

Document Type: Supplemental EA-
Administrative Record
Index Field: Finding of No Significant
Impact (FONSI)
Project Name: Bull Run Fossil Plant Ash
Impoundment Closure
Project
Project Number: 2015-31

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
BULL RUN FOSSIL PLANT ASH IMPOUNDMENT CLOSURE PROJECT
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
ANDERSON COUNTY, TENNESSEE

In June 2016, the Tennessee Valley Authority (TVA) issued the Final Ash Impoundment Closure Programmatic Environmental Impact Statement (PEIS) that considered alternatives and related environmental impacts associated with closure of ash impoundments containing coal combustion residuals (CCR) at fossil fuel plants across the Tennessee Valley. Part I of the PEIS consisted of the Programmatic National Environmental Policy Act (NEPA) Review. The record of decision (ROD) for this action (issued on August 5, 2016) allowed future site-specific environmental reviews of CCR impoundment closures to tier from the PEIS. In Part II of the PEIS TVA considered the closure of the Bull Run Fossil Plant (BRF) Sluice Channel and Main¹ Ash Impoundment, which are part of the wet CCR disposal area. As originally proposed, the approximately 33-acre Main Ash Impoundment would be Closed-in-Place, which would entail dewatering, grading and covering with an approved cover system. Subsequent to the completion of the PEIS, TVA determined that there is a long-term need for wastewater treatment at BRF and revised the closure plan to support a wastewater treatment system at BRF. To support the revised closure plan, TVA issued a Supplemental Environmental Assessment (SEA) in 2017 (Finding of No Significant Impact [FONSI] issued on October 23, 2017) that revised the selected alternative in Part II of the PEIS to closure of the Main Ash Impoundment and Stilling Pond in place using an approved cover system. Under the 2017 SEA, the Stilling Pond and a portion of the Main Ash Impoundment would be repurposed for use as process water basins (PWB). The capping system for the Closure-in-Place would serve as a bottom liner for the PWBs. The system would handle only storm water flow and non-CCR process water flow from the plant.

TVA revised the closure plan evaluated in October 2017 by issuing a second SEA in 2018 (Draft SEA issued August 23, 2018). As part of this updated plan, approximately 2,900,000 yd³ of CCR materials of the Main Ash Impoundment would be Closed-in-Place. The remaining portion (approximately 13 acres) of the Main Ash Impoundment would be Closed-by-Removal with up to an estimated 595,000 yd³ of CCR materials being removed and transported to an onsite landfill. The portion of the Main Ash Impoundment that would be Closed-by-Removal would then be repurposed into a PWB (subsequently designated as PWB2). In addition, the Stilling Pond would be Closed-by-Removal, which would entail removal and transport of up to an estimated 71,000 yd³ of CCR and residual materials to an existing onsite landfill. The Stilling Pond would also be repurposed as a PWB (subsequently designated PWB1).

Subsequent to the issuance of the August 2018 Draft SEA, TVA gained additional insight on conditions of the Main Ash Impoundment and Stilling Pond at BRF. TVA has encountered worker safety and stability issues related to characteristics of the stored CCR in the Stilling

¹ In previous documents this area was referred to as the “Fly Ash Impoundment”. TVA now refers to this area as the “Main Ash Impoundment” to conform to other reports, however, the extents and description of this area have not changed.

Pond that make it difficult to dry the ash to a degree necessary for excavation and placement in a lined landfill. In addition, working with the wet, fine-grained CCR in the impoundments presents a safety concern, due to the material's loss of strength when saturated, and subsequent detrimental effect on local stability during the removal process. Excavation of the CCR under these conditions is difficult and time-consuming, which can cause construction schedule delays, increasing worker exposure to unsafe conditions.

The Main Ash Impoundment and Stilling Pond are adjacent to one another and likely have similar characteristics. As PWB2 would require excavation of approximately 10 times the amount of material as PWB1, the effects of the fine-grained CCR would be compounded and made more complex. As with PWB1, the soft fine-grained nature of this material would require specialized, less efficient, amphibious equipment and dewatering methods to prevent local stability issues from posing a safety risk for construction personnel during excavation. There is also a smaller footprint available for material from PBW2 to be handled and dried, which adds to the complexity of the work (e.g., extended drying durations).

The new proposed PWB system (PWB1 coupled with PWB2) is designed to work in series. The conveyance channel would discharge to PWB2, which would drain to PWB1 where water is discharged through a National Pollutant Discharge Elimination System (NPDES) permitted outfall (Outfall 001). PWB1 does not have the capacity to manage storm water and non-CCR process water as a single system for extended periods of time. During the period of construction proposed under either the Closure-by-Removal or Closure-in-Place Alternatives, TVA is at risk for exceeding NPDES permit limits during storm events or exceeding the basin's capacity. Because of the measures necessary to safely work with the material in the Main Ash Impoundment, the construction timeline would be significantly extended, which in turn extends the period during which TVA would be at risk for exceeding NPDES permit limits.

