

Document Type: EA-Administrative Record
Index Field: Finding of No Significant Impact (FONSI)
Project Name: Gallatin Fossil Plant Bottom Ash Process Dewatering Facility
Project Number: 2016-21

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
GALLATIN FOSSIL PLANT BOTTOM ASH PROCESS DEWATERING FACILITY
SUMNER COUNTY, TENNESSEE

The Tennessee Valley Authority (TVA) is proposing to construct and operate a bottom ash process dewatering facility at the Gallatin Fossil Plant (GAF) in Sumner County, Tennessee. With a long-standing commitment to safe and reliable operations and to environmental stewardship, TVA began to modernize its coal ash management in 2009 including converting from wet to dry ash storage. This effort was later endorsed by the TVA Board in 2011.

To enable this wet-to-dry storage conversion, TVA proposes to install a dewatering facility for bottom ash at GAF. The purpose of the proposed action is to help TVA convert CCR storage from wet to dry and comply with present and future regulatory requirements related to CCR production and management. 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 of a Bottom Ash Process Dewatering Facility Utilizing a Continuous or “Once Through” System; and Alternative C – Construction of a Bottom Ash Dewatering Facility with a Recirculated Bottom Ash Effluent Stream.

Under the No Action Alternative, TVA would not construct the dewatering facility. TVA would continue to store bottom ash in wet onsite impoundments, and the existing impoundments would continue to be operated under current NPDES permits. Currently, bottom ash is discharged to a sluice trench where the majority of the ash settles out while the waste water flows continue on to the stilling basin and bottom ash impoundment. The bottom ash is dug up out of the trench and allowed to dry in piles on the ground next to the trench. After further dewatering and drying, the bottom ash is eventually relocated to the onsite special waste landfill.

This alternative does not meet the purpose of achieving the overall TVA goal of converting the storage of bottom ash at GAF from wet to dry CCR storage. The No Action Alternative provides a baseline for describing the anticipated environmental effects of the proposed action, as required in regulations issued by the Council on Environmental Quality (CEQ) for implementing the National Environmental Policy Act (NEPA).

Under Alternative B, TVA would construct a bottom ash mechanical dewatering facility at GAF to create dry CCR for storage in an approved onsite landfill. To meet requirements under EPA’s CCR Rule, the existing ash impoundment(s) would eventually be closed. The dewatering facility would facilitate compliance with this rule. The dewatering equipment would be constructed on the former site of the chemical pond. The facility would be constructed on an approximately 10-acre site; and an additional 10 acres would be used for temporary equipment laydown and mobilization during construction. Construction of the dewatering facility is expected to take place over an 18- to 24-month period.

Bottom ash would be dewatered using specialized equipment that would operate continuously while GAF is generating. The dewatering would involve two basic processes. In the first

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process, bottom ash sluice water would be pumped from the powerhouse to the top of a submerged drag chain conveyor (SDCC). Within the SDCC, the ash would settle out and would then be transported up an incline allowing for natural dewatering by gravity. At the top of the incline, the ash would be discharged to concrete pads (“bunkers”) for temporary storage and would be stacked in piles. Any remaining water in the material would evaporate or would drain by gravity and be collected in sumps which would drain back to the facility for treatment. The dry ash would then be transported directly to an approved onsite landfill by truck.

In the second process, water collected from the SDCC would be sent to a clarifier to facilitate settling of the remaining fine ash solids. Fine ash solids from the clarifier would be pumped back to the SDCC for further dewatering. Clarified water would be conveyed to the process water tanks, which would supply water for use in the dewatering system. Excess water from the process water tanks would be conveyed to either a wastewater treatment equalization (EQ) basin or directly to the NPDES outfall.

Under Alternative C, TVA would construct the same dewatering facility as described under Alternative B, and would also construct a recirculation system. Instead of discharging water from the dewatering process through the existing NPDES-permitted outfall, the effluent would be rerouted back into the powerhouse for future sluicing operations. The recirculation system would be contained within the same project boundary described for Alternative B. Construction of the recirculation system would take place over a 12- to 18-month period following completion of the dewatering facility.

The recirculation system would include additional recirculating pumps, additional power from the electrical room, and a water containment facility. The containment facility would hold effluent from the bottom ash dewatering facility for recirculation back to the powerhouse to be available when needed for sluicing operations. No bottom ash sluice water would be discharged from the NPDES-permitted outfall, thus reducing this discharge. However, the recirculated water stream would require a make-up water stream, a blowdown wastewater stream, and an outage wastewater stream.

