

**STRUCTURAL STABILITY ASSESSMENT REVISION 1**  
**40 C.F.R. Part 257.73**  
**PLANT BOWEN ASH POND 1 (AP-1)**  
**GEORGIA POWER COMPANY**

EPA's "Disposal of Coal Combustion Residuals from Electric Utilities" Final Rule (40 C.F.R. Part 257 and Part 261), §257.73(d) requires the owner or operator of an existing CCR surface impoundment to conduct initial and periodic structural stability assessments. The owner or operator must conduct an 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.

The CCR surface impoundment known as Plant Bowen AP-1 is located near Euharlee in south Bartow County, Georgia, approximately 7 miles west-southwest of the city of Cartersville on Plant Bowen property. AP-1 was formed by the construction of an engineered perimeter dike which bounds the impoundment on the east, south and west sides, and approximately two-thirds of the north dike. The remaining portions of the impoundment are contained by natural ground. The embankment foundation and abutments consist of residual silty and sandy clays of low to medium plasticity. The residual soils immediately underlying the embankment soils are considered to be stiff to very stiff. The strength of the residual soil generally decreases with depth to the top of rock, a common phenomenon in karst terrain. In certain sections of the embankment, the lower residual soils have been improved through a grouting program. However, as discussed in the Location Restriction document for Unstable Areas (§257.64), the Plant Bowen AP-1 does not meet the unstable ground requirements.

AP-1 is full except for the 30-acre Recycle Pond located in the southern portion of the pond. The northern 128.6 acres is a dry stack area with ash stacked above the normal full pond elevation. Water does not impound in this area. In the southern 128.8 acres of the pond, there are areas that do impound water, including the lined gypsum dewatering cells, the lined ash dewatering cells and the Recycle Pond. The perimeter dike's inboard slope protection for the Recycle Pond area consists of an HDPE geomembrane. The remaining inboard slope of the dike does not impound water. A perimeter drainage ditch in the southwestern portion of the pond is lined with a HDPE geomembrane. The Recycle Pond is not operated in such a manner as to normally be subjected to rapid drawdown conditions. Therefore, wave action and rapid drawdown are not concerns at this site due to the characteristics of the

impoundment. However, historic stability analyses have been conducted for such conditions, and these analyses have indicated that the slopes are stable for rapid drawdown under current slope conditions. The outboard slope of the perimeter dike is well vegetated.

The perimeter earth embankments have been properly constructed using mechanical stabilization and compacted to a density sufficient to withstand the range of loading conditions.

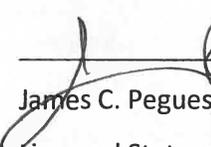
Vegetated slopes of the dike are properly maintained to a manageable height that allows for routine visual inspections.

In the northern 128.6-acre dry stack portion of the impoundment, storm water run-off from the stack area is currently collected in a HDPE lined perimeter drainage ditch and routed to the Recycle Pond. In 2016, activities were completed for a modification to the west dike to divert storm water discharges from the HDPE lined northern perimeter ditch to a detention pond constructed at the downstream toe. The modifications consisted of the construction of a lined channel from the existing ditch to discharge pipes installed in the upper section of the west dike. The piping extends down the downstream slope to the detention pond. The storm water will be routed from the detention pond to Euharlee Creek upon completion of the new low volume waste basin. In the southern portion of the Ash Pond, all run-off, including discharges from the ash dewatering cells and any discharge from the gypsum dewatering cells is routed to the Recycle Pond. From the Recycle Pond, water is pumped back to the Plant for process water or mixed with additional blowdown flows and discharged through the plant's NPDES discharge structure. There are no primary or auxiliary spillways constructed in the impoundment's perimeter dike. Manual valves located upstream of the NPDES pumps can be used to divert emergency discharges to a tributary to Euharlee Creek. The existing water management systems, except for certain sections of the perimeter toe ditch for the northern stack area, are designed, constructed, operated and maintained to adequately manage flow during and following the peak discharge from the 1,000-year flood. The toe drainage ditch collects storm water run-off from only the outboard slope below the lined perimeter drainage ditch for the northern stack. This slope has a final cover consisting of 18-inches of protective soil and 6-inches of topsoil overlying a drainage geocomposite and geosynthetic clay liner and is well vegetated. Improvements to the toe ditch capacity that are being considered to handle the 1,000-year flood include, but not be limited to: 1) additional, or larger, drainage pipes from the ditch, or 2) construction of an auxiliary spillway through the dike at multiple points.

The impoundment was originally designed with an emergency discharge structure which was located in the northern dike. This structure was abandoned by grouting in the 1980's. The only other penetrations are the NPDES intake pipes located in the southern dike at the Recycle Pond.

The downstream slopes of the embankment are not subject to inundation from adjacent water bodies.

I hereby certify that the structural stability assessment was conducted in accordance with 40 C.F.R. Part 257.73 (d).

  
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