


**LOCATION RESTRICTION DEMONSTRATION
FAULT AREAS (40 C.F.R. 257.62 and ADEM Admin. Code r. 335-13-15-.03(3))
PLANT GASTON GYPSUM STORAGE FACILITY
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 Gaston also referred to as the Plant Gaston Gypsum Storage Facility, is located on Plant Gaston property, near Wilsonville, 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 40 C.F.R. Part 257.62 and ADEM Admin. Code r. 335-13-15-.03(3).

James C. Pegues, P.E.
Licensed State of Alabama, PE No. 16516

A circular professional seal for James C. Pegues, Jr., a Professional Engineer in the State of Alabama. The seal features the text "ALABAMA LICENSE" at the top, "16516" in the center, "PROFESSIONAL ENGINEER" below the license number, and "JAMES C. PEGUES, JR." at the bottom. A star is positioned to the left of the license number. A signature is written over the seal.

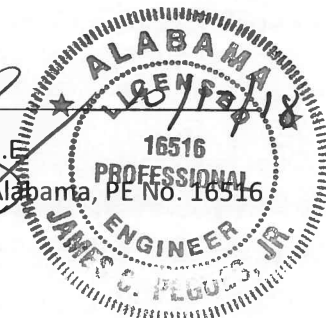
**LOCATION RESTRICTION DEMONSTRATION
SEISMIC IMPACT ZONE (40 C.F.R. 257.63 and ADEM Admin. Code r. 335-13-15-.03(4))
PLANT GASTON GYPSUM STORAGE FACILITY
ALABAMA POWER COMPANY**

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 Gaston also referred to as the Plant Gaston Gypsum Storage Facility is located on Plant Gaston property, near Wilsonville, 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 0.150, indicating that the impoundment is in a seismic impact zone. The structural components of the impoundment were analyzed using site-specific seismic analysis to determine anticipated loading and deformation. Computed strains on the various structural components are within acceptable strain tolerances for the materials. This analysis therefore indicates that the structural components are designed to resist the maximum horizontal acceleration in lithified earth material at the site.

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. §257.63 and ADEM Admin. Code r. 335-13-15-.03(4).

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The seal is circular with a double-line border. The outer ring contains the text "ALABAMA" at the top and "LICENSED" at the bottom, separated by two stars. The inner ring contains "PROFESSIONAL ENGINEER" and "JAMES C. PEGUES, JR." The center of the seal contains the license number "16516".

LOCATION RESTRICTION DEMONSTRATION
UNSTABLE AREAS (40 C.F.R. 257.64 and ADEM Admin. Code r. 335-13-15-.03(5))
PLANT GASTON GYPSUM STORAGE FACILITY
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 regulations 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 Gaston, also referred to as the Plant Gaston Gypsum Storage Facility, is located on Plant Gaston property, near Wilsonville, Alabama. The lined CCR surface impoundment is formed by an engineered perimeter embankment. 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 foundations beneath the embankments and the CCR unit generally consist of stable and competent medium stiff to stiff clays and occasional medium dense clayey sands. The site and its surrounding areas are not subject to mass movements (e.g. landslides).

The CCR unit is located within an area known for its karst geology. During siting and design, a series of borings were drilled within the footprint of the site and no active karst features were noted at the boring locations. During construction of the facility, the subgrade was thoroughly assessed through proofrolling and other observations. No active sinkholes or depressions were found. Any area indicative of potential future sinkhole formation were excavated and treated through the construction of inverted

filters, a common treatment for such features. No indications of dropouts or sinkhole activity has been noted in or around the CCR unit since construction began in 2008.

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


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**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 GASTON GYPSUM STORAGE FACILITY
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 r. 335-13-15-.03 requires 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 lined CCR surface impoundment located at Alabama Power Company's Plant Gaston also referred to as the Plant Gaston Gypsum Storage Facility is located on Plant Gaston property, near Wilsonville, Alabama. At the time of siting and design of the facility, a series of borings were drilled and piezometers installed to establish normal and seasonal high groundwater levels. Groundwater level readings were taken over a period of several months at the site.

At the time of final design, the base of the facility was established so that it was greater than 5 feet above the measured seasonal high groundwater level, and the CCR unit was constructed in accordance with the design elevations. The highest measured groundwater level on the north end of the facility was approximately EL 402 feet, and the lowest base elevation of the disposal cell is EL 413 feet. Similarly, on the south end of the facility, the highest measured groundwater level was EL 397 feet, with a base elevation of the cell being EL 410 feet.

I hereby certify that the uppermost aquifer separation location restriction demonstration was conducted in accordance with 40 C.F.R. Part 257.60 and ADEM Admin. Code r. 335-13-15-.03(1).

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LOCATION RESTRICTION DEMONSTRATION
WETLANDS (40 C.F.R. 257.61 and ADEM Admin. Code r. 335-13-15-.03(2))
PLANT GASTON GYPSUM STORAGE FACILITY
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 lined CCR surface impoundment located at Alabama Power Company's Plant Gaston also referred to as the Plant Gaston Gypsum Storage Facility is located on Plant Gaston property, near Wilsonville, Alabama. At the time of design of the facility, wetlands determinations were made at the site and on surrounding properties. Wetlands were not disturbed or impacted during the construction of the Gypsum Storage Facility.

Construction and operation of the facility did not and does not cause or contribute to:

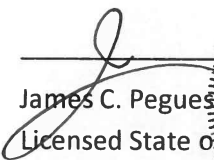
- A violation of any applicable state or federal water quality standard;
- A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
- Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification 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.


Appropriate erosion and sedimentation controls were utilized during the construction of the facility. Therefore, there was no significant degradation of wetlands due to erosion, stability and migration of native wetland soils or fill materials used to support the Gypsum Storage Facility.

The volume and chemical nature of the gypsum stored in the facility has not caused or contributed to significant degradation of wetlands.

Previous analyses have indicated that the lined facility was constructed with perimeter embankments that are stable and meet all required minimum factors of safety outlined in the CCR rule. Therefore, catastrophic release of CCR from the unit has not occurred during its years of operation and is not expected, and therefore no impacts to fish, wildlife or other aquatic resources or their habitat have occurred or are expected.

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


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The seal is circular with a double-line border. The outer ring contains the text 'ALABAMA' at the top and 'JAMES C. PEGUES, JR.' at the bottom. The inner ring contains 'LICENSED' at the top and 'ENGINEER' at the bottom. In the center, the text reads '16516 PROFESSIONAL'. A date stamp 'OCT 27 2018' is visible in the center of the seal.