LOCATION RESTRICTION DEMONSTRATION FAULT AREAS (40 C.F.R. 257.62 and ADEM Admin. Code r. 335-13-15-.03(3)) 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, Subpart D) 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 make a demonstration that the facility meets certain location restrictions. Per § 257.62 and ADEM Admin. Code r. 335-13-15-.03(3), the owner or operator must demonstrate that the facility is not located within 60 meters, or 200 feet, of the outermost damage zone of a fault that has had a displacement in Holocene time; otherwise, the Owner or Operator must demonstrate that an alternative setback distance of less than 60 meters, or 200 feet, will prevent damage to the structural integrity of the CCR unit.

The CCR surface impoundment located at Alabama Power Company's Plant Barry, also referred to as the Plant Barry Ash Pond, is located on Plant Barry property, near Bucks, Alabama. A review of available publications from the USGS and the Geological Survey of Alabama indicate the CCR unit is not located within 200 feet of the outermost damage zone of a fault that has had a displacement in Holocene time.

I hereby certify that the fault area location restriction demonstration was conducted in accordance with and meets the requirements of 40 C.F.R. Part 257.62 and ADEM Admin. Code r. 335-13-15-.03(3).

James C. Pegues, P.E.

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LOCATION RESTRICTION DEMONSTRATION SEISMIC IMPACT ZONE (40 C.F.R. 257.63 and ADEM Admin. Code r. 335-13-15-.03(4)) 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, Subpart D) and the State of Alabama ADEM Admin. Code Chapter 335-13-15 require the owner or operator of an existing CCR surface impoundment to make a demonstration that the facility meets certain location restrictions. Per § 257.63 and ADEM Admin. Code r. 335-13-15-.03(4), the owner or operator must demonstrate that the facility is not located within a seismic impact zone; otherwise, a demonstration must be made 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. A seismic impact zone is defined as an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 50 years.

The CCR surface impoundment located at Alabama Power Company's Plant Barry, also referred to as the Plant Barry Ash Pond, is located on Plant Barry property, near Bucks, Alabama. The Peak Ground Acceleration for the facility location, as determined using the online USGS Unified Hazard Tool, Conterminous U.S. 2014 (v4.0.x) was determined to be 0.049. Therefore, the facility is not located within a seismic impact zone.

I hereby certify that the seismic impact zone location restriction demonstration was conducted in accordance with and meets the requirements of 40 C.F.R. Part 257.63 and ADEM Admin. Code r. 335-13-15-.03(4).

James C. Pegues R.F. PROFESSIONAL Licensed State of Alabama, PE No. 1651

LOCATION RESTRICTION DEMONSTRATION UNSTABLE AREAS (40 C.F.R. 257.64 and ADEM Admin. Code r. 335-13-15-.03(5)) 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, Subpart D) 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 make a demonstration that the facility meets certain location restrictions. Per § 257.64 and ADEM Admin. Code r. 335-13-15-.03(5), the owner or operator must demonstrate that the facility is not located within an unstable area; otherwise, a demonstration must be made 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. An unstable area is defined in the CCR rule 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 can include poor foundation conditions, areas susceptible to mass movements and karst terrains.

The CCR surface impoundment located at Alabama Power Company's Plant Barry, also referred to as the Plant Barry Ash Pond, is located on Plant Barry property, near Bucks, Alabama. The CCR surface impoundment is formed by engineered perimeter embankments. The perimeter embankments have been properly constructed using mechanical stabilization, compacted to a density sufficient to withstand the range of loading conditions. Factor of safety assessments have indicated that the embankments meet the minimum factors of safety required under the rule. The foundation soils beneath the embankments and the CCR unit generally consist of soft to medium stiff to stiff clays underlain by medium dense to dense clayey sands and sands. The upper clay layer has likely experienced some consolidation throughout the years of operation of the CCR unit, but as the rate of consolidation is directly related to the steady rate of load application from the CCR placed in the unit, it has not created an unstable condition. The CCR unit is not located within karst terrain, and the site and its surrounding areas are not subject to mass movements (e.g. landslides).

