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FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
EMERGENCY DREDGING
FOR THE KINGSTON FOSSIL PLANT ASH DIKE FAILURE,
ROANE COUNTY TENNESSEE

Purpose and Need for Action

The Tennessee Valley Authority (TVA) needs to take emergency measures in response to a dike failure at the Agency's Kingston Fossil Plant (KIF) on December 22, 2008, in Roane County, Tennessee. The dike failure released about 5.4 million cubic yards of coal ash along with about 327 million gallons of water. The ash slide spread over about 300 acres of land and water adjacent to KIF including parts of Watts Bar Reservoir and the adjacent stretch of the Emory River.

The movement of the ash and debris into and downstream of the Emory River, the lower end of the Clinch River and the Tennessee River (Watts Bar Reservoir) has been minimized through the construction of a temporary underwater rock weir (Weir #1) at ERM 1.9 and a temporary rock dike (Dike #2) at the entrance to the Swan Pond Creek embayment. However, because the ash, debris, and containment structures are obstructions to river flow and storm water drainage, immediate action to remove the ash from the river is necessary to minimize the risk of flooding to properties along the Emory River. Commercial navigation and recreational boating on the river have been temporarily blocked. In addition, the ash continues to migrate downstream because of flow in the river, causing additional impacts.

TVA is proposing to dredge the ash and debris from the Emory River, dewater and dry the recovered ash, and store the dredged material temporarily onsite or at an appropriate offsite location. Additionally, once the ash is dredged out of the river, TVA will remove Weir #1 and repair an intake skimmer wall and a dike on the northern end of the ash pond. Once these actions are complete the Emory River flood elevations will be restored to pre-slide conditions, the navigable channel would be restored and downstream migration of the ash and debris will be minimized. TVA's proposed actions are listed below and explained in greater detail in the attached environmental assessment (EA) that is incorporated by reference in this document.

The actions covered in the EA are necessary to remove ash from the Emory River and reduce flood risk, restore navigation, and minimize downstream effects. The actions are scheduled to begin within the next 90 days. Future environmental reviews will assess the effects of the ash slide on the human, physical, and biological environment including a natural resource damage assessment. TVA has followed the CEQ Guidance for Preparing Focused, Concise, and Timely Environmental Assessments in preparing the attached EA.

Alternatives

The EA considers two alternatives: an Action Alternative and No Action Alternative. The Proposed Action Alternative includes:

1. Dredging ash and debris (estimated to be about 2.3 million cubic yards) from the Emory River between Emory River Mile (ERM) 1.5 and ERM 3.5 using a three phased approach.

a. Phase 1 dredging operations would remove ash and debris down to elevation 710 above mean sea level which would reopen the navigation channel. In accordance with the TVA Emory River Phase I Dredging Plan, a 60-day pilot dredging program would be implemented using adaptive management to develop and refine the methods and best management practices (BMPs) used for the dredging operations. Continuous water quality monitoring would be used to guide development of the methods and practices.
b. Phase 2 dredging operation would focus on removing ash and debris to return the river channel to its pre-slide depths, as determined by bathymetric sampling, and complete removal of Weir #1.
c. Phase 3 operations would focus on removal of ash deposits east of Dike #2 but outside the immediate Emory River channel.

2. Constructing, operating, maintaining, and closing an ash processing area (referred to locally as the ball field area) on the KIF site for dewatering and temporarily storing the ash material in accordance with a Tennessee Department of Environment and Conservation (TDEC) approved construction and operation plan.
3. Temporarily closing two chemical ponds that are no longer needed for plant operation as part of site preparation for the ash processing area.
4. Modifying the KIF fly ash sluice to facilitate use of the existing fly ash sluice channel for ash dewatering.
5. Discharging decanted water to the existing ash pond and thereon through the existing National Pollution Discharge Elimination System (NPDES) permitted outfall.
6. Stockpiling the ash onsite in an operational temporary storage area on a short-term basis.
7. Transporting ash by truck to existing Class I permitted landfills for disposal.
8. Using trucks to spray water and/or using a crusting agent for binding ash to reduce fugitive dust.
9. Modifying the gypsum storage area for Phase II ash disposal and dewatering, including excavation, grading to construct settling and dewatering trenches and a stacking area for drying operations and temporary fly ash stacking. Discharge water will be returned to the existing ash pond using pumps and solid piping.
10. Repairing KIFs intake skimmer wall and Dike C on the northern end of ash pond with riprap and other material as needed based on engineering analysis.
11. Conducting other ancillary activities including clearing and grading, delivery and installation of equipment and trailers, installation of silt curtain containment system, and construction of temporary dock systems as needed.

Under the No Action Alternative, TVA would not take these immediate actions to reduce flood risk, improve river navigation and minimize the downstream migration of fly ash.

