

**FINDING OF NO SIGNIFICANT IMPACT  
TENNESSEE VALLEY AUTHORITY**

**COLBERT ASH POND 4 SEISMIC PROJECT  
(CANE CREEK RELOCATION & BUTTRESS PLACEMENT)  
Colbert Fossil Plant, Colbert County, Alabama**

The Tennessee Valley Authority (TVA) Colbert Fossil Plant (COF) is located in northwestern Alabama, approximately 14 miles west of Muscle Shoals in Colbert County. TVA ceased all coal-fired power generation at COF on March 23, 2016. TVA manages coal combustion residuals (coal ash or CCR) in closed on-site units, including in Ash Pond 4, which is located on TVA property south of COF and north of U.S. Highway 72. Ash Pond 4 is approximately 52 acres in area and is enclosed by a perimeter dike system that is approximately 6,700 feet in total length. Ash Pond 4 was closed and capped in early 2018.

As described in the Environmental Assessment prepared by TVA, incorporated herein by reference, the Ash Pond 4 facility has undergone multiple slope stability evaluations since 2009 and remediation efforts to improve safety factors in accordance with federal and state safety factor criteria. In 2014, TVA completed a liquefaction analysis and found that a section along the Cane Creek side of Ash Pond 4 was susceptible to liquefaction during a design earthquake with an approximate return period of 2,500 years (i.e., an earthquake with 2% probability of occurrence in 50 years).

A project was initiated to improve the soils by a deep mixing method (DMM; i.e., cement grout mixed with soil) where walls were installed in the subgrade soils to stabilize the east dike (on the Cane Creek side) for earthquake loading. During installation of the DMM walls, TVA identified an anomalous foundation condition where competent rock, on which to found the DMM walls, was deeper than previously estimated. The anomalous area is approximately 500 feet long, as measured along the alignment of the Ash Pond 4 perimeter dike, and is clay filled with large boulders. TVA completed the remainder of the 3,200-foot DMM wall in 2016, and elected to discontinue the DMM wall installation in the 500-foot area and to observe the performance of the DMM wall during and subsequent to the Ash Pond 4 closure, particularly evaluating the reduction in pore pressures from imbedded instrumentation.

In 2018 and 2019, TVA evaluated the instrumentation and performed additional subsurface investigation to monitor the current closed condition and to evaluate whether the liquefaction potential in the anomalous area improved from the previous evaluation. TVA determined that the pore water had dropped significantly but not enough to completely improve the safety factors in the liquefaction analysis.

TVA has evaluated and developed a constructible alternative to improve post-earthquake stability of the 500-foot-long portion of the east dike. The primary design constraint in developing a proposal has been the proximity of Cane Creek running along the toe of the east dike.

### **Proposed Action**

To address the potential seismic vulnerability of this portion of the east dike, TVA proposes to place a soil- and rock-fill buttress against the east dike of Ash Pond 4 within the anomaly area, which would require relocating approximately 1,700 linear feet of Cane Creek to the east of its present alignment.

Under the proposed action, TVA would excavate a new stream channel and realign the creek to allow for the installation of a buttress. The current channel of the creek that would be relocated would be filled and graded with soil and rock. This would allow TVA to construct the buttress against the east dike of the closed Ash Pond 4. After the channel is relocated and the buttress is installed, TVA would implement a planting and seeding plan to reclaim the disturbed areas and minimize erosion. The new creek channel (streambed and banks) would be the same length of the current channel and would be designed to resemble and function as a natural stream with improved features. Pending the outcome of TVA's environmental review and TVA's final decision on this project, construction could begin in Spring 2022 and be completed by late 2022 (approximately 8 months, as currently scheduled).

TVA estimates that the stream realignment and buttress placement would disturb approximately 18 acres, including 3 acres of land excavated to create a new stream channel and 2.6 acres of the old stream channel. TVA would clear 15.4 acres of vegetation within this 18-acre area in order to conduct construction activities. In addition, a laydown area would be created near the project location on previously disturbed lands, affecting an additional 7 acres. In total, approximately 25 acres would be disturbed under the proposal. As the project is implemented, the extent of disturbance may differ from these acreage estimates to a minor extent.

