

CHOLLA POWER PLANT BOTTOM ASH POND

Periodic Inflow Design Flood Control System Plan

October 2021
AECOM Project 60664605

Prepared for:

Arizona Public Service
400 North 5th Street
Phoenix, AZ 85004

Prepared by:

AECOM
7720 North 16th Street, Suite 100
Phoenix, AZ 85020
aecom.com

Table of Contents

1.	Introduction	1
2.	Methodology	1
3.	Applicability of 2016 Plan Hydrologic Design Basis	2
4.	2016 Plan – Review by Section	2
4.1	“§257.82 Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”	2
4.2	“Overview”	2
4.3	“§257.82 (a)(1)(2)(3) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”	2
4.4	“§257.82 (b) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”	3
4.5	“§257.82 (c)(1)(2)(3)(4)(5) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”	3
4.6	“§257.82 (d) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”	3
5.	Recommended Additional Technical Investigations or Evaluations	3
6.	Conclusion	3
7.	Limitations	4
8.	Certification Statement	5

Attachment

Attachment A: AECOM, 2016, *Cholla Power Plant, Bottom Ash Pond, Inflow Design Flood Control System Plan, CH_Inflowflood_003_20161017*, September 28, 2016.

1. Introduction

This Periodic Inflow Design Flood Control System Plan for the Bottom Ash Pond at Cholla Power Plant, operated by Arizona Public Service (APS), has been prepared in accordance with the requirements of Title 40 of the Code of Federal Regulations Part 257 (40 CFR 257) (“the Coal Combustion Residuals [CCR] Rule”, or “the Rule”) and the specific requirement of 40 CFR § 257.82(c)(4) that “(t)he owner or operator of the CCR unit must prepare periodic inflow design flood control system plans required by paragraph (c)(1) of this section every five years.”

2. Methodology

The methodology used to prepare this 2021 Periodic Inflow Design Flood Control System Plan for the Bottom Ash Pond (BAP) at the Cholla Power Plant is for the certifying Qualified Professional Engineer (QPE) to:

1. Identify and review the hydrologic design basis references used for the 2016 Plan and verify applicability for use in 2021.
2. Perform a documented review of each major component of the contributing technical information from:
 - a. AECOM, 2016, Cholla Power Plant, Bottom Ash Pond, Inflow Design Flood Control System Plan, CH_Inflowflood_003_20161017, September 28, 2016 (hereafter referred to as the “2016 Plan” and incorporated and referenced directly as Attachment A to this document).
3. Consider and document whether the 2016 Plan and its conclusions:
 - a. Meet the current reporting requirements of the Rule;
 - b. Reflect the current condition of the structure, as known to the QPE and documented in the annual inspections;
 - c. Are compromised by any identified issues of concern; and
 - d. Are consistent with the standard of care of professionals performing similar evaluations in this region of the country; and
4. Identify any additional analyses, investigations, inspections, and/or repairs that should be completed in order to complete this 2021 Recertification.

This report documents the results of these considerations, incorporates the 2016 Plan as an Appendix, identifies any additional technical investigation or evaluations (if needed), and presents an updated certification by the QPE.

3. Applicability of 2016 Plan Hydrologic Design Basis

The 2016 Plan relied on then-current methodology for estimation of Probable Maximum Precipitation (PMP) depth that are prescribed by the Arizona Department of Water Resources (ADWR) and developed by Applied Weather Associates (AWA 2013). This PMP tool evaluates precipitation for the 72-hour general, 72-hour tropical, and the 6-hour local distribution. At the BAP site, the 6-hour local storm yields the largest runoff volume of the three distributions. The methodology yields a rainfall depth of 7.74 inches.

The relevant page of the ADWR website (<https://new.azwater.gov/dam-safety/az-pmp>) provides hyperlinks to the technical studies supporting the PMP tool, and the PMP tool itself, and includes a statement that “(t)he most recent version of the Statewide Probable Maximum Precipitation Study was published in 2013.”

AECOM concludes that the details presented in this section of the 2016 Plan adequately represent current conditions and satisfy the requirements of the Rule.

4. 2016 Plan – Review by Section

Other than as described in the remainder of this section, the details presented in this section of the 2016 Report adequately represent current conditions and satisfy the requirements of the Rule.

4.1 “§257.82 Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”

The details presented in this section of the 2016 Plan accurately describe the requirements of the Rule.

4.2 “Overview”

The details presented in this section of the 2016 Plan adequately represent current conditions and satisfy the requirements of the Rule.