Therefore, given the issues associated with constructability/timing/safety and environmental compliance, TVA is considering an additional alternative for closure of the Main Ash Impoundment at BRF. Specifically, TVA is considering a change in the construction of PWB2 (the PWB in the area of the Main Ash Impoundment). The new proposed plan would make the construction effort safer and more feasible. It includes a proposed interim action to leave the CCR in the Main Ash Impoundment in place and construct an interim PWB2 on top of the existing CCR impoundment. This interim solution would be implemented until a decision on a permanent solution for the disposition of the underlying CCR is made.

All of the proposed designs are technically sound and protective of the environment. TVA recognizes that in addition to state and federal water and waste regulations, TVA's CCR disposal areas at BRF, including the impoundments, are subject to the Tennessee Department of Environment and Conservation's (TDEC) Commissioner's Order (Commissioner's Order OGC15-0177) In Section VII.D.1 of the Order, TDEC recognizes that TVA may, in compliance with CCR Rule requirements, elect to close CCR surface impoundments and/or landfills before completion of the investigative process outlined in the Order. While TVA may be forced to complete construction by deadlines established by the CCR Rule, TVA remains dedicated to completing the site-wide investigation, the comprehensive environmental assessment, and any corrective actions that are identified as necessary. TVA also acknowledges that any actions taken before the TDEC Commissioner's Order process is complete are subject to the potential for TDEC to subsequently require TVA to take other and/or further remedial actions as a result of the investigative process. Accordingly, PWB 2 is described herein as "Interim" because TVA acknowledges that additional or different actions may be required under the Order with respect

to the CCR that remains underneath Interim PWB2, and in that event, TVA could be required to remove Interim PWB2 in order to take the necessary actions.

Alternatives

TVA evaluated three primary alternatives in the SEA:

1. Alternative A – No Action
2. Alternative B – Closure-in-Place of a Portion of the Main Ash Impoundment, Closure-by-Removal of the Remaining Portion of the Main Ash Impoundment and Repurposing into a Process Water Basin (PWB2), Closure-by-Removal of the Stilling Pond and Repurposing into a Process Water Basin (PWB1), and Development of a Process Water Basin Emergency Spillway
3. Alternative C – Interim Cover of the Main Ash Impoundment and Repurposing a Portion for an Interim Process Water Basin (Interim PWB2), Closure-by-Removal of the Stilling Pond and Repurposing into a Process Water Basin (PWB1), and Development of a Process Water Basin Emergency Spillway

The impacts of the alternatives were assessed in the attached SEA, finalized in June 2019. The SEA is incorporated herein by reference.

Under the No Action Alternative TVA would close the Stilling Pond and Main Ash Impoundment in place as previously described in the October 2017 SEA and FONSI. The Stilling Pond and a portion of the Main Ash Impoundment would be repurposed as PWBs as previously described in the October 2017 SEA.

Under Alternative B, TVA would cover with an approved cover system an approximately 20-acre portion of the Main Ash Impoundment containing approximately 2,900,000 yd³ of CCR materials. The remaining portion (approximately 13 acres) of the Main Ash Impoundment would be Closed-by-Removal with up to an estimated 595,000 yd³ of CCR materials being removed and transported to an onsite landfill. The portion of the Main Ash Impoundment that is Closed-by-Removal would be repurposed into a PWB (PWB2) for BRF. The Stilling Pond would be Closed-by-Removal, which would entail removal and transport of up to an estimated 71,000 yd³ of CCR and residual materials to an existing onsite landfill. The Stilling Pond would be repurposed as a PWB (PWB1).

As part of the PWB infrastructure, an emergency spillway would be constructed along the western side of the perimeter dike that borders the Stilling Pond. The emergency spillway would be created by modifying a section of the existing perimeter dike to a lower elevation. The spillway would be armored with rip rap, concrete, or a combination of the two on the top and outside slope. Laydown areas would be the same as those described in the site-specific analysis contained in Part II of the PEIS and the October 2017 SEA.

For the covered portion of the Main Ash Impoundment, if the CCR materials are suitable for regrading and consolidation, they would remain in the impoundment. If they are not suitable for regrading, the material would be removed, dried, and placed in an onsite landfill. In areas where CCR materials are removed and placed in the onsite landfill, suitable fill material may be imported to grade and support the cover system. The cover system in the Main Ash Impoundment would be constructed to the same standards as described in Part II of the PEIS.

