

**Tennessee Valley Authority  
Regulatory Submittal for Kingston Fossil Plant**

**Documents submitted:**

**NTC – Work Plan for Ash Stabilization Demonstration in Support of Dredge Cell Ash Stacking**

**Document no. RAWP-089**

**Date Submitted:**

**3/4/2011**

**Submitted to whom**

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Document No. RAWP-089

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

**Work Plan for Ash Stabilization Demonstration in Support of  
Dredge Cell Ash Stacking**

**Prepared by:  
Jacobs**

**for the Tennessee Valley Authority**

<b>Revision</b>	<b>Description</b>	<b>Date</b>
0	Work Plan for TVA Review	February 28, 2011
1	Work Plan Re-issued, TVA Comments Incorporated	March 2, 2011

## 1 INTRODUCTION AND PURPOSE

This Work Plan describes the activities to demonstrate the stabilizing of ash by in-situ mixing of a reagent into saturated or near saturated ash. The stabilized ash shall have a moisture content of approximately 22% and be of a consistency to achieve a 90% Proctor density when placed in the former Dredge Cell. These activities include mobilization of contractors, preparation of test areas in the North and/or Middle Embayment, stabilizing of ash materials, harvesting and placing of the stabilized ash, and testing of the ash and associated materials. The demonstration tests are to take place in the North and/or Middle Embayment. The purpose of this demonstration is to evaluate alternatives to the currently approved use of lime for stabilization.

## 2 DESIGN AND CONSTRUCTION COMPONENTS

The demonstration test consists of stabilizing a total of 12,000± cubic yards of saturated ash using three different mixing techniques and different reagents. Three contractors, WRScompass, RECON, Inc. and Hayward Baker, will stabilize about 4,000 cubic yards each. Each contractor will stabilize an area of about 100 feet by 150 feet with depths from 6 to 15 feet (between approximate elevation 745 and 730). Moisture analysis of the ash, before and after stabilization, plus Proctor density and compressive strength of the stabilized material will be performed.

The first contractor, WRScompass, will stabilize the ash by mixing Portland cement (5% by weight) with the ash utilizing excavators in early to mid March 2011. They will be followed by RECON, Inc. utilizing a proprietary mixture, and excavators in late March 2011. Hayward Baker will follow in mid April 2011 utilizing Portland cement (<5% by weight) pneumatically conveyed to the subsurface thru the shaft of vertical auger mixers.

WRScompass will control dust by utilizing an ashing filter during the pneumatic transport of cement from the tanker truck to the treatment cell. In addition, the unloading/mixing operation will be conducted only during low or no wind situations. RECON will utilize similar techniques when placing their reagent. Their operations will be less subject to windy conditions due to the significantly larger particle size of the reagent. Hayward Baker has the least potential to create dust because the cement is conveyed pneumatically to the machine and then down the shaft to the mixers below the surface.

TVA Civil Projects will prepare the test areas, harvest the stabilized ash, and place it in the former Dredge Cell. In addition, Civil Projects will provide general support throughout the testing, (i.e., access ways to the test sites, dust control, water, etc.). Field activities by the contractor will require approximately 5 days at 10 hours per day.

## 3 CONSTRUCTION AND QUALITY CONTROL

Testing and construction activities in the North and/or Middle Embayment will be per the existing practices and specifications in the North Embayment. The stabilization of ash will be per the approved test plans/specifications of the participating contractors.

Bench scale testing by the contractors has shown that the moisture in the saturated or near saturated ash will be reduced significantly and the compressive strength will be increased with the addition of the proposed reagents. It follows that the ash should be of a consistency so that it can be transported directly to the former Dredge Cell and stacked, achieving a 90% Proctor density and have a moisture content near optimum. Sufficient measurements of moisture content of the pretreated and treated ash as well as Proctor densities will be made to determine if the process will produce a material suitable for stacking.

Further, monolith testing for leachate values will be performed on samples taken from the stabilized material stacked in the Dredge Cell.

#### **4 SAFETY AND HEALTH**

All activities 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 analysis, and pre job briefing for these specific activities will compliment the Site Wide Safety and Health Plan. The work will be within the exclusion zone thereby requiring personnel have the appropriate HAZWOPER training. All equipment and vehicles will be decontaminated by washing with water and visually inspected prior to leaving the site. Material handling processes and operating equipment will be potential dust generators. Areas around the operating equipment will be maintained to minimize fugitive dust by using water trucks and ground cover material. Due to the location of the test, the North and/or Middle Embayment at elevation 745 and below, the potential for dust generation is low. The typical approach to stabilization in areas such as the North Embayment, is to "stabilize as you go". The contractor will build a working surface of stabilized material, then move on to the treated surface, stabilize ahead, and so forth.

#### **5 WASTE MANAGEMENT**

The activities associated with this Work Plan generally produce no waste. The product of this process is stabilized ash, drier ash, and with greater strength. Miscellaneous debris generated by delivery of materials, staging of equipment and general activities by personnel will be contained, collected and disposed by the overall site maintenance program.

#### **6 PROJECT MANAGEMENT**

Overall construction management will be by Steve Cherry, Deputy Manager, TVA Civil Projects. Project support will be by Randy Denton, Jacobs Engineering and Jim Sells, Jacobs Construction Manager.