

Tennessee Valley Authority  
Regulatory Submittal for Kingston Fossil Plant

Documents submitted:

NTC – Test Plan for the Perimeter Stabilization Field Demonstration in Support of Dredge Cell Closure

Document no. EPA-AO-034

Date Submitted:

3/4/2011

Submitted to whom

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Document No. EPA-AO-034

**Kingston Ash Recovery Project  
Non-Time-Critical Removal Action**

**Test Plan for the Perimeter Stabilization Field Demonstration  
in Support of Dredge Cell Closure**

**Prepared by:  
Jacobs**

**for the Tennessee Valley Authority**

<b>Revision</b>	<b>Description</b>	<b>Date</b>
0	Test Plan Issued for TVA Review	February 25, 2011
	Test Plan Re-issued, TVA Comments Incorporated	March 1, 2011
1	Changed southeast shear wall centerline from station 163+00 to 164+00; changed wall width from 3 to 4 ft wide and lateral spacing from 14.1 to 20.4 ft; changed "...minimize fugitive dusts" to "eliminate visible dust emissions" in the section 4. Safety.	March 3, 2011
2	Moved start station from 163+00 to 164+00 on the Demonstration Plan	March 3, 2011

## 1. BACKGROUND AND OBJECTIVES

This plan describes the construction, testing, and analysis for the perimeter stabilization demonstration at the Kingston Ash Recovery Project site.

Cement bentonite slurry is to be utilized in the construction of the perimeter containment structure for the former dredge cell at the Kingston Fossil Plant. This process involves slurry wall construction at depths up to approximately 60 feet to form continuous cement bentonite walls. The demonstration project is intended to provide information necessary to refine the mix design and constructability parameters, and to demonstrate the constructability of cement bentonite walls in accordance with conceptual design and layout requirements.

## 2. PLAN

This demonstration consists of constructing a portion of the inboard and outboard walls with three accompanying shear walls. They are to be constructed at a minimum of 4 feet in width to a depth of approximately 60 feet below the surface. The walls will be constructed 3 feet below the top of weathered bedrock, as determined by soil cuttings from the trench excavation. Inboard and outboard walls will each be a linear distance of approximately 50 feet with shear walls each being a linear distance of approximately 100 feet. A median compressive strength of 200 pounds per square inch is required in accordance with the draft technical specifications. Additional walls could be constructed if required to accomplish the objectives. TVA Civil Projects will prepare the area for the test program. Wet grab and core samples will be taken to test for unconfined compressive strength, tensile strength, and hydraulic conductivity, per the draft technical specifications. Cores will be drilled deep enough to demonstrate that there is no unstabilized material between the wall and rock. The test results will be summarized in a report of the demonstration. Upon meeting the design specifications, the demonstration section will be accepted as part of the perimeter stabilization structure.

Drawings of the demonstration location, wall dimensions, and draft specifications are attached to this plan for reference. The centerline of the southeast shear wall will be at station 164+00.

## 3. QUALITY CONTROL METHODS

Stantec Consulting Services, Inc. is the "Engineer of Record" and will serve as Quality Control Manager. The Stabilization Contractor will prepare a Quality Control Plan for conducting quality control testing to demonstrate conformance with the draft technical specifications. Construction will be in accordance with the draft technical specifications for perimeter stabilization. Handling and disposition of samples for testing and analysis will be in accordance with site policy.

## 4. SAFETY

The test program will be conducted in accord with the *Site Wide Safety and Health Plan for the Kingston Fossil Plant Ash Release Response, Revision 5*, Document No. EPA-AO-003. The job hazard analysis, step-by-step analysis, and pre-job briefing for this specific activity will compliment the Site-Wide Safety and Health Program. The work will take place within the exclusion zone thereby requiring personnel to have the appropriate HAZWOPER training.

Cement silos and batch plants have the potential to generate dust. Areas around the operating equipment will be maintained to eliminate visible dust emissions by using water trucks and ground cover material.

All personnel, equipment, and vehicles shall be decontaminated by washing with water and visually inspected prior to leaving the site.

## **5. WASTE**

No waste is expected to be generated by the demonstration project. Any spoils generated from the construction of the wall will be placed within the dredge cell in accordance with U.S. Environmental Protection Agency-approved ash stacking technical specifications. Laboratory sample residuals are to be returned to the Kingston Ash Recovery Project site for disposal.

