Arizona Public Service
Four Corners Power Plant

Return Water Pond

Location Restrictions Demonstration Report

Prepared for:
Arizona Public Service

AECOM Job No. 60596770
March 31, 2020
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Certification Statement

Certification Statement for Location Restrictions:

- 40 CFR § 257.60 – Placement above the uppermost aquifer
- 40 CFR § 257.61 – Wetlands
- 40 CFR § 257.62 – Fault areas
- 40 CFR § 257.63 – Seismic impact zones
- 40 CFR § 257.64 – Unstable Areas

CCR Unit: Arizona Public Service Company; Four Corners Power Plant; Return Water Pond

I, David Mickanen, 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 demonstration regarding the location of the CCR unit less than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer, the demonstration regarding the location of the CCR unit in the wetlands, the demonstration regarding the location of the CCR unit within 60 meters (200 feet) of the outermost damage zone of a fault that has had a displacement in Holocene time, the demonstration regarding the location of the CCR unit in a seismic impact zone, and the demonstration that the location of the CCR unit is not in an unstable area, as included in the Location Restrictions Demonstration Report dated March 31, 2020 meets the requirements of 40 CFR § 257.60(a), § 257.61(a), § 257.62(a), § 257.63(a), and § 257.64(a).

__________________________
David E. Mickanen, P.E.

Printed Name

__________________________
March 31, 2020

Date
1 Introduction

Arizona Public Service Company (APS) contracted AECOM to assist in the location restrictions demonstrations of the Return Water Pond (RWP), a new coal combustion residual (CCR) surface impoundment facility at the Four Corners Power Plant (FCPP, the Plant) within the Navajo Nation, near Fruitland, New Mexico. The RWP consists of two cells – the Flue Gas Desulfurization (FGD) cell and the Return Water Pond cell – collectively referred to as the "RWP." Figure 1-1 shows the location of the RWP at the FCPP. This Location Restrictions Demonstration Report documents location-specific conditions relevant to the RWP.

1.1 Report Purpose and Description

The purpose of this report is to document the location restrictions demonstration for the RWP. The RWP is a new CCR surface impoundment APS constructed in 2019. In 2015, the United States Environmental Protection Agency (EPA) finalized a rule (Rule) regulating CCRs under subtitle D of the Resource Conservation and Recovery Act (RCRA). As part of this Rule, owners and operators of new CCR surface impoundments must obtain a certification from a qualified professional engineer stating that the demonstrations for the CCR unit meet the requirements relative to the uppermost aquifer, wetlands, fault areas, seismic impact zones, and unstable areas.

1.2 EPA Regulatory Requirements

On April 17, 2015 the United States Environmental Protection Agency issued 40 CFR Part 257 Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule (the Rule). Sections 257.60 through 257.64 define location restriction criteria for new CCR surface impoundments and require the owner or operator of the CCR unit to demonstrate that the unit meets minimum requirements for:

a) Placement above the uppermost aquifer (§ 257.60);
b) Location outside wetlands (§ 257.61);
c) Location more than 60 meters (200 feet) from the outermost damage zone of a fault that has had displacement in Holocene time (§ 257.62);
d) Location outside seismic impact zones (§ 257.63);
e) Location away from unstable areas (§ 257.64).

New CCR surface impoundments, such as the RWP, are required to demonstrate compliance with the location restrictions no later than the date of initial receipt of CCR in the CCR unit. An owner or operator who fails to make the demonstration showing compliance with the requirements under 40 CFR § 257.60(a), § 257.61(a), § 257.62(a), § 257.63(a), or § 257.64(a) is prohibited from placing CCR in the CCR unit.