### **Purpose and Need**

TVA's need derives from the condition of a portion of the ash pond dike. The primary objective of the proposed action is to improve stability of the dike and reduce the risk that a design earthquake (i.e., 2,500-year return period) could cause during or after the earthquake. Although the likelihood of a seismic event occurring at any given time is very low, TVA considers the probability of an earthquake-induced failure of the dike to be a concern that warrants upgrades to the 500-foot area of the dike. Completing the upgrades to the dike at this time would allow TVA to avoid potential significant environmental and economic impacts that may result from a potential earthquake.

## **Environmental Assessment**

In the EA, TVA analyzed two alternatives: an alternative in which TVA would take no action and the proposed action alternative under which a buttress would be placed against the dike and the channel of Cane Creek would be relocated. After dismissing numerous environmental resources from the review because they were not present in the project area, TVA reviewed terrestrial ecology (wildlife and botany), aquatic ecology, threatened and endangered species, surface water quality, floodplains, socioeconomics, and transportation.

The installation of the buttress and relocation of the stream would result in the loss of 15.4 acres of terrestrial habitat, with some temporary impacts occurring during construction as well. The vegetation that would be removed would be common to the region, with no unique or important habitat affected. Potential impacts to bat and bird species would be reduced because TVA would apply a seasonal clearing requirement and other best management practices (see below). There would be minor impacts to wildlife associated with displaced species during construction, although impacts to migratory birds or osprey would be avoided.

Potential impacts to aquatic ecology during construction activities would be minor given the implementation of best management practices and permit requirements. Approximately 1,700 feet of Cane Creek would be relocated and two ponds on the project site would be eliminated, resulting in temporary adverse impacts. TVA would reconfigure the stream channel at the same length and would create a natural setting with pools, riffles, and improved riparian features. These habitat improvements would be long-term aquatic habitat improvements and would result in minor beneficial effects on the water quality over time. Potential impacts to surface water quality would be reduced by sediment and erosion control measures and permitting requirements, although there may be minor effects due to construction activities.

TVA found in its review that flood elevations would not increase more than 1.0 foot and that any increases in flood elevations would be limited to TVA property only. The proposal is consistent with Executive Order 11988 (Floodplain Management). By implementing the mitigation measures identified below, TVA would reduce floodplain impacts such that the proposal would not result in significant impacts on floodplains and their natural and beneficial values.

In the EA, TVA also found that there would be temporary minor impacts to the local transportation network from project activities. The construction workforce traveling to and from the proposed project area site would be a minor contribution to traffic on the local transportation network for the eight-month construction period (approximately 70 trips daily). In addition, TVA would transport soil and rock material to construct the buttress from a nearby quarry site at a rate of up to 100 truckloads per day for approximately 125 days. This would result in an increase of up to 200 vehicle trips per day (100 vehicles making a round trip journey) along the route identified in the EA. This increase of 200 vehicles a day along the route represents a minor increase of traffic along the route. While the proposed action would have a minor effect on transportation, the combined effects of the proposal and other reasonably foreseeable

activities occurring in the vicinity of COF would be moderate traffic impacts (i.e., congestion) in the immediate vicinity of COF, with minor effects occurring further away from COF.

TVA also analyzed potential economic and social effects of the proposed action. The proposed action would result in minor temporary beneficial economic effects associated with employment. TVA found that there are no environmental justice populations that would be disproportionately affected by the proposal. Only transportation impacts would occur outside of the project area, and vehicles hauling fill materials would not pass through any such community. Any increase in traffic during the construction period would be temporary and minor as the workforce would disperse at distances further from the reservation. This impact would not be disproportionate as impacts would be consistent across all communities (i.e., environmental justice and non-environmental justice) along the local roadways.

### **Necessary Consultation**

TVA would secure the necessary permits to undertake the Proposed Action. All permits would be held by TVA.

- A National Pollutant Discharge Elimination System (NPDES) Stormwater Construction Permit is required for clearing, grading or excavating the project area to ensure proper stormwater management and treatment throughout the project. A Notice of Intent for Construction Activities and site-specific Construction Best Management Practices Plan would be developed and submitted to the State of Alabama Department of Environmental Management (ADEM) for approval.
- TVA must also obtain a permit under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act to implement dredge or fill activities in jurisdictional waters of the U.S. TVA would coordinate with the United States Army Corps of Engineers (USACE) to obtain these permits.
- In compliance with Section 401 of the Clean Water Act, a Section 401 Water Quality Certification would be coordinated through the ADEM's Water Division for the proposed discharge of fill material and dredging in streams.
- ADEM is expected to issue a solid waste permit for Ash Pond 4 pursuant to ADEM Administrative Code Chapter 335-13-15. The proposed improvements would be incorporated into the permit.

