

**PERIODIC STRUCTURAL STABILITY ASSESSMENT
PLANT BARRY ASH POND
ALABAMA POWER COMPANY**

EPA's "Disposal of Coal Combustion Residuals from Electric Utilities" Final Rule (40 C.F.R. Part 257 and Part 261) and the State of Alabama's ADEM Admin. Code Chapter 335-13-15, require the owner or operator of an existing CCR surface impoundment to conduct periodic structural stability assessments. Per §257.73(d) and ADEM Admin. Code r. 335-13-15-.04(4)(d) the owner or operator must 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. In addition, §257.73(f)(3) and ADEM Admin. Code r. 335-13-15-.04(4)(f)3. require a subsequent assessment be performed within 5 years of the previous assessment.

The CCR surface impoundment located at Alabama Power Company's Plant Barry, referred to as the Plant Barry Ash Pond, is located on Plant Barry property near Bucks, Alabama. The CCR surface impoundment is formed by an engineered perimeter embankment. The embankment foundation soils generally consist of stable organic clays overlying medium dense to dense sands. Some low inboard embankments are founded on geogrid-reinforced bottom ash.

Slope protection against surface erosion consists of grassy vegetation on both the interior and exterior dikes. Wave action is not a concern at this site due to the characteristics of the impoundment, including intermittent ash deltas which limit the size of areas of free water, as well as dewatering of the pond. The impoundment is now undergoing closure, the water surface has been lowered and there is only a limited amount of water present. The impoundment is not operated in such a manner as to normally be subjected to rapid drawdown conditions, but the grassy vegetation will provide protection against erosion in such an event.

The perimeter embankments have been properly constructed using mechanical stabilization, compacted to a density sufficient to withstand the range of loading conditions. Embankment soils generally consist of compacted sandy clays and silty and clayey sands.

Vegetated slopes of the dike are properly maintained to a manageable height to allow for periodic inspection.

Discharge from the surface impoundment is available through a four-sided concrete weir box riser structure that is connected to a nominal 48-in diameter discharge pipe. However, as pond closure activities are currently underway, the water level in the surface impoundment has been lowered and maintained below the level of the riser structure overflow. Currently, water from the pond is being routed through a temporary water treatment system that discharges through the original discharge pipe. Hydrologic and hydraulic analyses indicates that the impoundment maintains sufficient spillway and storage capacity to adequately manage flow during and following the peak discharge from the 1,000-yr storm without overtopping.

The discharge pipe passes through the south embankment of the facility. The discharge pipe was inspected via remote camera in 2015 and found to be in good condition. The pipe was subsequently lined with cementitious materials as a maintenance upgrade and based on regular visual inspection, is judged to be free of deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect its operation.

None of the downstream slopes of the embankment are subject to significant inundation from adjacent water bodies. The established vegetation serves well in protecting all downstream slopes.

I hereby certify that the structural stability assessment was conducted in accordance with 40 C.F.R. §257.73(d) and ADEM Admin. Code r. 335-13-15-.04(4)(d).

The seal is circular with a double-lined border. The outer ring contains the text "ALABAMA" at the top and "JAMES C. PEGUES, JR." at the bottom. The inner ring contains "LICENSED PROFESSIONAL ENGINEER". In the center, the license number "16516" is printed. A handwritten signature "James C. Pegues" is written across the seal. To the right of the seal, the year "2021" is handwritten.

James C. Pegues, Jr.
Licensed Professional Engineer, State of Alabama, PE No. 16516