

**FINAL FINDING OF NO SIGNIFICANT IMPACT**  
**TENNESSEE VALLEY AUTHORITY**  
KINGSTON FOSSIL PLANT DEWATERING PROJECT  
ROANE COUNTY, TENNESSEE

The Tennessee Valley Authority (TVA) is proposing to construct a dewatering plant at its Kingston Fossil Plant (KIF) in Roane County, Tennessee. In July 2009, the TVA Board of Directors passed a resolution for TVA to review its practices for storing coal combustion residuals (CCRs) at its generating facilities, including KIF. This review resulted in a recommendation to convert the wet bottom ash management system at KIF to a dry storage system. To enable this wet-to-dry storage conversion, TVA proposes to install a dewatering facility for bottom ash at KIF. Further, the dewatering facility would foster TVA's compliance with present and future regulatory requirements related to CCR production and management, including the requirements of an Order issued by the Commissioner of the Tennessee Department of Environment and Conservation on August 7, 2015, EPA's CCR rule and EPA's Effluent Limitations Guidelines (ELG) rule. TVA has prepared an environmental assessment (EA) for this proposed action, which is incorporated by reference.

**Alternatives**

TVA evaluated three primary alternatives in the EA: Alternative A – No Action; Alternative B – Construction/Operation of the Dewatering Facility without Recirculation; and Alternative C – Construction/Operation of the Dewatering Facility with a Recirculating Ash Sluice Stream.

**Alternative A – No Action**

Under the No Action Alternative, TVA would not construct the dewatering facility. TVA would continue to dispose of wet bottom ash in on-site impoundments. The existing associated impoundments would continue to be operated as currently permitted. Wet ash is currently discharged to four dewatering bins located in a trench where the majority of the ash settles out while the waste water flows continue on to the stilling impoundment. The ash is dredged from the bins by track hoe and placed in mounds in a staging area, referred to as the "ball field." TVA began disposing of ash from the ball field area in an existing on-site landfill, following the September 29, 2015, TDEC approval of a permit modification that allows the existing on-site landfill to receive this bottom ash. Alternatively, TVA may remove the ash from the ball field area to an appropriate off-site landfill. The environmental effects of continuing to store wet ash on the ball field and of transporting ash to an off-site facility have been previously addressed (TVA 2006, 2010).

Under the No Action Alternative, TVA would continue to operate the existing truck wash station, parking lots, and equipment storage in the 18-acre area proposed for the dewatering system. This alternative does not meet the purpose of achieving the overall TVA goal of converting the form of storage of the bottom ash at KIF from wet to dry. Nonetheless, as the No Action Alternative, this option is discussed in the EA to provide a benchmark against which to compare the impacts of the action alternative.

**Alternative B – Construction/Operation of a Dewatering Facility**

Under Alternative B, TVA would construct a bottom ash mechanical dewatering facility at KIF to create dry CCRs for disposal in an approved on-site or off-site landfill. To meet requirements

under EPA's CCR and ELG regulations that will become applicable to KIF in the future, the current ash sluice bins would be by-passed and the stilling impoundment would eventually be closed. The dewatering facility would facilitate compliance with these requirements.

Under Alternative B, the discharge from this dewatering facility would be routed to an approved impoundment and then discharged through the existing NPDES Outfall 001. The bottom ash dewatering equipment would be located north of the powerhouse. A new drainage line running from the dewatering facility to the existing municipal infrastructure would be constructed, allowing a tie-in for sewage and wastewater from the new facility to KIF's existing treatment system.

Trucks would be used to haul dry bottom ash from the dewatering facility to the approved on-site or off-site landfill at a rate of 8,000 to 57,000 tons per year or approximately 1 to 10 truckloads per day.

Construction activities would require removing existing surface material to approximately three inches below grade; grading the 18-acre area; constructing the turn-around road, dewatering facility, and associated utilities; and removing the truck wash facility. Construction is expected to take place over a 12- to 15-month period.

Sluice lines for the bottom ash would be routed to the proposed dewatering facility. Bottom ash would be dewatered using specialized equipment that would operate continuously while KIF is generating. During normal operations, process water and contact water (i.e., additional water from rainfall and surface runoff) would be processed through the bottom ash dewatering system. However, if or when the dewatering system storage or throughput capacity is exceeded, process and contact water streams could be discharged to a KIF NPDES-permitted outfall.