## **6. TRANSPORT**

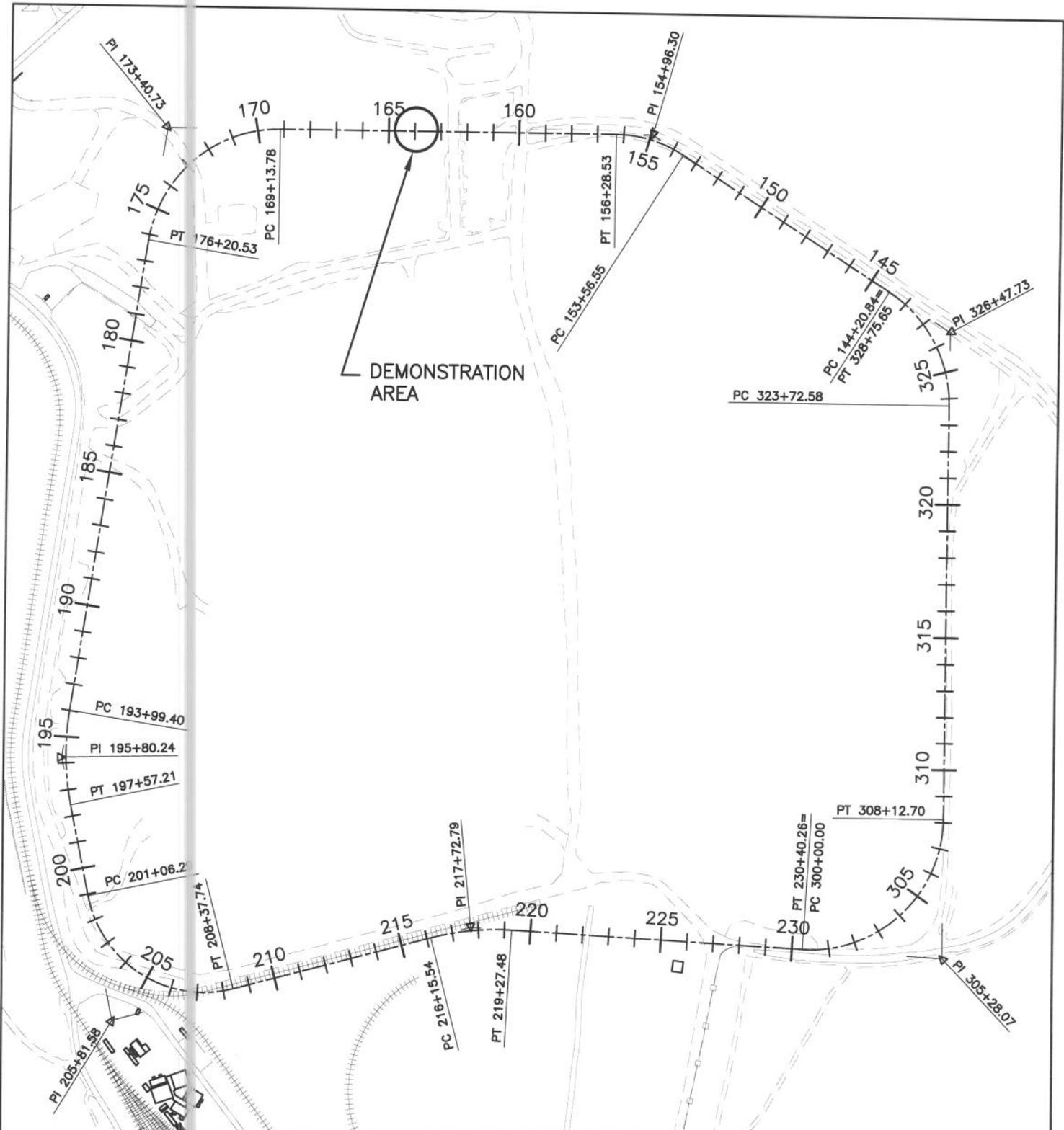
The contractor will arrange for the shipment of the batch plant and miscellaneous support equipment. This equipment will be setup in the old Material Access Point area. The contractor will be responsible for all permits, fees, etc. required to transport the equipment to and from the site. Sample shipments to and from the site will follow TVA-KIF-SOP-07 *Sample Labeling, Packing, and Shipping*.

## **7. PROJECT MANAGEMENT**

The test program will be overseen by TVA Civil Projects and supported by Jacobs Construction Managers. It is estimated to require approximately 5 weeks to complete. Preliminary work is to begin early March 2011 and be completed in mid-April 2011. Testing and analysis, and reporting will be completed as expeditiously as practicable. Interim results will be distributed as they become available.

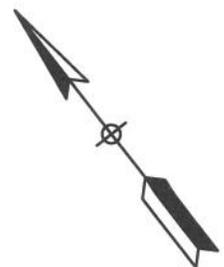
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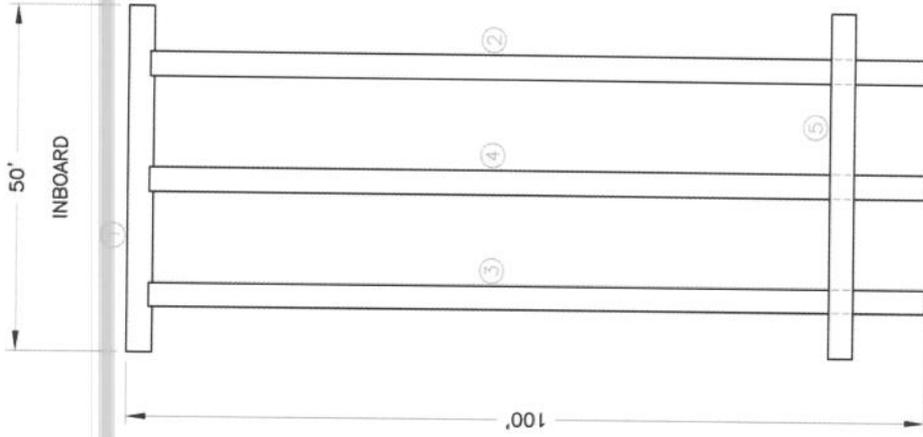
## FIGURES



# DEMONSTRATION PLAN

SCALE: 1"=500'





**LEGEND**

② ORDER OF INSTALLATION

**NOTES:**

- 4 FEET WIDE WALLS
- 20.4 FEET LATERAL SPACING
- 100 FEET WIDTH
- 400 FEET TOTAL WALL LENGTH

DRAWING NOT TO SCALE

THE ORIGINAL VERSION OF THIS DRAWING IS IN THE POSSESSION OF THE PROJECT ENGINEER. ANY REVISIONS WILL BE ACCURATELY REFLECTED IN THIS DRAWING. CERTAIN INFORMATION



FIGURE 6  
DEMONSTRATION SECTION LAYOUT

PERIMETER STABILIZATION  
KINGSTON ASH RECOVERY PROJECT  
HARRIMAN, ROANE COUNTY, TENNESSEE  
GEO-CON PROJECT P10-063

Drawn By: Z 022211

Checked:

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P10-063-B04