

Coal Combustion Residuals Rule Ash Basin Dewatering Engineering



AECOM's provided comprehensive CCR dewatering plans that were portable, cost-effective, and met federal requirements and deadlines.

Client

Confidential Electric Generation Client

Location

North Carolina, USA

Contract Value

USD 850K

Years

2014—2016

More Information

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Project Overview

AECOM provided engineering support for the development of dewatering work plans for 14 coal ash impoundments at eight power plant sites. The work plans include drawings and performance specifications for pumping systems and water treatment systems for the removal of the ponded water within the impoundments. AECOM also continues to provide follow-on engineering support during the implementation of the project, which included site visits by field engineers, permitting support, traffic loading evaluation, and winterization and piping structural support assessment.

Client Benefits

- The AECOM Dewatering Team utilized local resources to provide the most cost effective solutions.
- The team's mobile pump systems and treatment systems design and specification allowed for portability and remobilization for use at other sites, allowing for ease of use and cost savings.

Work Performed

AECOM conducted preliminary studies to develop planning for pumping and treatment of the surface water from within the ash basins at these eight power plant sites. The team evaluated existing geotechnical data and analyses, including piezometric levels in the ash and laboratory testing of the ash materials.

The team then collected surface and entrained water samples from the ash basins for water quality analysis. The testing results were used to evaluate NPDES permit requirements, performance, and potential issues for pumping of surface water.



A design of a dewatering plan and system for removal of surface water was developed following the water quality analysis. The design was made to accommodate stormwater and stormwater controls. In addition, a technical memorandum was provided to the client summarizing the dewatering level, expected dewatering flow rates, and dewatering design basis.

Basis of Design and bid documents were prepared for wastewater treatment systems for each site. The water treatment systems were based on a mobile treatment system configuration, allowing for modularity, portability, and potential remobilization for use at other sites. Site-specific performance-based procurement specifications were prepared to address unique water treatment requirements at each site. These specifications included the scope of work, project background, bidding information, bidder submittal requirements, warranty, system design criteria and requirements, product performance and design requirements, and execution. Drawings were also included in the performance specifications, including a treatment system flow diagram and site staging plan.

AECOM developed cost estimates for dewatering and water treatment for each site. Project schedules were also developed for each site. A work plan was provided for each of the eight sites, summarizing the process for dewatering surface water within the ash basins. The work plans also provided an overview of the water treatment systems planned for use for dewatering.

AECOM provided support during implementation of the dewatering plans at two of the eight plant sites, which included contractor submittal review, flood-plain use permitting, request for information responses, site visits by an AECOM field engineer, and development of record drawings.