

Low-permeability liner solution for coal-ash by-products

As part of its emissions control at the Kingston Fossil Plant, flue gas desulfurization is performed, which creates as a by-product a synthetic version of the mineral gypsum and must be stored in a gypsum pond or taken to a landfill.



PROJECT DETAILS

TVA Kingston Gypsum Pond Expansion

LOCATION

Harriman, Tennessee

PRODUCTS USED

BENTOMAT® 600CL

BENTOMAT® CL

EASY ROLLER™

Deployment System

The Kingston Fossil Plant is one of eleven coal-fired fossil plants owned by Tennessee Valley Authority (TVA), the nation's largest public power company.

CHALLENGE:

The owner of the site, Tennessee Valley Authority (TVA) called for an expansion at the Kingston Fossil Plant that consisted of a 43-acre gypsum pond. Only 30 days were allotted to both install the pond's liner and prepare it for operation. To make matters even more challenging, the site received a large amount of rain.

SOLUTION:

CETCO geosynthetic clay liners were chosen for the site because the on-site clay did not meet the permeability set in the design standards. Furthermore, the composite laminate geosynthetic clay liners offered the low permeability of a geomembrane and self-healing characteristics of a traditional GCL to protect against puncture. BENTOMAT 600CL was used on the relatively flat areas of the pond, while BENTOMAT CL was used on the steeper, internal slopes, which exceeded 10H:1V.

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The engineer on the project and CETCO staff concurred that the rain could cause water to get under the liner and damage the subgrade if additional measures were not taken. To prevent this, a key-in trench and additional materials were used.

RESULT:

With the help of efficient manufacturing at CETCO and the EASY ROLLER™ deployment system, installers were able to quickly, effectively and safely install the 2 million square feet of material within the set deadline. The project was completed on time and the customer was pleased with the end result.

North America: 847.851.1800 | 800.527.9948 | www.cetco.com

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