Action Memorandum for Non-Time-Critical Phase
TVA Kingston Fossil Fuel Plant Release
Frequently Asked Questions

U.S. Environmental Protection Agency (EPA) developed this frequently asked question (FAQ) fact sheet to provide the community with a brief overview on the selected cleanup plan for the Tennessee Valley Authority (TVA) Kingston site. For more detailed answers and information, please see the Action Memorandum and Responsiveness Summary compiled by TVA and approved by EPA in consultation with the Tennessee Department of Environment and Conservation (TDEC).

Alternative Specifics

1. Why was this alternative selected over the others?

The plan was chosen above the others because of its protectiveness, ease of implementation and cost effectiveness. Specific actions to protect public health and the environment that will be implemented as part of the cleanup plan include: installing a new dike, able to withstand a local 6.0 magnitude earthquake, to keep ash from entering the embayment in the future; new drainage to control runoff; covering the disposal area with three feet of clay and soil cover; planting vegetation to prevent erosion; and closing the disposal area. Air and water sampling will be ongoing to ensure that the ash is not adversely affecting public health and safety.

The selected plan eliminates potential impacts associated with off-site disposal, including any possible risks associated with shipping ash over public roads or by rail. It will also minimize heavy truck traffic in the Roane County community, reduce wear and tear on area roads, and be less disruptive to local traffic and commerce. On-site disposal also addresses community concerns about proper disposal and management of ash in off-site landfills. The ash pond will be closed at the same time as the former dredge cell, limiting the need for imported fill material, which is expected to result in time and cost savings.

2. What will the embayment look like when the cleanup is complete?

All of the ash from the embayment will be removed to native sediments and the areas will be restored to conditions that protect human health and the environment. This will enhance the diverse habitats for fish, semi-aquatic amphibians, and bird species.

3. What will the new on-site disposal cell look like?

Once all the ash has been put in place, a two-foot clay cover and one foot of top soil will be put over it. Vegetation will then be planted to prevent erosion. When the project is complete, the height of the closed on-site disposal area will be approximately 25 feet above the road surface, which is about 30 feet lower than the former dredge cell. The structure will be closely monitored, and regularly inspected to ensure public health and safety.

4. How long is this going to take?

Phase 2 clean-up activities are expected to take about four years to complete. A third and final phase of the ash recovery project is underway to comprehensively assess the human health and ecological risks posed by residual ash remaining in the River System after completion of the time critical dredging work. A decision regarding future cleanup actions in Phase 3 is not anticipated until 2011 or 2012.

5. How much will this cost?

Approximately $268 million, which includes an estimated $686,000 annual maintenance costs for the first 30 years once the cleanup is complete.

Disposal

6. How much more ash will be disposed of off-site?

No ash will be disposed off-site under non-time critical clean-up activities. Non-time critical ash will remain on-site in the on-site disposal area encompassing the ash pond and former dredge cell. However, ash remaining from time-critical activities will continue to be removed off-site through 2010.

7. Why is all the ash not being removed?

All alternatives meet the necessary clean-up requirements as set by the EPA Administrative Order and Agreement on Consent (AOC) for both off-site and on-site disposal of ash. Under Alternative 3b, the ash will be consolidated in an on-site disposal area, and no material will be taken off-site—eliminating potential impacts associated with off-site disposal. The cleanup plan virtually eliminates the risks and costs associated with shipping ash over public roads or by rail. Keeping all of the ash on site will minimize heavy truck traffic in the Roane County community, reduce wear and tear on area roads, and be less disruptive to local traffic and commerce. On-site disposal also addresses community concerns about proper disposal and management of ash in off-site landfills.

8. Will more ash be removed from any of the rivers?

This decision is still being developed. A River System Sampling and Analysis Plan (SAP), part of the third and final phase of the ash recovery project, focusing on potential human health and ecological risks posed by residual ash is currently under preparation. When the SAP is approved by EPA, the document will be released for public review and comment. The SAP is expected to be released for public review and comment by the end of May 2010. This plan focuses on evaluating potential impacts to the Emory, Clinch and Tennessee Rivers. Once this plan is final and the study is complete, a decision will then

be made regarding what to do with residual ash from the time critical dredging work. This decision will be reflected in a non-time critical removal action for the river system.

Potential Environmental Impacts

9. How is the ash being safely contained?

Dry ash will be placed atop an engineered base layer of sand, gravel and geo-fabric. The dry ash will be placed into the on-site disposal area slowly so that it does not slide. A new dike will be installed around the entire perimeter of the on-site disposal area to keep the ash from entering the embayment in the future. This dike will go 60 to 70 feet below ground level to the shale bedrock, and will consist of overlapping soil-cement columns that are able to withstand a local 6.0 magnitude earthquake. The surface area will incorporate measures to divert drainage and control runoff.