Impacts Assessment

Once implemented, TVA's Proposed Action Alternative would restore the Emory River's natural flows and consequently restore the floodway and flood elevations to pre-slide conditions. The Action Alternative would open the Emory River channel to commercial navigation and recreational boating and minimize the amount of ash subject to continued downstream transport. Dredging is a necessary step for minimizing additional impacts and restoring aquatic habitat in the Emory, Clinch, and Tennessee rivers downstream of the slide area. Dredging would also facilitate the recovery of aquatic life in the slide area. Management practices, such as silt curtains, and administrative practices

including operational corrections based on water quality monitoring would be put in place to minimize impacts to water quality and the aquatic environment.

Dredging of the ash has the potential to disturb and mobilize contaminated legacy river sediments in the Emory River. Dredging may also result in some re-suspension of small amounts of ash. Legacy river sediments and re-suspended ash would be transported downstream and resettle in the Emory, Clinch, and Tennessee rivers. Extensive water quality monitoring, using both fixed station monitors and boat crews, will be employed by dredge operators to adjust dredging operations so as to minimize water quality impacts. Fugitive dust emissions and diesel exhaust from dredging activities and off-site transport would have minor impacts on off-site air quality. Noise suppression equipment would be used for dredging equipment and haul trucks to minimize noise impacts. Use of trucks to transport the ash off-site would also result in short-term traffic congestion and reduction in speeds. To minimize these impacts two or more available landfills would be used simultaneously.

Additional impacts to groundwater and visual resources are expected to be minor. The proposed actions would have no adverse effect on terrestrial vegetation or wildlife and would minimize additional adverse effects on wildlife that could result from downstream migration of the ash, and would not affect any federally or state-listed species. The proposed actions would not result in any additional impacts to wetlands in the slide area. Removal of the ash and debris would reduce the potential impacts to wetlands from the downstream movement of ash in the Emory, Clinch, and Tennessee rivers. The proposal would not result in any additional impacts, beyond the impact of the slide itself, to the two natural areas on the KIF site or impact the other natural areas in the vicinity. Further, the proposed actions would result in minor negative impacts on recreation in the KIF area and would reduce the potential for impacts to recreation downstream of KIF. Loss of the KIF ball fields due to use of the area for temporary storage and processing of the ash material would increase the need to use other outdoor sports facilities in the surrounding community. The dredging operations will have no effect on historic properties, including Archaeological Site 40RE46, because only minor amounts of the underlying sediment will likely be disturbed. Additionally, there are no historic properties in the dewatering and temporary storage area. The proposed action would reduce further impact to downstream natural and cultural resources and the human environment.

TVA has included the impacts on resources of past actions that have impacted the Emory River in its resources assessment of the proposed action. TVA has concluded that the incremental effects of the proposed action, including mitigation measures to minimize those effects, when added to the reasonably foreseeable future actions impacting the Emory River as identified in TVA's Watt Bar Reservoir Land Management Plan would have insignificant cumulative impacts.

Mitigation Measures

In its evaluation of the impacts of the proposed action, TVA, in coordination with other agencies, has determined that mitigation measures are needed to avoid and minimize the impact of the emergency actions. These measures include:

River Flow Management. TVA will continue to manage flows on the Clinch and Tennessee rivers in the Kingston area by controlling releases from Melton Hill, Fort

Loudoun and Watts Bar dams to the extent such flow control does not conflict with meeting the flow and water level requirements established in the 2004 TVA Reservoir Operations Study. The flow management is designed to minimize the downstream movement of ash and to prevent flow of potentially ash-laden water from the Clinch River into the Tennessee River.

Environmental Monitoring. TVA, TDEC, and U.S. Environmental Protection Agency (USEPA) will continue their comprehensive program for sampling and monitoring air quality, water quality, ash toxicity, and radioactivity during the dredging operations. The agencies will continue to conduct water sampling and will monitor the quality of public drinking water supplies and private wells, in-stream river water (both near the slide and at multiple locations downstream), and local springs. In addition to this sampling for chemical analysis, TVA and TDEC will take in-stream indicator readings to check pH, dissolved oxygen, and conductivity.

Sedimentation.

