

**LOCATION RESTRICTION DEMONSTRATION  
UNSTABLE AREAS (40 C.F.R. PART 257.64)  
PLANT HAMMOND ASH POND 3 (AP-3)  
GEORGIA POWER COMPANY**

Plant Hammond AP-3 is subject to the timelines announced in 81 Fed. Reg. 51802 (5 August 2016). EPA's "Disposal of Coal Combustion Residuals from Electric Utilities Final Rule" (40 C.F.R. Part 257.64), requires that existing CCR surface impoundments must not be located in an unstable area unless 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 USEPA CCR Rule defines an unstable area as "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 may include poor foundation soil conditions, areas susceptible to mass movements, and geological conditions such as karst terrains.

Soil Conditions

The soil conditions in the vicinity and beneath AP-3 are not expected to be susceptible to liquefaction or significant differential settling. Based on historical borings advanced at Plant Hammond (Plant), the soil conditions in the vicinity and beneath AP-3 contain significant amounts of clay that is not susceptible to liquefaction. Soils are reported to generally consist of clayey sand and sandy lean to fat clay; these materials are relatively stiff and have a low susceptibility to liquify during seismic events. Further, there is no known history of issues associated with settlement or differential settlement at AP-3. Therefore, soil conditions in the vicinity and beneath AP-3 should not result in significant differential settlement.

Geologic Conditions

The National Karst Map (United States Geological Survey [USGS,] 2014), which shows locations of karst and potential karst areas in soluble rocks in the contiguous United States, identifies the area in the vicinity of the Site as "carbonate rocks at or near the land surface (occurring in a humid climate)". The limestones in this area may potentially be affected by karst due to dissolution of the carbonate rock units present throughout the region. The site is underlain by Conasauga Formation limestone, which is potentially affected by karst processes. Observation of rock cores during drilling and review of boring logs from the site indicate the presence of discontinuous solution features, but do not suggest the presence of large, laterally continuous karst features such as caverns or sinkholes.

A review of 7.5-minute USGS topographic maps (Rock Mountain, GA and Livingston, GA) of the area identified as potentially karst, found that the typical surface expressions of karst features, such as sinkholes, depressions, and sinking or disappearing streams are not exhibited. The presence of few springs and wet-weather seeps in western Floyd County suggests that large-scale karst dissolution features are not a major influence on regional groundwater flow and hydrogeology in the shaley limestone geologic formation underlying the Site.

Documented historical water loss from AP-3 during the early stages of operation (late 1970's) were related to wet-slucicing and the likely presence of solution-enhanced joints and fractures in the underlying bedrock. These conditions were mitigated with repair of the area of water loss

and conversion to dry-handling operations at AP-3 in 1982. Additionally, the final closure design of AP-3, including removal of free water and installation of a low permeability cover, further reduces the potential for adverse effects on the structural components of the unit.

AP-3 is situated on a relatively flat site that is not at risk from unstable natural slopes, mass movements, or erosive undercutting by the nearby surface water bodies of Cabin Creek or the Coosa River.

#### Human-made Features

Prior to completion of the final in-place closure of AP-3, human-made features such as pipes or other dike penetrations within the final closure footprint were decommissioned and removed. There are no human-made features or future activities at the Site that are anticipated to have a potential adverse impact on the structural components or integrity of the closed unit. Based on the foregoing, AP-3 will not be prone to disruption due to human-made features at the site.

#### Engineering and Operational Practices

In the early operational history of AP-3, there was documented leakage of water from a discrete area of the base of the impoundment, likely due to the wet-slucing operations and the presence of a solution feature near the foundation. Mitigation activities were completed in the area and the impoundment was converted to dry handling operations in 1982. Dry handling of the CCR eliminates the addition of sluice water to the impoundment, removing the mechanism for erosion of foundation material into the underlying bedrock. Since the conversion to dry handling of CCR, there have been no documented cases of drop-outs, loss of water or material, or issues related to the foundation or dikes. The removal of free water from the pond and the placement of a low permeability cover system at AP-3 greatly reduced the potential for adverse effects on the structural components of the unit related to karst features. Under current post-closure conditions, there are no known conditions that would contribute to unstable foundations at AP-3.

Based on the information outlined in this demonstration, and the stable conditions of the emplaced CCR material in the unit over the last nearly 40 years, it is evident that recognized and generally-accepted good engineering practices have been incorporated into the design of the impoundment. The integrity of the structural components of the unit have not been disrupted. The absence of soils which are susceptible to liquefaction or differential settlement, the mitigation of the 1977 leakage, the change in operating conditions, the installation of a low-permeability cap, and the absence of human-made dike penetrations, demonstrate that AP-3 meets the location restriction requirement of 40 CFR §257.64.

I hereby certify that for Georgia Power's Plant Hammond AP-3, the unstable areas location restriction demonstration meets the requirements of 40 C.F.R. 257.64(a).



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