

## Cholla

EPA HQ - No comments - JM / CD

EPA Region -

No Comments

State -

From: "Michael J. Johnson" <mjjohnson@azwater.gov>  
To: James Kohler/DC/USEPA/US@EPA, John Schofield/R9/USEPA/US@EPA, 'Mel P.Bunkers' <Bunkers.Mel@azdeq.gov>  
Cc: Stephen Hoffman/DC/USEPA/US@EPA, Ravi Murthy <rmurthy@azwater.gov>, "Karen L. Smith" <klsmith@azwater.gov>  
Date: 11/09/2009 11:40 AM  
Subject: RE: Comment Request on EPA's Draft Coal Ash Impoundment Assessment Reports

Jim,

Thanks for the opportunity to review the reports. ADWR has no direct comments on the reports themselves. Please be advised that following our next inspection of the state-regulated dam at the Apache site (tentatively scheduled for December 2009), we will review the current earth fissure mitigation plan in light of more recent findings related to fissure monitoring and identification at other Arizona damsites.

Mike

Michael Johnson, Ph.D., P.E.  
Assistant Director, Surface Water Division  
Arizona Department of Water Resources  
(602) 771-8659  
mjjohnson@azwater.gov

From: "Mel P. Bunkers" <Bunkers.Mel@azdeq.gov>  
To: James Kohler/DC/USEPA/US@EPA  
Date: 11/20/2009 11:43 AM  
Subject: RE: Comment Request on EPA's Draft Coal Ash Impoundment Assessment Reports

Jim,

I have no comments at this time.

Thanks,

Mel Bunkers, Manager  
Hazardous Waste Inspections and Compliance Unit  
Arizona Department of Environmental Quality  
1110 W Washington Street

Phoenix, Arizona 85007  
Phone: (602) 771-4556  
Fax: (602) 771-4132

Company - See below and attached document dated November 9, 2009

Gentlemen,

We received your request for comment on EPA's draft assessment report for Arizona Public Service Company's Cholla Power Plant and will respond timely.

The purpose of this e-mail is to request that you change your contact information for APS fossil generation power plants from John Denman (our former Senior Vice President of Fossil Generation) to Mark Schiavoni (our new Senior Vice President of Fossil Generation).

Mark's contact information is:

Mark Schiavoni  
Senior Vice President, Fossil Generation  
Arizona Public Service Company  
400 North Fifth Street  
Mail Station 9040  
Phoenix, AZ 85004

Email: [mark.schiavoni@aps.com](mailto:mark.schiavoni@aps.com)  
Work: 602-250-4433  
Fax: 602-250-2367

Please forward this to anyone else at EPA with a need to know.

Thank you.

Ann Becker  
Arizona Public Service Company  
602-250-3722



A subsidiary of Pinnacle West Capital Corporation

Mark Schiavoni  
Senior Vice President  
Fossil

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Mail Station 9040  
PO Box 53999  
Phoenix, AZ 85072-3999

November 9, 2009

**Via Electronic Mail**

Mr. Stephen Hoffman  
U.S. Environmental Protection Agency  
Two Potomac Yard  
2733 S. Crystal Drive, 5<sup>th</sup> Floor, N-237  
Arlington, Virginia 22202-2733

**Re: Arizona Public Service Company's Response to Draft Site Assessment  
for the Cholla Power Plant.**

Dear Mr. Hoffman:

Arizona Public Service Company ("APS") is responding to Matt Hale's letter to John Denman, requesting that APS respond to GEI's October 2009 Draft Final Specific Site Assessment Report Regarding Coal Ash Impoundments at APS's Cholla Power Plant. APS's response to GEI's report is set forth below. The relevant text of the report (requiring a response) has also been reproduced for your reference.

**2.1 General**

*The Cholla facility is a coal-fired power plant located in northeastern Arizona in the town of Joseph City in Navajo County (Figure 1). The Cholla power plant is composed of four units with a total net generating capacity of 1,027 megawatts (MW). Unit 1 was constructed in 1961, and the much larger Units 2, 3 and 4 were constructed between 1978 and 1980. Units 1, 2 and 3 are owned by APS and Unit 4, the largest unit, is owned by PacifiCorp (APS, 2009 [website]). The power plant is located on the Little Colorado River.*

*APS Cholla has three water impoundments on site: Cholla Lake, the Sedimentation Pond and the West Area Retention Pond. Cholla Lake was originally constructed as a cooling pond for Unit 1, and currently stores water for the plant's scrubbers and provides backup cooling water if the well system primarily used for cooling the plant becomes inadequate. Cholla Lake does not contain any coal combustion waste products. The Sedimentation Pond collects water from drains located on the plant site, and receives minimal amounts of coal combustion byproducts in storm water, process water, plant water and slurry from system leaks. The West Area Retention Pond receives minimal amounts of coal combustion byproducts in storm water, process water and plant wash down from the west side of the plant. However, the Sedimentation Pond and the West Area Retention Pond*

*are both sub-grade impoundments and do not meet the definition of a dam as set forth in the Arizona Revised Statutes 45-1202 (1), and are therefore not regulated by the state. The Sedimentation Pond and the West Area Retention Pond were not included in our Field Assessment or document review but are discussed briefly in Section 2.2. Cholla Lake was not included in this specific site assessment since it does not contain coal combustion byproducts.*

**APS's Response:**

The actual construction dates for Units 2, 3, and 4 are 1976 through 1981. This also appears in section 3.0.

Add the word "process" to the first sentence of the second paragraph. The sentence should read "APS Cholla has three *process* water impoundments on site."