1.3 Report Organization

This Demonstration Report is organized into the following sections:

<table>
<thead>
<tr>
<th>Report Section</th>
<th>Applicable CFR 40 Part 257 Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1 – Introduction</td>
<td>§ 257.60 Placement above the uppermost aquifer</td>
</tr>
<tr>
<td>Section 2 – Placement Above the Uppermost Aquifer</td>
<td>§ 257.61 Wetlands</td>
</tr>
<tr>
<td>Section 3 – Location Relative to Wetlands</td>
<td>§ 257.62 Fault areas</td>
</tr>
<tr>
<td>Section 4 – Location Relative to Fault Areas</td>
<td></td>
</tr>
</tbody>
</table>
1.4 Facility Description

The FCPP is an electric generating station located within the Navajo Nation, near Fruitland, New Mexico. The FCPP is operated by APS and owned by a consortium of utility companies. The FCPP consists of two coal-fired electrical generating units, Units 4 and 5. Units 1, 2, and 3 ceased generation in 2013 and were then decommissioned. The two generating units are cooled by water from Morgan Lake, a man-made reservoir located immediately north of the Plant. Five existing CCR units are located at the FCPP: the Combined Waste Treatment Pond (CWTP) located immediately east of the Plant, the Lined Ash Impoundment (LAI) located approximately 1 mile west of the Plant, the Lined Decant Water Pond (LDWP) located approximately 1.5 miles west of the Plant and adjacent to the LAI, the Return Water Pond (RWP) located between the LAI and the Plant, and the Dry Fly Ash Disposal Area (DFADA), a landfill located approximately 2 miles southwest of the Plant and south of the LAI. A sixth CCR unit, the Upper Retention Sump, was decommissioned and permanently closed in 2018. Figure 1-1 shows the locations of these units.

The RWP was constructed in 2019. Inflow to the RWP is managed by four distinct pumping stations, which are manually operated by plant personnel. Outflow from the RWP is managed by a dedicated pumping station, which is manually operated by plant personnel. Water in the RWP is pumped back to the plant and used as process makeup water.

The RWP is a geosynthetic-lined dike with 3 horizontal : 1 vertical (3H:1V) upstream and downstream slopes constructed using processed weathered shale and sandstone material from the excavation footprint. The dike crest width is 20 feet and the maximum height is approximately 13 feet. The RWP liner system consists of a primary 60-mil HDPE geomembrane liner, a drainage geonet, a secondary 60-mil HDPE geomembrane liner, a geosynthetic clay liner (GCL), and a prepared subgrade (scarified, proof-rolled, and compacted). The RWP has a surface area of 5.1 acres and a storage capacity of 38.6 ac-ft (at elevation 5379 feet).
2 Placement Above the Uppermost Aquifer

40 CFR § 257.60 requires that new CCR surface impoundments must be constructed with a base that is located no less than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer, unless the owner or operator demonstrates that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevation (including the seasonal high water table).

*Uppermost aquifer* is defined by the Rule to mean the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

2.1 Methodology

The following information was reviewed to assess the vertical location of the RWP relative to the uppermost aquifer:

- Preconstruction topographic conditions shown on construction plans (included in Appendix A)
- As-built drawings for the RWP (APS 2020)
- CCR Monitoring Well Network Report and Certification (AECOM 2017)

2.2 Discussion and Conclusion

2.2.1 Base Elevation of the CCR Unit

The base elevation (EL) of the RWP is EL 5362.61 feet, the lowest elevation at the bottom of the pond and the location of the leachate collection and recovery system (LCRS). This elevation is called out on Sheet 14 of the FC45CM-C-65-WP-AP-200485 drawing set (Appendix A).

2.2.2 Groundwater Elevations

APS will install groundwater monitoring wells around the RWP prior to the initial receipt of CCR. Until the new wells are installed, the closest groundwater monitoring wells to the RWP are MW-12R1 and MW-50A based on figures presented in the 2019 Annual Groundwater Monitoring and Corrective Action Report (wood. 2020). The water elevations in wells LS-1 and LS-2 are completed in the unweathered portion of the Lewis Shale (wood. 2019) and the depth to water in these wells is not regularly measured.

