PERIMETER WALL STABILIZATION
KINGSTON ASH RECOVERY PROJECT
Kingston, Tennessee

Client/Owner: Tennessee Valley Authority
Geo-Con

Engineer: Stantec Consulting

Significant Project Features:

- Pre-Drilling with 6-inch and 12-inch Air Rotary methods
- Jet Grouting
- Stabilization of Cement-BentonitePerimeter Wall

Background and Objectives

Armstrong Drilling was contracted by Geo-Con to complete drilling and jet groutingservices at the Kingston Ash Recovery Project in Kingston, Tennessee as a means to further stabilize the recently installed Cement-Bentonite Perimeter Wall.

Description of Work

A test program was completed to demonstrate and evaluate the column spacing, injection pressure, lift rate, rotation rate and overall means and methods of injection grouting. The test program included flushing the grout from a fresh jet grout location and pumping the water out to visually confirm the geometry of the column.

Each location is pre-drilled using 6-inch and 12-inch air rotary methods. Thecompleted boring is then tested for verticality using a gyro-scope-based down-hole survey instrument to ensurethateach pre-drill location is within the established tolerance of 1% of vertical.

Jet Grouting is accomplished using aCassagrande C-7 and a HD-112 track-mounted rig. A Portland cement and bentonite grout is prepared in a 5-cubic yard batch plant and injected at high pressure, from the bottom up, using a controlled lift and rotation rate.

The grout is designed to attain a minimum of 315psi at 28-days of cure.

Project Challenges

Key project challenges include:

- Meeting stringent verticality requirements
- Coordinating with TVA's ongoing on-site operations
- Coordinating with the Perimeter Wall installation

Project Start: March 2011
Project Completion: In Progress