The project site includes potential summer roosting habitat for Indiana bat and northern long-eared bat. Because potential habitat for these species may be affected by a number of activities associated with the proposed project, TVA would comply with TVA's 2018 programmatic consultation with the U.S. Fish and Wildlife Service (USFWS) on routine actions and federally listed bats in accordance with the Endangered Species Act (ESA) Section 7(a)(2). For those activities with potential to affect bats, TVA agreed to implement specific conservation measures. Under the Proposed Action Alternative, TVA would implement identified conservation measures to ensure compliance under this programmatic agreement. TVA has

determined that the proposed actions would not impact any additional federally listed species; thus, no additional consultation is required under Section 7 of the ESA.

TVA has previously consulted under Section 106 of the National Historic Preservation Act (NHPA) with the Alabama Historical Commission (AHC) and federally recognized Indian tribes regarding two sites that were located within the area of potential effect during a survey of the area conducted in 2016 associated with the COF Decommissioning Project. The AHC agreed with TVA's determination that the two sites are ineligible for inclusion on the National Register of Historic Places (NRHP). Based on this prior survey and consultation, TVA finds that the area of potential effect contains no NRHP-listed or -eligible archaeological sites and that there would be no effects on historic properties. Given these previous consultations, TVA will not consult with the AHC or tribes regarding this undertaking.

### **Public Involvement**

On June 30, 2021, TVA issued the draft EA for public review and comment. The availability of the draft EA was announced in a newspaper advertisement (The Times Daily of Florence, Alabama), and the draft EA was posted on TVA's website. TVA also issued a media advisory and provided notice via email to numerous local, state and federal officials in the region. An article about TVA's proposal and the public comment period was published by the Times Daily on July 3, 2021. During the comment period, TVA received one comment from a Florence, Alabama resident expressing general support for TVA's project.

### **Mitigation Measures and Environmental Commitments**

TVA would also apply the following timing restrictions to address potential impacts to sensitive species:

- To minimize potential impacts to sensitive bat species, tree removal would occur between October 15 and March 15, and TVA would implement the conservation measures identified in Attachment A to the EA. TVA would record and document removal of potentially suitable summer roost trees and include it in annual reporting in accordance with consultation conducted with USFWS under Section 7(a)(2) of the ESA.
- To avoid potential effects to osprey, TVA would not remove vegetation within 660 feet of an osprey nest near the project site between March 1 and August 1 while osprey may be present and nesting.

In addition to the requirements of necessary permits, TVA would implement various best management practices (BMPs) to avoid or minimize potential adverse environmental effects resulting from the proposed activities. Construction-related BMPs would be critical to ensuring that environmental resources are not adversely affected. BMPs include the appropriate measures to control erosion, stabilize disturbed areas, minimize storm water impacts, and reduce sedimentation. BMPs also ensure that construction-related waste is properly contained so that environmental impacts are avoided. All wastes would be managed in accordance with applicable waste management laws and regulations.

Consistent with Executive Order 11988, TVA will analyze the proposed project using the hydraulic model in the effective Flood Insurance Study to determine whether the base flood elevations of Cane Creek would increase more than 1.00 foot as a result of the project, and whether any increases in flood elevations would extend beyond TVA property. Based upon the outcome of the hydraulic analyses, TVA would either document that the project would cause no more than a one-foot rise in flood elevations and no increase in flood elevations beyond TVA property, or TVA would begin coordination of a Letter of Map Revision with the Colbert County Floodplain Administrator.

### **Conclusion and Findings**

Based on the findings of the EA, TVA concludes that installing an earthen berm along a portion of Ash Pond 4 and the realignment of Cane Creek would not be a major federal action significantly affecting the environment. This determination is contingent upon the implementation of the mitigation measures identified above to minimize or avoid potential impacts to environmental resources, implementation of the BMPs identified above, and adherence to all applicable regulatory and permitting requirements. Accordingly, an environmental impact statement is not required.



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Date Signed