Monitoring well MW-12R1 was constructed in 2018 and is screened in the weathered Lewis Shale between 22 feet (EL 5246.23 feet) and 32 feet (EL 5236.23 feet NAVD88) below ground surface (EL 5268.23 feet NAVD83) (AECOM 2017). No water was encountered during drilling. MW-12R1 was dry during the first reading event in November 2018 (wood. 2019) and dry in the subsequent reading event in November/December 2019 (wood. 2020).

Monitoring well MW-49A was constructed in 2013 and is screened in the weathered Lewis Shale between 50 feet (EL 5231.38 feet NAVD88) and 65 feet (EL 5216.38 feet NAVD88) below ground surface (EL 5281.38 feet NAVD83) (AECOM 2017). No water was encountered during drilling. The highest water elevation measured is EL 5241.73 feet (NAVD88) during the January/February 2017 reading event.
Monitoring well MW-50A was constructed in 2013 and is screened in the weathered Lewis Shale between 28 feet (EL 5305.2 feet NAVD88) and 43 feet (EL 5290.2 feet NAVD88) below ground surface (EL 5333.2 feet NAVD83) (AECOM 2017). No water was encountered during drilling. The highest water elevation measured is EL 5292.60 feet (NAVD88) during the October 2016 reading event.

Monitoring well MW-73 was constructed in 2017 and is screened in poorly graded sand with silt and clayey sand between 28.8 feet (EL 5323.10 feet NAVD88) and 43.8 feet (EL 5308.10 feet NAVD88) below ground surface (EL 5351.90 feet NAVD83) (AECOM 2017). Water was encountered at a depth of 22 feet (EL 5329.90 feet NAVD88) during drilling and was observed to be at a depth of 21.80 feet (EL 5330.10 feet NAVD88) after drilling; this is also the highest water elevation measured.

Table 1 presents well data and the water level elevations in the wells monitored near the RWP (AECOM 2017, AECOM 2018, Amec Foster Wheeler 2018, wood. 2019, and wood. 2020).

Table 1 – Well Data and Groundwater Elevations (ft)¹

<table>
<thead>
<tr>
<th>Well Name</th>
<th>MW-12R1</th>
<th>MW-49A</th>
<th>MW-50A</th>
<th>MW-73</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location Relative to the RWP</td>
<td>West</td>
<td>West</td>
<td>North</td>
<td>North</td>
</tr>
<tr>
<td>Surface Elevation (ft)</td>
<td>5268.23</td>
<td>5281.38</td>
<td>5333.2</td>
<td>5351.90</td>
</tr>
<tr>
<td>Bottom of Screen (ft)</td>
<td>5236.23</td>
<td>5216.38</td>
<td>5290.2</td>
<td>5308.10</td>
</tr>
<tr>
<td>Screened In</td>
<td>Weathered Shale</td>
<td>Weathered Shale</td>
<td>Weathered Shale</td>
<td>Sand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement Date</th>
<th>MW-12R1</th>
<th>MW-49A</th>
<th>MW-50A</th>
<th>MW-73</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/3-11/9, 11/14/2015</td>
<td>NI²</td>
<td>5229.25</td>
<td>5291.83</td>
<td>NI²</td>
</tr>
<tr>
<td>4/25/2016</td>
<td>NI²</td>
<td>5240.79</td>
<td>5292.44</td>
<td>NI²</td>
</tr>
<tr>
<td>9/12/2016</td>
<td>NI²</td>
<td>5240.56</td>
<td>5292.49</td>
<td>NI²</td>
</tr>
<tr>
<td>10/19-10/20/2016</td>
<td>NI²</td>
<td>5241.06</td>
<td>5292.60</td>
<td>NI²</td>
</tr>
<tr>
<td>1/31-2/1/2017</td>
<td>NI²</td>
<td>5241.73</td>
<td>5292.29</td>
<td>5329.96</td>
</tr>
<tr>
<td>5/1/2017</td>
<td>NI²</td>
<td>5240.98</td>
<td>5292.43</td>
<td>5329.67</td>
</tr>
<tr>
<td>9/9/2017</td>
<td>NI²</td>
<td>5240.64</td>
<td>5292.16</td>
<td>5328.63</td>
</tr>
<tr>
<td>10/11/2017</td>
<td>NI²</td>
<td>5240.62</td>
<td>5292.15</td>
<td>5329.36</td>
</tr>
<tr>
<td>3/15/2018</td>
<td>NI²</td>
<td>5236.73</td>
<td>5292.21</td>
<td>5330.05</td>
</tr>
<tr>
<td>5/31/2018</td>
<td>NM³</td>
<td>5240.54</td>
<td>Dry</td>
<td>5329.09</td>
</tr>
<tr>
<td>11/2/2018</td>
<td>Dry</td>
<td>5240.67</td>
<td>Dry</td>
<td>5329.06</td>
</tr>
<tr>
<td>March/April 2019</td>
<td>NM³</td>
<td>5239.42</td>
<td>5292.05</td>
<td>5329.61</td>
</tr>
<tr>
<td>May 2019</td>
<td>NM³</td>
<td>5239.34</td>
<td>NM³</td>
<td>5328.64</td>
</tr>
<tr>
<td>November/December 2019</td>
<td>Dry</td>
<td>5238.88</td>
<td>5292.58</td>
<td>5329.22</td>
</tr>
</tbody>
</table>

