Arizona Public Service (APS) - Cholla Power Plant
Aquifer Protection Program Permit No. P-100568
Place ID 447, LTF No. 96385
Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Program (APP) Permit for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards (AWQS) at the Point of Compliance (POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

II. Permittee & Facility Location:

The facility is located at 4801 Cholla Lake Road, Joseph City, in Arizona in Navajo County.

III. Facility Description:

The APS - Cholla Power Plant is located in northern Arizona in Navajo County near Joseph City. It lies approximately 9 miles west of Holbrook, Arizona, adjacent to and north of the Little Colorado River. The plant burns low sulfur coal in three units having a total net generating capacity of 767,000 kilowatts. The permittee is authorized to discharge wastewater generated from the coal fired, steam electric power plant to three surface impoundments: West Area Retention Pond (WARP), Storm Water Retention Pond (SWRP) and Cholla Reservoir. Discharges to the Bottom Ash Pond, Fly Ash Pond, Sedimentation Pond and Bottom Ash Monofill are exempt from APP per A.A.C. R18-9-103(5).

IV. Amendment Description:

The purpose of this amendment is to authorize the facility to make the following changes:

- To add a new surface impoundment (Evaporation Pond) to the APS Cholla Power Plant APP. This evaporation pond is required to continue operation of seepage collection systems after shutdown of coal-fired power generation in 2025.

ADEQ reviewed and approved the above requested changes. Pursuant to A.A.C. R18-9-A211(B)(9), the permit category for this amendment was determined to be an 'Significant Amendment'.

V. Regulatory:

- The last inspection was conducted on April 21, 2014, the facility was in compliance.

VI. Best Available Demonstrated Control Technology (BADCT) (see Table 8 in the permit for full descriptions):

- The SWRP is a 7.6 acre sub-grade holding pond. Runoff from the northern and eastern sides of the coal storage area is collected in this pond. The basin is formed from compacted native clayey soil. There is approximately 5 feet of natural clay beneath the basin; the clay layer may or may not be continuous. Maximum useable water storage capacity is about 32,000,000 gallons.
- The WARP is an unlined retention basin (approximate permeability ranges from 4×10^{-6} cm/sec to 8×10^{-7} cm/sec) located southwest of the Sedimentation Pond. The WARP is designed for a 100-year, 24-hour storm event and has an approximate storage capacity of 1,885,000 gallons with a 2 foot freeboard at 5,012 feet amsl. The maximum pond elevation is at an elevation of 5,014 feet amsl.
- The Cholla Reservoir was constructed in a natural low-lying depression north of the Little Colorado River. Cholla Reservoir circulates approximately 190,000 gpm. The Cholla Reservoir has an area of approximately 360 acres with an approximate capacity of 2,220 acre-feet and comprised of a hot pond and a cold pond which are separated by an earthen dike. The mean depth of the hot pond is approximately 4 feet and the mean depth of the cold pond is approximately 7 feet.
- The Evaporation Pond will be a 42-acre single-lined impoundment (60-mil HDPE liner over a low-permeability geosynthetic clay liner) with three hydraulically connected segments. The CEP will have a maximum capacity of approximately 304 acre-feet at the maximum design water level of 5,025 feet amsl or 2.5 feet below the crest of the pond embankment. The pond segments will be hydraulically connected using 12-inch diameter HDPE piping.

VII. Compliance with Aquifer Water Quality Standards (AWQS):

Groundwater monitoring is required at two POC wells to ensure compliance with AWQS. The POC wells are downgradient of the discharging facilities and serve to provide ADEQ with groundwater quality data.