

## **PERIODIC STRUCTURAL STABILITY ASSESSMENT**

### **PLANT GASTON GYPSUM 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 Gaston also referred to as the Plant Gaston Gypsum Pond is located on Plant Gaston property, northeast of Wilsonville, Alabama. The CCR surface impoundment is formed by an engineered perimeter embankment. The foundations consist primarily of stable stiff clay residuum, though thin layers of alluvial soils are intermittently present as silts and silty clayey sand.

Slope protection against surface erosion consists of established vegetation (grass) and sections of rip rap stone. Also, the impoundment is lined with HDPE, so interior slopes are partially protected by the liner. Wave action is not a concern at this site due to the small amount of water present in the pond. The pond is not operated in such a manner as to normally be subjected to rapid drawdown conditions, due to both the design and the lack of ponded water in the impoundment. However, the presence of the HDPE liner on the interior slopes provides against erosion protection in the event of rapid drawdown.

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

Vegetated slopes of the dike are properly maintained.

Water flows from the gypsum pond to the sedimentation/return water pond to the south of the gypsum pond. There is not a primary spillway in the sedimentation pond, as the effluent water is pumped back to the plant. A concrete auxiliary spillway is present, and is designed, constructed, operated and maintained to adequately manage flow during and following the peak discharge from the 1000-yr storm. The storage capacity and drainage mechanisms from the gypsum pond to the sedimentation pond are adequate to safely manage precipitation from the 1,000-year storm event within the gypsum storage area.

The CCR unit is designed to pump excess water back to the plant. This is done via a floating pump in the clear pool and lines that are laid in the cover material over the liner on the west dike – they do not go through the embankment or penetrate the liner.

The downstream slopes of the embankment on the south side of the impoundment are subject to potential inundation during flood conditions of Yellowleaf Creek and are protected by rip rap.

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).

  
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