| Highest Recorded Groundwater Elevation (ft) | <5236.23 | 5241.73 | 5292.60 | 5330.10 (after installation) |

1) Elevations are presented in NAVD88.
2) NI = Not installed.
3) NM = The groundwater elevation was not measured on the date shown.
2.2.3 Separation from the Uppermost Aquifer

Groundwater elevations recorded in the weathered shale underlying the RWP are historically below EL 5330.10 feet (NAVD88) approximately 1,500 feet north of the pond and below EL 5241.73 feet (NAVD88) approximately 2,200 feet west of the pond. Assuming the water elevation measured in monitoring well MW-73 after installation (EL 5330.10 feet, NAVD88) is the same as the water elevation beneath the RWP, the base elevation of the RWP at EL 5362.61 feet (NAVD88) is approximately 32.5 feet higher than the highest recorded groundwater elevation at monitoring well MW-50A.

**Conclusion:** The base of the RWP is located greater than 1.52 meters (5 feet) above the groundwater level in the uppermost aquifer.
3 Location Relative to Wetlands

40 CFR § 257.61 requires that new CCR surface impoundments are not to be located in wetlands. Wetlands are defined in 40 CFR § 232.2 as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

3.1 Methodology

A wetland delineation was performed in April 2012 and jurisdictional determinations of the wetlands identified have been reviewed and accepted by the U.S. Army Corps of Engineers and the Environmental Protection Agency (United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement 2015). A map of wetlands identified at the FCPP in this study is presented in Appendix B.

3.2 Discussion and Conclusion

No wetlands were identified in the footprint of the RWP. One 0.07-acre wetland is located approximately 6,500 feet from the RWP. The wetland drains into a concrete-lined detention pond upstream of the Pond 3 pump house.

Conclusion: The RWP is not located in wetlands.
4 Location Relative to Fault Areas

40 CFR § 257.62 requires that new CCR surface impoundments are not to be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time (beginning 11,700 years before present (BP)) unless the owner or operator demonstrates that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.

4.1 Methodology

AECOM reviewed the Quaternary Faults and Folds database maintained by the United States Geological Survey (USGS) as part of the Holocene fault search (USGS 2019b). The Holocene epoch is the most recent subdivision of the Quaternary period and therefore any faults that have had displacement in the Holocene would also be included in the Quaternary period database. The Quaternary Faults and Folds database is the source for the faults used in the National Seismic Hazard Maps and contains information on faults and associated folds that are believed to be sources of M > 6 earthquakes during the Quaternary Period. AECOM searched the USGS Quaternary Fault and Fold Database for Category A and Category B faults in San Juan County, New Mexico. Fault categories are defined in Table 2. Fault categories A and B relate to the Rule; fault categories C and D describe less defined or non-tectonic features.