During dewatering and construction of PWB2, pore water would be removed from the Main Ash Impoundment, pumped into temporary treatment tanks or boxes, where it would be treated, and discharged through the NPDES permitted Outfall 001. Free water would be pumped and discharged through Outfall 001. Mitigative measures would be introduced as needed to ensure that discharge waters comply with NPDES permit limits and TDEC water quality criteria. These measures could include, but would not be limited to, implementing best management practices (BMPs), wastewater treatment technologies, and/or rerouting or recycling water. Once constructed, the PWBs would only manage storm water and non-CCR wastewater from BRF facilities.

Under Alternative C, the Stilling Pond would be Closed-by-Removal and repurposed as a PWB (PWB1) and the emergency spillway would be constructed as described under Alternative B. However, under this alternative the Main Ash Impoundment would be Closed-in-Place with an interim cover². TVA would repurpose approximately 13 acres of the closed area and use it on an interim basis as a PWB (Interim PWB2). The capping system for the Closure-in-Place would serve as a bottom liner for Interim PWB2. As with Alternative B, the new PWBs would receive only storm water flow and non-CCR wastewater from the BRF facilities.

Alternatives B and C both provide long-term benefits and meet the purpose and need of the project as both these alternatives would eliminate future wet CCR storage and provide a facility for wastewater treatment at BRF and both would result in minimal environmental impacts. However, analysis of material in the Stilling Pond and Main Ash Impoundment indicated that closure of the impoundments as described under Alternative B would result in constructability/timing/safety and potential environmental compliance hazards. Therefore, TVA prefers Alternative C, which avoids these potential impacts. The interim solution for the Main Ash Impoundment would be implemented until a decision on a permanent solution for the disposition of the underlying CCR is made through the 2015 TDEC Commissioner's Order process.

Impact Assessment

TVA determined that the potential impacts of the alternatives under consideration on the following environmental resources are bounded by the PEIS, including the site-specific assessment described in Part II of the PEIS and the October 2017 SEA: air quality, climate change, land use, prime farmland, vegetation, wildlife, aquatic ecology, threatened and endangered species, geology, wetlands, floodplains, natural areas, parks, public recreation, cultural and historic resources, visual resources, hazardous materials and hazardous waste, solid waste, noise, transportation, socioeconomics, environmental justice, and public health and safety. Although a portion of the Stilling Pond would be Closed-by-Removal, any potential impacts on noise, air quality, or climate change (i.e., greenhouse gas emissions) related to the transport and storage of CCR from the Stilling Pond to an onsite landfill are anticipated to be negligible as the transport of CCR is short-term and limited to onsite vehicle movements. In addition, the volume of offsite borrow needed for closure of the Stilling Pond would be reduced from that considered in the previous site-specific analysis in Part II of the PEIS. Therefore, potential effects on air quality, noise, climate change and transportation are not assessed in the SEA.

² The Interim Cover of the Main Ash Impoundment is temporary, pending TDEC approval of a permanent solution. However, if this temporary plan is approved by TDEC as a permanent solution, TVA would evaluate whether additional NEPA review would be required. If TVA determines that additional review under NEPA is required, an additional public comment period would not be necessary since TVA is disclosing to the public now that it could become permanent.

Alternative C is primarily associated with the closure, consolidation and reconfiguration of the Main Ash Impoundment and Stilling Pond. Accordingly, the only resources retained for detailed analysis in the SEA are groundwater and surface water.

The Main Ash Impoundment would be Closed-in-Place with an interim cover system, as described in Part II of the PEIS. A portion of the closed impoundment (the southern portion) would be repurposed for use as an Interim PWB2. The capping system for the Closure-in-Place would serve as a bottom liner for Interim PWB2. The Stilling Pond would be regraded, if necessary, and any residual CCR would be removed, dried and placed in an existing onsite landfill. Repurposing of the southern portion of the Main Ash Impoundment and the Stilling Pond would entail installation of an approved low permeability liner that would isolate surface water above the liner and prevent groundwater contact. Dewatering and subsequent lack of rainfall infiltration into the CCR materials in the impoundment would provide an immediate reduction in the potential downward influx of leachate moving from the impoundment. Under Alternative C, reduction of the water level or water pressure in the Main Ash Impoundment is expected to reduce mounding of the surficial aquifer, reduce vertical leaching of CCR constituents and reduce groundwater impacts in a manner similar to that previously described in Part II of the PEIS. Consequently, as previously described in Part II of the PEIS, proposed impacts to groundwater from in-place closure of the Main Ash Impoundment and repurposing of a portion of the Main Ash Impoundment and the Stilling Pond are expected to be beneficial. Additionally, TVA would implement any supplemental mitigation measures required pursuant to the Order issued by TDEC in August 2015 as well as the closure plan approved by TDEC, which could include additional monitoring, assessment, corrective action programs, or other actions deemed appropriate as specified in the Corrective Actions/Risk Assessment Plan. Therefore, impacts to groundwater relative to the previous assessment of the proposed action documented in the October 2017 SEA are similar and minor.