4.3 “§257.82 (a)(1)(2)(3) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”

A separate 2021 Periodic Hazard Potential Study confirms the assignment of the most severe classification, High Hazard, to the BAP. Therefore, this aspect of the 2016 Plan adequately represents current conditions and satisfies the requirements of the Rule.

As described in Section “3. Applicability of 2016 Plan Hydrologic Design Basis” of this 2021 Plan, the methodology used in the 2016 Plan for estimation of the PMP depth is the same as the ADWR advises for use in 2021. Therefore, this aspect of the 2016 Plan adequately represents current conditions and satisfies the requirements of the Rule.

APS had reported no change in the operational procedures and maximum operating levels for the BAP. The dredge solids removal program continues, though less frequently because the Plant is operated only seasonally. The characterization of the flood storage volume capacity available within the BAP that was reported in the 2016 Plan is unchanged and therefore adequately represents current conditions and satisfies the requirements of the Rule.

4.4 “§257.82 (b) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”

The details presented in this section of the 2016 Plan adequately represent current conditions and satisfy the requirements of the Rule.

4.5 “§257.82 (c)(1)(2)(3)(4)(5) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”

The owner or operator continues to acknowledge and will comply with these requirements.

Per the requirement of §257.82 (c)(4), this document constitutes the “every five years” Periodic Inflow Design Flood Control System Plan.

A certification of this Periodic Inflow Design Flood Control System Plan by a QPE is included in this document per the requirement of §257.82(c)(5).

4.6 “§257.82 (d) Hydrologic and Hydraulic capacity requirements for CCR surface impoundments”

The owner or operator continues to acknowledge and will comply with these requirements.

5. Recommended Additional Technical Investigations or Evaluations

None identified and none recommended.

6. Conclusion

The 2016 Plan and its conclusions meet the current reporting requirements of the Rule, reflect the current condition of the structure as known to the QPE and documented in the annual inspections, are not compromised by any identified issues of concern, and are consistent with the standard of care of professionals performing similar evaluations in this region of the country.

7. Limitations

This document is for the sole use of APS on this project only and is not to be used for other projects. In the event that conclusions based upon the data presented in this document are made by others, such conclusions are the responsibility of others.

The Periodic Inflow Design Flood Control System Plan presented in this report is based on the 2016 Plan and relies and incorporates any Limitations expressed in that document.

The Certification of Professional Opinion in this report is limited to the information available to AECOM at the time this Assessment was performed in accordance with current practice and the standard of care. Standard of care is defined as the ordinary diligence exercised by fellow practitioners in this area performing the same services under similar circumstances during the same period. Professional judgments presented herein are primarily based on information from previous reports that have been assumed to be accurate, knowledge of the site, and partly on our general experience with dam safety evaluations performed on other dams.

No warranty or guarantee, either written or implied, is applicable to this work. The use of the word “certification” and/or “certify” in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

8. Certification Statement

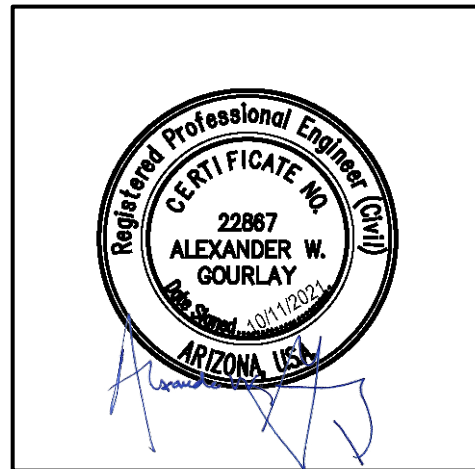
Certification Statement for:

- Certification Statement 40 CFR § 257.82(c)(5) – Periodic Inflow Design Flood Control System Plan for an Existing CCR Surface Impoundment.
- CCR Unit: Arizona Public Service; Cholla Power Plant; Bottom Ash Pond

I, Alexander W. Gourlay, being a Registered Professional Engineer in good standing in the State of Arizona, 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 this Periodic Inflow Design Flood Control System Plan dated October 2021, including the technical content in Attachment A, meets the requirements of 40 CFR § 257.81.

Alexander W. Gourlay, P.E.
Printed Name

October 11, 2021
Date



Attachment A:

AECOM, 2016, Cholla Power Plant, Bottom Ash Pond, Inflow Design Flood Control System Plan, CH_Inflowflood_003_20161017, September 28, 2016.

ATTACHMENT A

**AECOM, 2016. *Cholla Power Plant, Bottom Ash Pond, Inflow Design
Flood Control System Plan, CH_Inflowflood_003_20161017,*
September 28, 2016.**

aecom.com