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Geologic evidence demonstrates the existence of a Quaternary fault of tectonic origin, whether the fault is exposed by mapping or inferred from liquefaction or other deformational features.</td>
</tr>
<tr>
<td>B</td>
<td>Geologic evidence demonstrates the existence of Quaternary deformation, but either (1) the fault might not extend deeply enough to be a potential source of significant earthquakes, or (2) the currently available geologic evidence is too strong to confidently assign the feature to Class C but not strong enough to assign it to Class A.</td>
</tr>
<tr>
<td>C</td>
<td>Geologic evidence is insufficient to demonstrate (1) the existence of tectonic faulting, or (2) Quaternary slip or deformation associated with the feature.</td>
</tr>
<tr>
<td>D</td>
<td>Geologic evidence demonstrates that the feature is not a tectonic fault or feature; this category includes features such as joints, landslides, erosional or fluvial scarps, or other landforms resembling scarps but of demonstrable non-tectonic origin.</td>
</tr>
</tbody>
</table>

4.2 Discussion and Conclusion

The USGS Quaternary Faults and Folds Database of the United States does not contain any Class A or Class B faults in San Juan County.

Conclusion: No faults with displacement in Holocene time are present within 200 feet of the RWP.
5 Location Relative to Seismic Impact Zones

40 CFR § 257.63 requires new CCR surface impoundments are not to be located in seismic impact zones unless the owner or operator demonstrates that all structural components, including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. Seismic impact zone is defined by the Rule as an area having a 2 percent or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth’s gravitational pull (g), will exceed 0.10 g in 50 years.

5.1 Methodology

The USGS maintains the Unified Hazard Tool website to provide access to the source and attenuation models for locations within the United States. AECOM utilized version 4.0.x of the 2014 Unified Hazard Tool to calculate the peak horizontal ground acceleration (PGA) with a 2 percent probability of exceedance in 50 years (USGS 2019a) for the RWP location. The Unified Hazard Tool result is presented in Appendix C.

5.2 Discussion and Conclusion

The PGA with a 2 percent probability of exceedance in 50 years for the RWP is 0.0747g. This value is less than the Rule-required maximum value of 0.10 g in 50 years.

Conclusion: The RWP is not located in a seismic impact zone.
6 Location Relative to Unstable Areas

40 CFR § 257.64 requires that new CCR surface impoundments are not to be located in an unstable area unless the owner or operator demonstrates that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted. The following factors must be considered when determining whether the area is unstable:

1) On-site or local soil conditions that may result in significant differential settling;
2) On-site or local geologic or geomorphologic features; and
3) On-site or local human-made features or events (both surface and subsurface).

Structural components means liners, leachate collection and removal systems, final covers, run-on and run-off systems, inflow design flood control systems, and any other component used in the construction and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents of the unit are not released into the environment.

Unstable area means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.

6.1 Methodology

The location of the RWP relative to unstable areas was assessed by reviewing design and construction documentation, historic geological and geotechnical investigations, and engineering analyses (safety factor calculations). Information was reviewed to assess: 1) whether poor foundation conditions may exist which could result in inadequate foundation support for structural components of the RWP, and 2) whether areas susceptible to mass movement (such as subsidence, landslides, avalanches, debris slides and flows, block sliding, or rock falls) capable of impairing the integrity of the structural components of the RWP are present.