No substantive changes in operation of the proposed PWBs are proposed relative to that considered for the selected alternative under the October 2017 SEA. As stated in the prior SEA, the main operational change to occur with the closure of the Main Ash Impoundment and the Stilling Pond is the onsite storm water and process wastewater operation that is currently treated and discharged from the Main Ash Impoundment and Stilling Pond. Re-routing of these waste streams would use onsite non-CCR impoundments and the lined process trench to enable proper handling and treatment of the waste streams. Mitigation measures, such as storm water BMPs and wastewater treatment would be implemented, as needed, to mitigate any pollutant discharge. The proposed emergency spillway of the PWB would not impact any surface water under normal operating conditions. Water release at the spillway would be for emergency purposes only.

The proposed repurposed PWBs are expected to maintain or improve the quality of water that would be discharged. Additionally, wastewater would be managed and treated in lined basin(s), thus eliminating any potential underseepage. Furthermore, mitigative measures would be introduced to ensure that discharge waters comply with NPDES permit limits and TDEC water quality criteria. Therefore, potential direct and indirect impacts of this alternative to surface waters would be negligible.

Implementation of Alternative C would have similar effects on groundwater and surface water as the original Closure-in-Place alternative described in Part II of the PEIS, and the October 2017 SEA, with an additional beneficial impact to groundwater resulting from the removal of CCR from the Stilling Pond. Additionally, process water would be managed and treated in lined

basin(s), which would prevent contact of non-CCR wastewater and storm water with groundwater.

Public and Intergovernmental Review

The 2018 Draft SEA was released for public review and a 20-day comment period on August 23, 2018. TVA received comments on the 2018 Draft SEA from TDEC, the Sierra Club, the United States Environmental Protection Agency (EPA), and two members of the public. TVA has considered the substantive comments it received on the 2018 Draft SEA and edited the revised Draft SEA as appropriate.

Subsequent to the public review period for the Draft SEA, TVA received results of additional studies of the composition of the materials in the Main Ash Impoundment that initiated the development of a new alternative for consideration in this SEA. Therefore, TVA posted a revised Draft SEA for a 20-day public review period on April 22, 2019. The availability of the revised Draft SEA was announced in local publications. TVA notified local, state, and federal agencies and federally recognized tribes of its availability through their required consultations.

TVA received comments on the revised Draft SEA from TDEC, EPA, the Anderson County Board of Commissioners, and one member of the public. The Sierra Club submitted a petition that was signed by 96 individuals, 36 of which added a personal comment. In addition, the Southern Environmental Law Center and five other environmental advocacy groups submitted a 10-page letter with hundreds of pages of attachments. The other groups were: Appalachian Voices, Southern Alliance for Clean Energy, Statewide Organizing for Community eMpowerment, Tennessee Chapter of the Sierra Club, and Tennessee Citizens for Wilderness Planning (collectively referred to as Environmental Advocacy Groups). TVA considered all of the substantive comments received on the Revised Draft SEA and has responded to them in the Final SEA.

Mitigation

BMPs would be used throughout the project to avoid or reduce potential impacts on environmental resources. TVA has identified the following BMPs that would be used to minimize impacts and restore areas disturbed during construction:

- Fugitive dust emissions from site preparation and construction will be controlled by wet suppression and BMPs (CAA Title V operating permit incorporates fugitive dust management conditions)
- Consistent with EO 13112, disturbed areas will be revegetated with native or non-native, non-invasive plant species to avoid the introduction or spread of invasive species

Mitigation measures identified in Parts I and II of the PEIS to avoid, minimize, or reduce adverse impacts to the environment are summarized below:

- TVA will implement supplemental groundwater mitigative measures that could include monitoring, assessment, or corrective action programs as mandated by state and federal requirements. The CCR Rule and state requirements provide an additional layer of groundwater protection to minimize risk.

Conclusion and Findings

Based on the findings in the SEA, TVA concludes that implementing Alternative C – Interim Cover of the Main Ash Impoundment and Repurposing a Portion for an Interim Process Water

Basin (Interim PWB2), Closure-by-Removal of the Stilling Pond and Repurposing into a Process Water Basin (PWB1), and Development of a Process Water Basin Emergency Spillway – would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



Lana D. Bean, Manager NEPA Program
Environmental Compliance & Operations
Tennessee Valley Authority

07/01/2019

Date Signed