- Any flocculant (or polymer) applied to waters of the Emory River will be subject to applicable state or NPDES permit requirements. No flocculant with unacceptable toxicity characteristics will be used.
- Silt curtains will be used to control downstream loss of material where flow is less than 1.5 feet per second and water depths less than 20 feet.
- To minimize the risk of disturbing legacy river bottom sediment, data will be gathered to map the thickness and extent of the ash and the nature of the underlying sediment. GPS technology will be used to control cutter depth and prevent exposure of contaminated underlying sediment to every extent practicable.
- Water quality will be monitored to track the amount of ash re-suspended by dredge activities and transported out of the work area by water currents. The data collected by the monitoring will be used to guide dredging work to minimize impacts.
- TVA would use adaptive management during pilot dredging to determine the most likely place for plumes and locate monitors that will collect field data including turbity when collecting Total Suspended Solids and Total Dissolved Solids samples.
- Five continuous monitoring stations will be established at ERM 0.5, ERM 4.0, 0.25 mile north of the dredging operation, 0.25 mile south of the dredging operations, and in the KIF intake channel. The five monitoring stations will be used to measure the river flow (velocity and direction) and water quality parameters (turbidity, temperature, dissolved oxygen, conductivity, and pH).
- Through the duration of Phase 1 Dredging, field crews in boats, along with real-time fixed station measurements will be used for operational assessment. If plume turbidity or size becomes unacceptable, dredge operations will be decreased, cutting depth will be modified and/or other operation controls will be exercised, up to and including temporarily shutting down the operation. As knowledge is gained from monitoring, these decisions will result in operational changes to minimize impacts.
- Construction BMPs will be used to control discharges of sediment from staging areas and the ash processing area.
- Discharge from the dewatering process in the ash processing area will be subject to and in compliance with, the NPDES permit for the KIF discharge.

Dust and Erosion. TVA will monitor and control fugitive dust using measures such as truck watering or chemical dust suppressants on unpaved roads to minimize dust and erosion. Fugitive dust from ash storage will be controlled through the use of a water truck with spray bars and water cannon. If the stockpile is inactive for a period of time or water spray is ineffective, TVA will apply a crusting agent (binder) to the surface of the stockpile. Plant personnel will monitor the storage location for visible dust.

Wildlife and Plants. TVA will not stage barges adjacent to the heron colony and will monitor noise levels at the colony to document potential disturbance from dredging activities. TVA will also monitor breeding and nesting activities at the colony. If warranted, additional steps such as a hazing plan that would employ the use of wildlife decoys or harassment measures to keep wildlife from areas where polymers will be used. If polymers are used, TVA biologists will examine the site within 48 hours to make sure resources are not harmed.

TVA will work with regulatory and cooperating agencies and others to develop long-term studies to assess the impacts of the ash slide to wildlife resources.

Recreation. TVA will collaborate with appropriate agencies such as Tennessee Wildlife Resources Agency and U. S. Coast Guard (USCG) to ensure that boaters are aware of the potential hazards in the vicinity of the proposed dredging operations. Recreational boating advisories will be posted for the affected area of the Emory River. Additionally, danger/warning buoys will be installed in strategic locations to facilitate boater safety. Furthermore, marine patrols will continue to occur in the vicinity of the ash slide.

Transportation. If necessary, TVA will use two or more of the four identified permitted landfills simultaneously for ash disposal/storage in order to reduce the number of vehicles traveling a particular route and therefore mitigate traffic congestion, noise, and diesel emissions. Additionally, noise suppression equipment will be used on haul trucks and truck routes and will avoid schools, historic districts, and downtown areas to the extent possible.

TVA's request for proposals (RFP) for off-site roadway ash transport will require potential bidders contract to require that trucks are to properly maintained, including tune-ups. Additional requirements such as use of low sulfur diesel fuel and minimizing idling time will also be required.

Noise. Industry noise suppression equipment will be used for on-water operations, site preparation, and for haul trucks, especially for dusk-to-dawn operations. TVA is developing an adaptive management planning strategy in order to reduce impacts to residents who live near KIF and Swan Pond Road. TVA will consider haul trucks using a back-gate route and not use Swan Pond Road to access KIF during nights and weekends.

In order to reduce adverse lighting impacts to nearby residents resulting from lighting used during dusk-to-dawn dredge operations, lights will be oriented to minimize shine into nearby homes.

Intergovernmental Review

TVA consulted with 18 federally recognized Indian tribes and several federal and state agencies. Comments were received from TWRA, U.S. Fish and Wildlife Service and USEPA. Most comments were in support of the proposal to remove the ash and debris. Comments are summarized and addressed in the attached EA. The above agencies and others, including TDEC, USCG and U.S. Army Corps of Engineers, have been actively involved in working with TVA to develop the proposed action.

Conclusion and Findings

Based on the EA, TVA finds that the proposed action will have no effect on endangered and threatened species and will not affect historic properties. TVA concludes that the proposed action would not be a major federal action significantly affecting the environment. Therefore, an environmental impact statement is not required.

Preferred Alternative

TVA's preferred alternative is the Action Alternative. Implementation of the Action Alternative would restore the floodplain and floodway to pre-slide elevations, restore river navigation, and minimize further downstream movement of ash.

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Date Signed