6.2 Discussion and Conclusion

6.2.1 Geologic Setting

The FCPP is located on the western flank of the San Juan Basin, in the Colorado Plateau physiographic province in northwestern New Mexico. The San Juan Basin is a structural basin approximately 100 miles from north to south and 90 miles from east to west underlain by laterally extensive, gently dipping to flat-lying sedimentary rocks of Late Cretaceous age. The northwestern boundary of the San Juan Basin is defined by the Hogback Monocline. The Hogback Monocline is a structural monocline where the generally horizontal to gently dipping Cretaceous sedimentary rock units in the area are uplifted into a one-sided fold which dips steeply (approximately 38 degrees) to the east. The resulting bedrock ridge approximately 3 miles west of the Plant is composed of younger rock units on the eastern flank and progressively older units exposed in the central and western portions of the Hogback.

Karst terrain is not known to be present beneath the FCPP or RWP footprint based on the predominance of shale and sandstone in the area.

6.2.2 Foundation Conditions

The RWP is founded on native soil primarily consisting of hard weathered shale and sandstone. The native soils and shale underlying the RWP appear to be competent materials based on test pits excavated within the RWP footprint prior to construction, nearby well logs for LS-1, LS-2, and MW-50A (AECOM 2017), and observations...
during construction. Based on knowledge of the site and available geologic information, AECOM does not believe that the presence of the RWP will cause significant differential settling across the weathered shale or sandstone underlying the site.

**Conditions Associated with Unstable Areas:** The Rule identifies three conditions that must be considered when determining whether the area is unstable:

1. **On-site or local soil conditions that may result in significant differential settling:**
   
   The RWP was constructed by excavating the existing weathered shale and sandstone from the pond footprint and using a portion of the excavated material to construct the perimeter embankment. The maximum excavation for the RWP is approximately 12 feet in the vicinity of the LCRS risers in both cells. The maximum embankment height, measured from EL 5381 feet at the crest to EL 5368 at the toe on the north side of the impoundment, is 13 feet. This relatively short embankment height applies approximately 1,500 psf to the underlying shale and sandstone. Based on AECOM’s experience at the FCPP, this additional overburden stress is not expected to cause the weathered shale and sandstone to experience significant differential settling.

2. **On-site or local geologic or geomorphologic features:**
   
   There are no identified geologic or geomorphologic features that could cause the area of the RWP to become unstable.

3. **On-site or local human-made features or events (both surface and subsurface):**
   
   The impounded water level in the RWP is monitored by APS personnel and APS has the ability to reduce the impounded water level if required to maintain the safe operation of the CCR unit.

**6.2.3 Areas Susceptible to Mass Movement**

The RWP is constructed on top of an area of relatively higher topography. Topographic and geologic conditions in the area do not indicate the potential for landslides, avalanches, debris slides, debris flows, block sliding, rock falls, or other mass movements which could impact the structural components of the RWP.

**Conclusion:** The RWP is not located in an unstable area.
7 Conclusions

Based on the findings and results of the location restrictions demonstrations, AECOM provides the following conclusions for the RWP:

- The base of the RWP is located greater than 1.52 meters (5 feet) above the groundwater level in the uppermost aquifer.
- The RWP is not located in wetlands.
- No faults with Holocene displacement are present within 200 feet of the RWP.
- The RWP is not located in a seismic impact zone.
- The RWP is not located in an unstable area.
8 Limitations

This report 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 obtained in this report are made by others, such conclusions are the responsibility of others. The Certification of Professional Opinion is limited to the information available to AECOM at the time this report was written. This report was written 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 were assumed to be accurate partly based on knowledge of the site and partly based on our general experience with similar evaluations performed for similar structures. No warranty or guarantee, express or implied, is applicable to this work.