I hereby certify that the unstable area location restriction demonstration was conducted in accordance with and meets the requirements of 40 C.F.R. Part 257.64 and ADEM Admin. Code r. 335-13-15-.03(5).

James C. Pegues, P.E. Licensed State of Mabbima PE Notation 16 PROFESSIONAL PEGINE

LOCATION RESTRICTION DEMONSTRATION PLACEMENT ABOVE THE UPPERMOST AQUIFER (40 C.F.R. 257.60 and ADEM Admin. Code r. 335-13-15-.03(1)) 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, Subpart D) 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 make a demonstration that the facility meets certain location restrictions. Per § 257.60 and ADEM Admin. Code r. 335-13-15-.03(1), the owner or operator must demonstrate that the facility has been constructed with a base that is located no less than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer, or must demonstrate 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 elevations (including the seasonal high water table).

The CCR surface impoundment located at Alabama Power Company's Plant Barry, also referred to as the Plant Barry Ash Pond, is located on Plant Barry property, near Bucks, Alabama. Based on a review of available groundwater data, the Ash Pond is absent the minimum 5-foot separation between the base of the CCR unit and the upper limit of the uppermost aquifer as required by 40 C.F.R. §257.60 and ADEM Admin. Code r. 335-13-15-.03(1), and therefore under current operating conditions does not meet this location restriction. Accordingly, the Ash Pond is subject to § 257.101(b)(1)(i).

James C. Pegues, P

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LOCATION RESTRICTION DEMONSTRATION FOR WETLANDS 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, Subpart D) and ADEM's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" (ADEM Admin. Code Chapter 335-13-15) require the owner or operator of an existing CCR surface impoundment to make a demonstration that the facility meets certain location restrictions. Per §257.61 and r. 335-13-15-.03(2), the owner or operator must demonstrate that the facility is not located within a wetland; otherwise, a demonstration must be made that certain criteria are met, as outlined in §257.61(a)(1) and r. 335-13-15-.03(2)(a).

Federal regulations govern wetlands under Section 404 of the Clean Water Act (CWA) as among the set of waters included in the definition of "waters of the United States." 40 C.F.R. § 122.2. Those same regulations exclude "[w]aste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act." *Id.* & note 1. State regulations reference back to the federal program under CWA § 404. ADEM Admin. Code r. 335-13-15-.03(2).

The ash pond at Alabama Power Company's Plant Barry is a treatment pond designed to meet the requirements of the CWA. Therefore, the ash pond is neither a wetland nor in a wetland.

Because the ash pond is not located in a wetland, further demonstration under § 257.61(a)(1) and r. 335-13-15-.03(2)(a) is not required. Nevertheless, it has been determined that the facility does not cause or contribute to:

- A violation of any applicable state or federal water quality standard;
- A violation of any applicable toxic effluent standard or prohibition under CWA § 307;
- Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat protected under the Endangered Species Act of 1973;
- A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

To the contrary, the purpose of the pond is to facilitate compliance with the CWA and other applicable laws and regulations.

Separate documentation has demonstrated regular maintenance, inspection, and dust control practices, as well as perimeter embankments that are stable and meet all required minimum factors of safety outlined in the federal and state CCR rules. The ash pond has been designed to account for the volume of CCR and water contained in the facility. Therefore, there is no basis to find that the ash pond would cause or contribute to significant degradation of wetlands, including through erosion, stability, and migration potential of native wetland soils, muds and deposits or dredged and fill materials used to support the CCR unit; through the volume and chemical nature of the coal combustion residuals stored in the facility; through impacts to fish, wildlife or other aquatic resources or their habitat; or any other discernible factors.

I hereby certify that the wetlands location restriction demonstration was conducted in accordance with and meets the requirements of 40 C.F.R. § 257.61. and ADEM Admin. Code r. 335-13-15-.03(2).

Licensed State of Alabama