

INITIAL STRUCTURAL STABILITY ASSESSMENT
40 C.F.R. § 257.100(f)(2)(iv) and 40 C.F.R. § 257.73(d)
PLANT HARLLEE BRANCH ASH POND E (AP-E)
GEORGIA POWER COMPANY

A rule amendment to the Federal CCR Rule became effective on November 8, 2024. See Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Legacy CCR Surface Impoundments, 89 Fed. Reg. 38950 (“Legacy Rule”). This Legacy Rule defines the term “legacy CCR surface impoundment” and establishes regulatory requirements for units that meet the definition of a legacy CCR surface impoundment. The Legacy Rule requires the owner or operator of a legacy CCR impoundment to conduct an initial and periodic structural stability assessment of the CCR unit and document whether the design, construction, operation and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. See 40 C.F.R. Part 257, § 257.100(f)(2)(iv) and § 257.73(d). In addition, the Rules require a subsequent assessment be performed within 5 years of the previous assessment. See 40 C.F.R. § 257.73(f)(3).

The legacy CCR surface impoundment known as Ash Pond E (AP-E) at Georgia Power Company’s (Georgia Power) Plant Harllee Branch (Plant Branch) property is located near Beaverdam Creek, off State Route 24 (US 441) near Milledgeville and Eatonton in Putnam County, Georgia. AP-E is impounded by an earthen dam on the east side and by natural ground on the remaining sides. According to recent topographic surveys, the dam crest elevation varies with a minimum elevation of 431.4 feet (ft). In 2004, a reinforced concrete cantilevered wave wall was installed along the crest of the upstream slope to elevation (El.) 434.4 ft to provide protection from wave run-up. The maximum height of the dam is approximately 71.4 ft from the crest of the dam to the downstream toe at El. 360 ft and approximately 74.4 ft from the crest of the wave wall to the downstream toe at El. 360 ft. The upstream slope is approximately 2.5 Horizontal:1 Vertical (2.5H:1V), and the downstream slope is approximately 3H:1V.

Georgia Power submitted a CCR handling permit application to the Georgia Environmental Protection Division (GA EPD) in November 2018 in accordance with the Georgia Rules for Solid Waste Management, Chapter 391-3-4-.10 (State CCR Rule). The CCR handling permit application is currently under review by GA EPD. Georgia Power intends to close AP-E in accordance with 40 C.F.R. § 257.102(c) and corresponding State CCR Rule 391-3-4-.10(7)(b) by removing and relocating the CCR to a permitted on-site landfill and/or selling the CCR for beneficial use.

AP-E encompasses approximately 348 acres. Construction of the AP-E dam was completed in April 1982 with three distinct zones—an upstream zone, a central zone, and a downstream zone. The upstream zone included soils classified as low-plasticity silt, low-plasticity clay, and/or clayey sand. The central zone included soils classified as elastic silt and/or high-plasticity clay. The downstream zone included soils classified as silty sand. The subsurface stratigraphy beneath the AP-E dam and abutments includes, from top to bottom, saprolite, partially weathered rock, and competent bedrock.

AP-E is primarily dry, with seasonally ponded water observed near the northeast corner of the CCR surface impoundment (i.e., the North Pool) and other low areas while the remaining footprint is covered with small trees and/or brush. Wave action within the CCR surface impoundment is not a concern due to the operational characteristics of the impoundment, the concrete-filled cellular mat (i.e., Fabriform) located on the upper portion of the upstream slope, and the reinforced concrete cantilevered wave wall along the crest of the upstream slope. Additionally, AP-E is not operated in such a manner as to normally be subjected to rapid drawdown conditions.

Based on the review of available information and visual observations, the AP-E dam has been properly constructed using mechanical stabilization and compacted to a density sufficient to withstand a range of loading conditions. Inspections of the AP-E dam are conducted on a regular basis. No actual or potential structural weaknesses of the dam or abutments, nor any existing conditions that disrupt or may disrupt the operation and safety of AP-E were documented in the recent inspection reports (i.e., 2024 and 2025).

The upper portion of the upstream slope is lined with Fabriform, and the crest and downstream slope are vegetated with grass. The vegetation is properly maintained to a manageable height that allows for routine visual inspections. Documented site inspections indicate appropriate maintenance of slope vegetation.

Historically, AP-E featured a low-level discharge structure with a 30-inch (in.) diameter steel pipe. The 30-in. diameter steel pipe was decommissioned by grouting and abandoned in place in 2016. There is no evidence of deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris following the abandonment. Presently, the primary outlet structure is located in the southeastern region of the CCR surface impoundment, approximately 1,200 ft southeast of the dam. The primary outlet structure includes a vertical, concrete inlet structure with a weir. The height of the weir, and thereby, the operating water elevation within AP-E, is controlled by adding or removing 9.5-ft long stop logs from El. 416 ft to El. 430 ft. The inlet structure discharges through an underground 36-in. diameter high-density polyethylene pipe with an upstream invert elevation at El. 410 ft. The auxiliary spillway, permitted under National Pollutant Discharge Elimination System Permit Number GA0026051 as Outfall Number 05, is an approximately 85-ft wide grassed, earthen spillway at El. 430 ft and is located directly behind the primary outlet structure. There is no evidence of deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the primary outlet structure and the auxiliary spillway.

The inflow design flood is the Probable Maximum Flood (PMF) for a high hazard potential CCR surface impoundment (§ 257.82(a)(3)(i)). The PMF is determined based on the Probable Maximum Precipitation (PMP) storm event with a 6-hour duration and Antecedent Moisture Condition (AMC)-III. With a maximum allowable starting water surface elevation of El. 417.0 ft, the primary outlet structure and auxiliary spillway at AP-E can adequately manage the PMP storm event (6-hour, AMC-III) without overtopping the dam (i.e., El. 431.4 ft).

A review of current conditions indicates the downstream slope of the dam may be subject to inundation from the one percent annual chance flood (i.e., the 100-year storm event) of Lake Sinclair. The Federal Emergency Management Agency's Flood Insurance Rate Map does not include a base flood elevation line in the vicinity of the AP-E dam, but the map shows flooding along the dam. Historical operational performance and inspection reports reveal no rapid drawdown for the downstream slope of AP-E and indication of associated slope instability.

I hereby certify that the structural stability assessment was conducted in accordance with 40 C.F.R. § 257.100(f)(2)(iv) and 40 C.F.R. § 257.73(d).



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Mehmet Iscimen, P.E.

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