

**FOUR CORNERS POWER PLANT  
POST-CLOSURE PLAN §257.104(d)  
LINED ASH IMPOUNDMENT (LAI)  
FC\_PostClosPlan\_008\_20161017**

**Post-Closure Plan Contents §257.104(d)(1)**

*The owner or operator of a CCR unit must prepare a written post-closure plan that includes, at a minimum, the information specified in paragraphs (d)(1)(i) through (iii) of this section.*

<b>SITE INFORMATION</b>	
Site Name / Address	Four Corners Power Plant / 691 CR-6100, Fruitland, NM 85416
Owner Name / Address	Arizona Public Service / 400 North 5 <sup>th</sup> Street, Phoenix, AZ 85004
CCR Unit	Lined Ash Impoundment (LAI)
Location	36° 41' 04" N, 108° 30' 12" W
Reason for Initiating Closure	Known Final Receipt of Waste
Final Cover Type	Evapotranspiration Cover
Closure Method	Closure by leaving CCR in place
<b>CLOSURE PLAN DESCRIPTION</b>	
(d)(1)(i) – A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed.	<p>The LAI will be closed in conjunction with the adjacent Lined Decant Water Pond and Dry Fly Ash Disposal Area (DFADA) Cells 1, 2, and 3. The units will share closure-related features, such as drainage channels and slopes. Therefore, maintenance activities will be concurrent.</p> <p>The LAI will be dewatered to facilitate construction of a closed-in-place grading and cover system. The final cover will be constructed over a graded and prepared subgrade. The final cover will be sloped to promote drainage and the storm water runoff will be discharged off the top slope, via sheet flow, into a drainage channel between the LAI and the DFADA. This drainage channel is part of a system of channels and sub-basins to be constructed around the perimeter of the LAI, DFADA, and LDWP that will collect runoff storm water from the closed units and run-on storm water flows. This Perimeter Drainage Channel System will ultimately outfall into a detention basin near the southwest</p>

toe of the LDWP.

The outside slopes and top slope of the closed configuration of the LAI will be monitored for non-native invasive vegetation, excessive settlement, and/or excessive erosion. Excessive settlement is defined as being present where standing water is in excess of 1 foot in depth over a lateral extent of 1 acre. Excessive erosion is defined as an erosion rill or scour greater than 1 foot in depth.

The maintenance activities associated with impacted areas are as follows:

- **Invasive Vegetation**

- a) When invasive vegetation is observed during routine monitoring, it will be removed from the capped surface.
- b) If a void is created in the cap materials from vegetation removal, the void will be filled with erosion layer soil resources in accordance with the original construction Specifications.

- **Settlement**

- a) The limits of the settlement area will be delineated.
- b) The delineated area will be filled to the final elevation with erosion layer soil resources in accordance with the original construction Specifications. Reestablishment of vegetative cover is expected to occur by natural processes.

- **Erosion Rills** (deeper than 1 foot of erosion on a slope)

- a) The erosion rill will be excavated with a backhoe or track hoe to form a uniform trench width.
- b) The trench will be filled up to the final elevation with erosion layer soil resources in accordance with the original construction Specifications.
- c) The repaired erosion rill area will be

monitored for the recurrence of rills. If rills reappear, then the site will be assessed for additional measures of erosion resistance.

- **Erosion Scour** (deeper than 1 foot of erosion along the bottom of a channel)
  - a) The limits of the erosion scour area will be delineated.
  - b) The delineated area will be filled up to the final elevation with erosion layer soil resources in accordance with the original construction Specifications.
  - c) Based on the cause of the erosion scour, riprap armoring may be deployed over the area to prevent recurring scouring of the cap materials.

The drainage channel will be monitored for excessive erosion and sediment build-up. Within the riprap-lined portion of the channel, excessive erosion is defined as displaced riprap with exposed underlying geotextile. Within the soil cement-lined portion of the channel, excessive erosion is not anticipated. However, excessive erosion is defined as broken soil cement with exposed soil subgrade.

The maintenance activities associated with the drainage channel are as follows:

- **Erosion Within the Riprap-Lined Portions of Channel, if applicable** (exposed geotextile)
  - a) The exposed geotextile will be inspected for damage, with damaged materials being repaired in accordance with the Specifications.
  - b) The riprap materials will be replaced in accordance with the original construction Specifications.
  - c) If it is determined that the erosion is due to side channel inflow, Engineering Personnel will inspect the channel to determine the corrective

action, which may include one of the following:

- i. Regrading adjacent to the channel to prevent the side channel inflow.
- ii. Addition of a controlled side channel inflow (e.g. a scupper or energy dissipation feature).

- **Erosion Within the Soil Cement-Lined Channel, if applicable** (deeper than 6 inches)

- a) The limits of the erosion rill will be delineated.
- b) The edges and bottom of the rill will be clean cut/chipped to create vertical edges and a flat bottom over the delineated area.
- c) The prepared area will be filled with a cementitious material (i.e. grout or concrete) with a minimum 7-day compressive strength of 1,100 pounds per square inch (psi). Cementitious materials shall be constructed in accordance with the original construction Specifications.

- **Sediment Build-up**

- a) If excessive sediment buildup is observed (blockage of 1/3 of the channel cross-section), the sediment will be removed from the channel.
- b) If the sediment build-up is caused by a side channel flow, an additional sediment trap consisting of a riprap apron may be constructed at the discretion of APS.

In accordance with §257.104(d)(2)(iii), this initial written closure plan will be amended to provide additional details after the final engineering design for the grading and cover system is completed. The initial version of the closure plan reflects the information and planning available at the time of issuance.

<p>(d)(1)(ii) – The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period.</p>	<p>Neal Brown  Arizona Public Service  400 North 5<sup>th</sup> Street  Phoenix, AZ 85004  (602) 250-1000</p>
<p>(d)(1)(iii) – A description of the planned uses of the property during the post-closure period.  Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment.  The demonstration must be certified by a qualified professional engineer, and notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator’s publicly accessible internet site.</p>	<p>Currently, APS does not intend to utilize the closed LAI for any purpose during the post-closure period. APS may install a fence around the perimeter of the CCR Unit to prevent unauthorized access and/or disturbance of the side and top slopes, impounded areas, and drainage features. Access will only be granted for inspections, maintenance, and repairs.</p>
<p><b>POST-CLOSURE SCHEDULE</b></p>	
<p>APS will conduct post-closure care for 30 years after completion of construction activities.</p> <p>For the first 5 years, APS will perform the monitoring activities described in this report on a quarterly basis. Additionally, APS will monitor for storm water related damage after significant storm events. After the first 5 years and throughout the remaining 25 years, APS will perform the monitoring activities described in this report on an annual basis and after significant storm events.</p>	

**Certification Statement 40 CFR § 257.104(d)(4) – Post-Closure Plan for CCR Surface Impoundment**

**CCR Unit: Arizona Public Service; Four Corners Power Plant; Lined Ash Impoundment**

I, Alexander W. Gourlay, being a Registered Professional Engineer in good standing in the State of New Mexico, do hereby certify, to the best of my knowledge, information, and belief, that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the information contained in the initial post-closure plan dated October 17, 2016 meets the requirements of 40 CFR § 257.104.

Alexander W. Gourlay, P.E.

*Printed Name*

August 26, 2016

*Date*