In addition to the two action alternatives, TVA considered an under-boiler bottom ash removal system, mechanical removal of bottom ash using excavators, and dry boiler bottom conversion, but these alternatives were dismissed from detailed analysis due to physical limitation or cost considerations.

TVA’s preferred alternative is Alternative C, construction of the process dewatering facility and the recirculation system to recycle sluice water back into the powerhouse for future sluicing operations. Alternatives B and C both provide long-term benefits, and meet the purpose and need of the project as these alternatives both would move the plant to dry storage of CCRs. While Alternative C is more costly than Alternative B (because of the addition of a recirculation system), TVA prefers Alternative C because of the benefits of water reuse, and reduction of discharge from the NPDES permitted outfalls. TVA would implement its preferred alternative (i.e., Alternative C) in a phased manner, starting with the construction of the once-through dewatering facility in the first phase.

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Impacts Assessment

Based on the analyses in the EA, TVA concludes that the implementation of Alternative B would not affect climate change, vegetation, wildlife, threatened and endangered species, surface water and wastewater, groundwater and geology, wetlands, solid and hazardous waste, prime farmland, visual resources, or noise. Lands expected to be used for construction-related activities and operations are already used for heavy industrial use and no changes in land use would occur with this alternative. There would be minor and mostly temporary construction-related impacts to air quality, natural areas, parks, recreation, and local transportation networks. Given the improvements in the quality of the water discharged under Alternative B, the impacts on aquatic ecology would be minor but beneficial.

TVA conducted a desktop review of the land within the area of potential effect (APE) and concluded that it contains no historic properties. In a letter dated February 8, 2017, the State Historic Preservation Officer (SHPO) concurred with TVA's finding that there are no NRHP listed or eligible properties affected by this undertaking.

Implementation of Alternative B would not result in disproportionate adverse impacts to minority or low income populations. Construction and operation of the dewatering facility would have a very small positive effect on the local economy with the short-term employment of workers during construction and long-term positions created by operation of the facility.

Implementation of Alternative C would have the same impacts on the resources affected by construction, dewatering, and ash storage activities as described for Alternative B; however, the added construction of the recirculation system would decrease the volume of water discharged, thus providing a potential benefit to groundwater quality. Compared to Alternative A, both Alternatives B and C would have beneficial impacts to surface water, as the use of surface impoundments and discharge of bottom ash sluice water to the Cumberland River would be reduced or eliminated.

Public and Intergovernmental Review

The Draft EA was released for public review and comment for 30 days beginning on March 23, 2017. The availability of the Draft EA was announced in two local newspapers, and posted on the TVA website. TVA's agency involvement includes circulation of the Draft EA to local, state and federal agencies for review. In addition, the Draft EA was reviewed by the appropriate state agencies in the Tennessee State e-Clearinghouse. TVA received comment letters on the Draft EA from one private citizen and from the Tennessee Department of Environment and Conservation (TDEC). In addition, the Draft EA was reviewed by the appropriate state agencies in the Tennessee State e-Clearinghouse. TVA considered all of the substantive comments received on the Draft EA and has responded to them in the Final EA. Federally recognized Native American tribes were consulted concerning the proposed undertaking, and occurred with TVA's recommendation to proceed with the recommended actions. Further, implementation of Alternative B or Alternative C would be consistent with Executive Order (EO) 11998 (Floodplains Management) and EO 11990 (Protection of Wetlands).

Mitigation

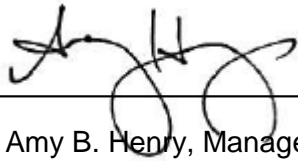
TVA would implement operating permit requirements and the routine best management practices described in the EA to avoid or reduce minor adverse environmental effects from the construction of the dewatering facility and recirculation system as described in the EA for

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Alternative B and Alternative C, respectively. TVA has not identified the need for any non-routine mitigation measures to further reduce potential impacts.

Conclusion and Findings

Based on the findings in the EA, TVA concludes that implementing Alternative B or Alternative C would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required to implement either of these action alternatives. TVA's preferred alternative and the one it is inclined to implement is Alternative C.



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July 19, 2017

Date