### **Alternative C – Dewatering System with a Recirculated Bottom Ash Sluice Stream**

Under Alternative C, TVA would construct the same dewatering facility as described under Alternative B in the first phase, but, in a subsequent phase later, would add a recirculation system. In other words, the effluent sluice stream leaving the dewatering facility would not leave the KIF site out of the existing NPDES Outfall 001 (as described above in Alternative B). Instead, the effluent sluice stream leaving the dewatering facility would be recycled back into the KIF powerhouse for future sluicing operations. This recirculated sluice stream would require a blow-down stream, make-up stream and outage waste stream.

The recirculation system would include additional recirculating pumps, sluice line, additional power from the electrical room and a water containment facility. The containment facility would hold previously dewatered sluice water for recirculation in the dewatering process and would make it readily available, when needed, for sluicing operations. Water recovered in the bottom ash dewatering process would recirculate to the intake side of the bottom ash sluice pumps at the powerhouse. The proposed dewatering and recirculation systems would require approximately 250 to 300 gpm of make-up water to replace water evaporated or otherwise lost from the recirculation system. Make-up water would be obtained from plant process water (i.e., "raw" water or, possibly, excess rainwater following heavy rainfall events).

The de-watered ash would be handled in the same manner as described under Alternative B.

In addition to the two action alternatives, TVA considered:

- Isolation and separate processing of bottom ash and pyrite streams

- Use of hydrobins
- Dry boiler bottom conversion

These alternatives were evaluated but dismissed from detailed analysis due to substantially greater costs, the need for additional construction of processing equipment, and/or the need for additional management activities that would likely increase effects on the environment. There are substantial engineering problems associated with both hydrobins and dry boiler bottom conversion, which make those technically infeasible solutions at KIF.

### **Impacts Assessment**

Based on the analyses in the EA, TVA concludes that the implementation of Alternative C would have no impact on threatened and endangered species, natural areas, parks, recreation, cultural and historical resources, solid or hazardous waste, land use and prime farmland, wetlands, and visual resources or floodplains. There would be no significant impact to climate change, vegetation, wildlife and aquatic life. There would be minor and mostly temporary impacts to air quality, transportation, noise and safety during construction, with very minor impacts to these resources during operation. There would be potential positive impacts on surface water and groundwater as the use of surface impoundments and discharge of sluice water to Watts Bar Reservoir would no longer be required. Water would be recycled and reused. Potential impacts to groundwater would be reduced as potential contact with groundwater would be reduced by the elimination of impoundments. The proposed action will result in positive impacts to the local economy with the short-term employment of workers for the construction and long-term new positions created by operating the new facility.

### **Public and Intergovernmental Review**

A Draft EA was released for comment on April 2, 2015. The comment period closed on May 5, 2015. The Draft EA was transmitted to state, federal, and local agencies and federally recognized tribes. Extensive comments were received on the Draft EA. Other events occurred in the meantime, including the finalization of the landfill permit at KIF, release of Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category (ELGs) and the issuance of the Commissioners Order. In response to these comments and the occurrence of these intervening events, TVA prepared a Revised Draft EA that was released for comment on January 11, 2016. The comment period closed on February 3, 2016. Like the Draft EA, the Revised Draft EA was transmitted to state, federal, and local agencies and federally recognized tribes.

TVA has considered all of the substantive comments received on the Draft EA and Revised Draft EA and has responded to them in the Final EA as appropriate. Pursuant to Section 106 of the National Historic Preservation Act, TVA consulted with the Tennessee SHPO, which concurred that the proposed action will not adversely affect any property that is eligible for listing to the NRHP. Appropriate recognized Native American tribes were consulted concerning the proposed undertaking, and TVA received no objection from any of the tribes. Further, the proposed action is consistent with EO 11998 (Floodplains Management) and EO 11990 (Protection of Wetlands).


**Mitigation**

TVA would implement operating permit requirements and routine best management practices listed in the EA for avoiding or reducing minor adverse environmental effects from the construction of the de-watering system and subsequent addition of the recirculation system, as described under Alternative C. The following mitigation measures and BMPs have been identified to reduce potential environmental effects of implementing Alternative C:

- Best practices and limitations prescribed in the Storm Water and Air Permit for Construction Activities;
- Erosion controls and BMPs for storm water impacts;
- Dust control during construction;
- Covering of the byproduct during transport and the use of dust control during dewatering facility operation;
- Use of wastewater treatment additives, as needed, to help with pH control, settling solids, and reduction of metals during dewatering operations.

**Conclusion and Findings**

Based on the findings in the EA, TVA concludes that implementing Alternative C – Construction/Operation of a Dewatering Facility with a Recirculation Ash Sluice Stream would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

  
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Amy B. Henry, Manager  
NEPA Program & Valley Projects  
Environmental  
Tennessee Valley Authority

  
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Date Signed