2. Mailing Address: P.O. Box 670
   City: Benson State: AZ ZIP: 85602

3. Previous Company Name: (if applicable)

4. Name (or names) of Owners/Principals: Donald W. Kimball, Executive VP & CEO
   Phone: 520.586.3631 Fax: 520.586.5343 Email:

5. Name of Owner's Agent:
   Phone: Fax: Email:

6. Plant/Site Manager/Contact Person and Title: Jim Andrew, Manager Planning & Regulatory Affairs
   Phone: 520.384.6517 Fax: 520.384.6557 Email: jandrew@aepco.coop

7. Plant Site Name: Apache Generating Station
   Plant Site Location/Address: 3525 N US Hwy 191
   City: Cochise County: AZ ZIP: 85606
   Indian Reservation (if applicable, which one):
   Latitude/Longitude, Elevation: 32 03' 46"N/109 53' 40"W, 4200' above MSL

8. Equipment Purpose: Mercury Reduction Operation and Maintenance Plan
   Equipment List/Description: Chemical Oxident Feed System

9. Type of Organization:
   ☒ Corporation ☐ Individual Owner
   ☐ Partnership ☐ Government Entity (Government Facility Code:)
   ☐ Other

10. Permit Application Basis: ☐ New Source ☒ Revision ☐ Renewal of Existing Permit
    (Check all that apply.) ☐ Portable Source ☐ General Permit
    For renewal or modification, include existing permit number (and exp. date): 35043, 7/2/2012
    Date of Commencement of Construction or Modification: 6/1/2010 (estimate)
    Is **any** of the equipment to be leased to another individual or entity? ☐ Yes ☒ No
    Standard Industrial Classification Code: 4911 State Permit Class: 1

11. Signature of Responsible Official of Organization:
    Official Title of Signer: Senior VP & Chief Operating Officer

12. Typed or Printed Name of Signer: Gary G. Grim
    Date: 6/25/09 Telephone Number: 520.384.4256
    Company Name: Arizona Electric Power Cooperative, Inc.

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COMPLIANCE CERTIFICATION AND CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

This certification must be signed by the Responsible Official. Applications without a signed certification will be deemed incomplete.

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than semiannually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Typed or Printed Company Name: Arizona Electric Power Cooperative, Inc.

Official Title of Signer: Senior VP & Chief Operating Officer

Typed or Printed Name of Signer: Gary G. Grim

Signature of Responsible Official: _____ Date: 6/25/09

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SIGNIFICANT PERMIT REVISION SUBMITTED PURSUANT TO A.A.C. R18-2-230

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Section II, Attachment "B": SPECIFIC CONDITIONS of Permit No. 35043 is hereby amended to add Subsection "G" as follows:

II. STEAM UNITS 2 AND 3

G. Mercury (State-enforceable only)

1. General

In accordance with the Consent Order between the Permittee and Arizona Department of Environmental Quality, entered into on January 30, 2009, from the effective date of the Consent Order until its termination, the terms of the Consent Order shall apply and the Arizona Mercury Rule shall not apply to Apache Generating Station.

The mercury reduction operations and maintenance plan set forth in the Consent Order, and included in this revision, shall not apply until January 1, 2011, and shall end on December 31, 2015.

2. Air Pollution Control – Mercury Reduction O&M Plan

On or before January 1, 2011, the Permittee shall place into operation on Steam Units 2 and 3, the following mercury control technology: To achieve a minimum of 50% reduction of inlet mercury, the Permittee shall employ a chemical oxidant, applied to its coal, to oxidize mercury in the boiler furnaces of Steam Units 2 and 3 during combustion. The oxidized mercury will then be removed from the flue gas and sequestered in the limestone slurry circulating in the sulfur dioxide scrubbers. The spent limestone slurry is contained in an existing specially designed combustion waste disposal facility.

a. A recent trial of this technology at Apache Generating Station used an aqueous solution of calcium bromide compound applied to the coal prior to the combustion process. A quantity of the solution, proportional to the coal feed rate, was applied to the coal prior to combustion. The in-furnace reaction of mercury in the coal and the added calcium bromide resulted in the formation of $HgBr^2$ which is water-soluble and was effectively captured in the wet scrubbers. The data from this trial showed that a 50% reduction of inlet mercury is achievable using this technology.

b. The Permittee shall ensure that the mercury control system is in operation when coal is combusted in Steam Units 2 and 3.

c. The Permittee shall maintain an adequate inventory of chemical oxidant to support continuous feed;

d. The Permittee shall optimize feed rates of chemical oxidant, utilizing coal feeder output signals and coal mercury content, to maintain 50% reduction of inlet mercury;

e. The Permittee shall monitor chemical feed pump operation and tank levels shall be monitored each shift;

f. Critical spare parts for the chemical feed system shall be maintained in inventory on site.

3. Monitoring, Recordkeeping and Reporting

The Permittee shall implement the following monitoring, recordkeeping and reporting measures to document mercury emissions from Steam Units 2 and 3, and to demonstrate the proper operation of the installed mercury control technology.

a. To determine inlet mercury mass, the Permitee shall obtain an analysis of a representative sample from each trainload of coal delivered to Apache Generating Station. These data will be averaged monthly;

b. To determine outlet mercury mass the Permittee shall operate the flue gas mercury analyzers and the CEMS installed on the exhaust stacks of Steam Units 2 and 3. These data will be averaged monthly;

c. The Permittee shall sum all monthly average mercury mass data and calculate for each calendar year, reduction in mercury emissions from Steam Units 2 and 3 as follows:

$$HgR = \left[\frac{HI_a / \sum Hg_O}{HI_a / \sum Hg_I} \right] X\ 100$$

Where:

HgR = Mercury removal (%)

Hg_O = Monthly outlet mercury mass (lbs)

Hg_I = Monthly inlet mercury mass (lbs)

HI_a = Annual heat input (mmBtu)

$\sum$ = Sum

d. The Permittee shall maintain records of all inlet and outlet mercury data and report annual mercury removal beginning with the first Title V compliance certification submitted in 2011.

4. Significant Permit Application Incorporating State Mercury Standard

The Permittee shall submit an application for a significant permit revision pursuant to A.A.C. R18-2-724(F) by no later than January 1, 2014, including the following elements:

a. The State Mercury Standard and, should the EPA promulgate a MACT Standard, any amendments thereto to ensure that the Arizona Mercury Rule is compatible with the EPA MACT standard;

b. A control strategy for meeting the State Mercury Standard and any amendments thereto;

c. A demonstration that the control strategy is designed to meet the State Mercury Standard and any amendments thereto;

d. A proposal to comply with the State Mercury Standard by December 31, 2016, except as provided in A.A.C. R18-2-734(H), under the following conditions:

i. For the purposes of applying the exception established in A.A.C. R18-2-734(H), each date specified in that provision shall be increased by three calendar years;

ii. The exception in A.A.C. R18-2-734(G) shall not apply.