10. Why can the on-site disposal area be used without a liner?

Based upon EPA's assessment, it believes that on-site management of the coal ash is protective of human health and the environment given site-specific factors such as a silty clay liner which underlies the site, construction of a new perimeter dike that will address the lateral movement of groundwater, and a clay and soil cover that will limit water infiltration. The disposal area will also be closed. Drinking water, river water and groundwater in the area are sampled on a regular basis, and current results indicate no exceedances of drinking water standards or surface water quality criteria. Groundwater quality at the site presently meets water quality standards after more than 50 years of contact with existing (older) ash deposits that are present below the water table, and this is not expected to change as a result of permanently placing dried, compacted ash on site above the water table. Continued ecological, groundwater and river sampling will be conducted indefinitely after the cleanup is complete to monitor water conditions surrounding the site.

11. What safeguards are being taken to ensure that the coal ash will not negatively impact water quality?

Long-term groundwater monitoring will be conducted. The conceptual design for the on-site disposal area closure includes installation of a soil-cement perimeter foundation treatment zone that will impede lateral groundwater flow. The conceptual design for the on-site disposal area also includes a low-permeability clay cap over the ash, which will reduce infiltration of precipitation through the ash by an order of magnitude (14 inches/yr to 1.4 inches/yr) and reduce the volume of leachate generation. Drinking water facility, groundwater, and river water are sampled on a routine basis. Current analytical results indicate no exceedances of the Tennessee Drinking Water Standards for the Kingston Water Treatment Plant and local groundwater. River water samples indicate no exceedances of the Tennessee Aquatic and Wildlife Criteria. The SAP outlines sampling that will characterize the ash and assess any potential impacts to human health and the

ecosystem. Among other things, the SAP will include additional leaching tests, hydraulic conductivity tests, geochemical and geotechnical tests, additional wells, and sampling of groundwater at the shoreline, in sediment porewater and in epibenthic water immediately above the bottom of the river. This investigation will be used in quantitative fate and transport modeling to evaluate the flux of constituents to the river and to assess risks to human and ecological receptors. The river system will be addressed in a separate EE/CA and Action Memorandum following this additional investigation. Continued ecological, groundwater, and river sampling will be conducted after the clean-up is complete to monitor water conditions surrounding the site.

Community Involvement

12. How were community impacts considered in selecting this alternative?

Alternative 3b will limit the impact of traffic and transportation, both train and truck, through the Swan Pond community. This will result in less wear on the road surface, lesser amounts of truck traffic, and lesser amounts of train crossings. This alternative is also the most cost effective.

13. Were comments from community members fully considered in making the decision?

Yes, comments from the public and local community members were fully considered. Responses to all comments can be found in the Responsiveness Summary as an attachment to the Action Memo.

14. Will the public have an opportunity to comment further on this decision?

Yes, an additional comment period of at least 30 days will be set for the Action Memo, Non-Time Critical Removal Work Plan, and the Administrative Record.

15. How can the community be sure the ash will not leach into the groundwater?

Semiannual sampling of groundwater wells in the former dredge cell to date, indicate no contaminate plume is present under or around the site. Groundwater beneath the site in direct contact with the ash has, for the most part, not exceeded water quality standards in over 50 years. More than 400 wells in the immediate area were tested by TDEC immediately after the release and were found to be within required drinking water limits. The absence of a contaminate plume indicates metals from the ash are not readily leaching under current site conditions. Additionally, local hydrostratigraphic conditions impede metal migration and a low-permeability clay cap will limit infiltration of precipitation through the ash by an order of magnitude (14 inches/yr to 1.4 inches/yr) and reduce the volume of leachate generation. Continued groundwater and river sampling will be conducted to monitor water conditions surrounding the site and if issues arise, they will be addressed.

Regulatory

16. Who is responsible for overseeing and monitoring the on-site disposal area once it is built?

EPA, with coordination from TDEC, will oversee the removal operations. After removal operations are complete and the AOC is satisfied, TVA will continue to monitor and manage the closed landfill. TDEC will continue to conduct water and air sampling. TDEC will also continue to oversee TVA's long-term ash decisions. EPA will coordinate with TDEC on the progress of the site including the landfill.

17. Have there been any third party reviews other than EPA and TVA?

Yes, the Bureau of Reclamation and U.S. Army Corp of Engineers have reviewed and contributed to various aspects of the removal actions including the clean-up alternatives.

18. How will proposed coal ash regulation impact this proposed cleanup plan?

In its proposed regulation, EPA is proposing to allow any state or federally required cleanup that begins prior to the effective date of the final coal ash rule to be completed. The cleanup would of course need to be performed in accordance with the respective order that was determined appropriate for the specific cleanup. These orders should provide for protective conditions of coal ash disposal.

The Kingston TVA disposal area will be closed, which is consistent with EPA's recently proposed coal ash rule.