The use of the words “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.
9 References


Appendix A.
As-Built Drawings
GENERAL CONSTRUCTION NOTES:

1. THE WORKER UNDER EXPOSURE TO THE RISK OF FALLING OR CRYSTALIZATION.

2. SIMPLIFIED PENNY DIAMOND FOR THE LOCATION OF THE EXISTING WALL.

3. SYMBOLS CONFORM TO THE IEC.
CONSTRUCTION NOTES:

1. **EXISTING W.S.C. 400V/347V REPLACE EXISTING NET WELL PUMP STARTER WITH NEW UNIT FOR 10HP MOTORS. REBUILD EXISTING W.S.C. UNIT WITH 4 STARTERS SIMILAR TO AND BULLETIN 2015**

2. **SPARE STARTER CAN BE REMOVED AND TURNED OVER TO APS IF SPACE IS REQUIRED FOR NEW STARTERS.**
GENERAL PURPOSE NOTES:

REPLACE CROSS ARM
REPLACE 3-50KVA TRANSFORMERS (480V, 3W)
INSTALL 3-75KVA TRANSFORMERS (277/480V, 300 4W)
REPLACE TRANSITION
INSTALL 2.4" CONDUIT FROM POLE TO BREAKER
SECTION RUN 2 SETS OF UA750DDV

SPEC CODES:

D1
REPLACE
3470.W3MPLU002W
7185.W4F944
7462.AD5(3)
5092.W2UA750DDV

INSTALL
2705.UA750DDV(2)

TOTAL WIRE DATA FOOTAGE:
SECONDARY/SERVICE/ST.LT./D-D
6220 UA750DDV= 200
### CABLE & CONDUIT NOTES

| C2U1(1) | 92' 35R SWEEPS TO TRANSITION POLE 3-Jrut to Transition Pole |
| C2U1(2) | 92' 35R SWEEPS TO TK1 3-Jrut to TK1 |
| C2U1(3) | 92' 35R SWEEPS TO DISCONNECT 1-Jrut/TK1 to DISCONNECT |
| C7U1(1) | 92' 35R SWEEPS TO DISCONNECT 1-Jrut/TK1 to DISCONNECT |

### GENERAL NOTES

1. ALL TRANSFORMER LOCATIONS SHALL COMPLY WITH ALL CODES, ORDINANCES, AND REGULATIONS WITHIN THE STATE OF ARIZONA OR OTHERWISE SPECIFIED BY APS.
2. CUSTOMER TO PROVIDE ALL WORK NEEDED WITH THE PAD AND CONDUITS.
3. ALL CONDUITS MUST BE INSPECTED AND APPROVED PRIOR TO BACKFILLING.
4. ALL CONCRETE FORMS AND CONDUITS MUST BE RINSED OF EXCESS WATER IN PLACE AND APPROVED PRIOR TO TOURING PO.
5. ALL VARIOUS FORMS AND CONDUITS MUST BE RINSED OF EXCESS WATER PRIOR TO TOURING PO.
6. A MINIMUM 24-HOUR NOTICE IS REQUIRED FOR INSPECTIONS.
Appendix B. 
Wetlands Map
Figure 4.5-7
Jurisdictional Waters of the US in the Vicinity of the FCPP Proposed Ash Disposal Facility

RWP (approximate scale and location)

GPS Survey Point (#)
Wetland
Chaco River OHWM
Ephemeral
Intermittent
Ordinary High Water Mark Observed*
Jurisdictional (highlighted)
Waters of the U.S. Delineation Boundary
Existing Fly Ash Disposal Facilities
Proposed Fly Ash Facility
Chaco River Avoidance Area
Avoidance Area

*Observed Ordinary High Water Mark without jurisdiction is considered isolated.
Appendix C.
Unified Hazard Tool Summary
Unified Hazard Tool

⚠️ Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

| ^ Input |
| --- | --- |
| **Edition** | **Spectral Period** |
| Conterminous U.S. 2014 (v4.0.x) | Peak Ground Acceleration |
| **Latitude** | **Time Horizon** |
| Decimal degrees | Return period in years |
| 36.684877 | 2475 |
| **Longitude** |  |
| Decimal degrees, negative values for western lon… | |
| -108.492182 | |
| **Site Class** |  |
| 760 m/s (B/C boundary) | |
Hazard Curve

View Raw Data

https://earthquake.usgs.gov/hazards/interactive/