Replace the second sentence of the second paragraph with: "Cholla Lake was originally constructed as a cooling pond for Unit 1 and since 1978 serves as the cooling pond for both Unit 1 and Unit 2. It also stores water for the plant's other processes, including providing short term backup cooling water for Unit 3 and Unit 4 — if the well system primarily used for cooling these units becomes inadequate."

**2.2 Dams and Reservoirs**

*The Sedimentation Pond was placed into service in 1976. It collects discharges of wastewater from an on-site secondary wastewater treatment plant, effluent from the oil/water separator, vehicle wash water from a spray wash station, plant wash water containing small amounts of coal dust and coal ash from various drainage sumps and ditches, and flue gas desulfurization wastes from scrubber or scrubber feed tank upsets. This pond has a surface area of ½ acre and a total storage capacity of 10.7 acre-feet, indicating that it is approximately 20 feet deep. The pond currently stores 0.5 acre-feet of material. Water collected in the Sedimentation Pond is pumped to the Cholla facility's General Water Sump for recycling as process water. The pond also has an overflow weir at its south end which connects to a channel that conveys flows to the West Area Retention Pond (described below). Solids are removed from the Sedimentation Pond periodically and transferred to the Bottom Ash Pond or the Fly Ash Pond. The Sedimentation Pond has a two-foot-thick compacted clay liner.*

**APS's Response:**

The sedimentation pond has two separate cells, each one-half acre in size. Therefore, the depth is approximately 10 feet deep instead of 20. APS recommends that the third sentence of the second paragraph be changed to read: "This pond has a surface area of one acre and a total storage capacity of 10.7 acre-feet, indicating that it is approximately 10 feet deep."

### **3.0 Summary of Construction History and Operation**

*When Unit 1 was originally constructed, prior to passage of the Clean Water Act in 1972, coal combustion waste from the plant was discharged directly into the Little Colorado River. When Units 2, 3 and 4 were constructed starting in 1976, the Bottom Ash and Fly Ash Ponds were placed into service. Coal combustion waste products have since been pumped into these ponds for storage.*

#### **APS's Response:**

Coal combustion waste has never been discharged directly to the Little Colorado River. Prior to 1978, coal combustion waste from Unit 1 was discharged to an impoundment located just north of the Little Colorado River. Water from the impoundment was de-canted off and discharged directly to the Little Colorado River. This impoundment has since been deemed "closed" by the Arizona Department of Environmental Quality.

APS recommends the first sentence of this paragraph be written as follows: "When Unit 1 was originally constructed, prior to passage of the Clean Water Act in 1972, coal combustion waste from the plant was discharged to an impoundment located just north of the Little Colorado River. Water was de-canted from the coal combustion waste and discharged to the Little Colorado River."

### **8.4 Seismic Stability – Liquefaction Potential**

*Saturated granular soils that are potentially liquefiable are not present in the dam embankment and foundation of either the Fly Ash Pond Dam or the Bottom Ash Pond Dam.*

*The hydraulically-placed bottom ash that comprises the lower part of the intermediate dike that divides the reservoir may be susceptible to liquefaction. The feasibility study for the Bottom Ash Pond modifications (Dames & Moore, 1991) indicates that a failure of this bottom ash slope may propagate toward the downstream toe of the intermediate dike, possibly compromising its stability. Dames & Moore recommend in 1991 that a liquefaction analysis be performed for the intermediate dike. We did not review such an analysis, and if one was not performed, we recommend that one be completed to estimate the liquefaction potential of this material and the potential consequences of failure.*

#### **APS's Response:**

While liquefaction potential should be addressed in any hydraulically placed fill and would normally be indicated, our repeated analyses of bottom ash demonstrates that it is a free draining, well graded material, and does not display uniformity or low shear stress parameters that would indicate the necessity of a liquefaction analysis. We will document this conclusion and provide further discussion with our response to the final report, if necessary.

### ***12.1.1 Fly Ash Pond***

5. *Riprap should be replaced or redistributed in areas where it has eroded.*
6. *Vegetation on both dam slopes and on the crest should be removed during routine maintenance.*

#### **APS's Response:**

Riprap condition is a checkpoint on all inspections and riprap is added as required for routine maintenance. The pictures indicate this statement originates from an area where fill has been added over riprap for maintenance access. APS will provide additional "pre-fill" pictures to establish that the riprap is present.

For item 6, we would like to correct this statement to "Vegetation that exceeds the FEMA-534-Impact-of-Plants-on-Earthen-Dams, definition of woody plants on both dam slopes and on the crest should be removed during routine maintenance." The pictures show plants that do not meet the FEMA removal criteria.

### ***12.1.2 Bottom Ash Pond***

3. *A liquefaction analysis of the hydraulically-placed bottom ash that comprises the lower part the intermediate dike, which divides the reservoir, should be performed to determine whether failure of the intermediate dike or adjacent bottom ash slopes are likely in the event of an earthquake.*
4. *Riprap should be replaced or redistributed in areas where it has eroded.*
5. *Vegetation on both dam slopes and on the crest should be removed during routine maintenance.*

#### **APS's Response:**

Please see APS's response to 8.4 above for item 3.

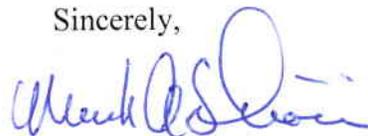
Please see APS's response to 12.1.1 above.

For item 5, we would like to correct this statement to "Vegetation that exceeds the FEMA-534-Impact-of-Plants-on-Earthen-Dams, definition of woody plants on both dam slopes and on the crest should be removed during routine maintenance." The pictures indicate plants that do not meet removal criteria.

Mr. Stephen Hoffman  
November 9, 2009  
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APS appreciates the opportunity to respond to GEI's draft report. Please feel free to contact me if the EPA or GEI has any additional questions or concerns.

Sincerely,



Mark A. Schiavoni

MAS/na