

Document Type: SEA-Administrative Record
Index Field: Finding of No Significant Impact (FONSI)
Project Name: Flue Gas Desulfurization System at Kingston Fossil Plant
Project Number: 2017-28

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
FLUE GAS DESULFURIZATION SYSTEM AT KINGSTON FOSSIL PLANT
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
ROANE COUNTY, TENNESSEE

The Tennessee Valley Authority's (TVA) Kingston Fossil Plant (KIF) is a 1.7-gigawatt (GW) coal-burning power plant with nine generating units located in Harriman, Roane County, Tennessee, on the shore of Watts Bar Reservoir.

In 2006, TVA completed an Environmental Assessment (EA) and issued a Finding of No Significant Impact (FONSI) for the installation of flue gas desulfurization (scrubber) equipment at KIF to reduce sulfur dioxide (SO₂) emissions. The byproduct of this scrubber technology, gypsum, required the construction of a new landfill disposal facility. An on-site landfill location was chosen on the southern end of the KIF property.

Since 2006, TVA has completed two additional environmental reviews related to the disposal of materials in the onsite landfill. A 2010 EA and FONSI evaluated impacts related to the disposal of fly ash and gypsum, while a 2016 EA and FONSI evaluated the disposal of bottom ash.

The landfill was designed to be constructed in two phases. Phase 1 was constructed in 2015 and is approaching its full capacity. Phase 2 is needed to support the continued operation of KIF. This Supplemental EA (SEA) evaluated the environmental impacts of expanding the project area boundary analyzed in the 2006 EA to include laydown area, borrow area, a haul road, and associated stormwater management to support the construction of Phase 2 of the landfill.

Alternatives

In order to expand the boundary for the on-site landfill to support the continued operation of the landfill, TVA evaluated two potential alternatives in the SEA – the No Action Alternative and the Action Alternative.

Under the No Action Alternative, Alternative A, TVA would not expand the project area boundary analyzed in the 2006 EA of the on-site landfill at KIF. There would be insufficient laydown room to efficiently construct Phase 2 of the landfill. Suitable borrow material would come from an established, off-site source. Construction equipment and materials used to construct the landfill would be stored on other portions of the KIF property and commute to the landfill site during construction. Construction vehicles and equipment would commute to the landfill, and on and off-site repeatedly during construction. Temporary laydown areas could obstruct the path of working equipment, which would interfere with normal operating procedures.

Under the Action Alternative, Alternative B, TVA would expand the project area boundary analyzed in the 2006 EA of the on-site landfill to include the laydown area, the borrow areas, and a haul road. As part of this action, a new stormwater pond would be constructed within Phase 2 of the landfill for Cells 1 and 2 and an additional stormwater pond would be constructed within the proposed Borrow Area Option 2 on the peninsula, if necessary. Both of these stormwater ponds would be temporary and would be built to ensure compliance with NPDES permits during construction.

Laydown Area

The proposed laydown area was used as a borrow area for construction of Phase 1 of the landfill and therefore is mostly cleared with patches of undeveloped grass and wooded lands. Topsoil would be removed and stockpiled, and minimum grading would occur to ensure a level surface. Gravel would be applied to the surface after grading is complete. The laydown area would be used to store material necessary for construction of the landfill. These items generally include, but are not limited to, fuel tanks, mobile office facilities, conex storage units, construction equipment, building materials, and construction waste.

Borrow Area

Two options for borrow areas are being considered. Borrow Area Option 1 would utilize the area northeast of the permitted landfill in the area of the proposed laydown area. For Borrow Area Option 2 an approximate 21-acre area on the peninsula east of the landfill at the confluence of the Emory and Clinch Rivers would be developed. The borrow areas would provide soil which would be used to aid in the construction and operation of Phase 2 of the landfill. TVA plans to use the borrow areas as long as they contain usable borrow material, which may extend to future projects other than the construction of Phase 2 of the landfill. The area for Borrow Area Option 1 is described above and the area for Borrow Area Option 2 is currently undeveloped forest and former agricultural fields that are intermittently cleared. All vegetation would be removed and topsoil would be removed and stockpiled. A temporary stormwater facility would be constructed for the proposed Borrow Area Option 2. Borrow Area Option 2 would be accessed using one of two haul road options. Haul Road Option 1 would utilize the transmission line right-of-way for development of the road. This option was analyzed in the initial draft SEA in 2018. However, the width of the road was expanded to allow two haul trucks to pass. This area has been previously disturbed by the construction and operation of the existing overhead transmission line. Haul Road Option 2 would access the borrow area by constructing a new road through closed canopy forest. Either haul road option would require regrading and resurfacing to allow for off road vehicle traffic and stormwater drainage.

Impacts Assessment

Based on the analyses in the EA, TVA concludes that the implementation of Alternative B would not adversely affect groundwater quality, solid and hazardous waste, transportation, natural area and recreational resources, socioeconomics, environmental justice, prime farmland, and cultural resources. There would be short-term impacts to air quality, visual quality, noise, surface water, and aquatic resources. These short-term impacts would occur during construction. There would be long-term air quality and noise impacts from the extended use of the borrow area and operation of Phase 2 of the landfill, but they will not be significant. Operational activities would permanently alter views, but these activities would not substantially diminish the scenic value.

Leachate and stormwater runoff during the operation of Phase 2 of the landfill would occur, but these impacts would not be significant. Surface water withdrawal and thermal discharges would not change. There would be a permanent loss of wetlands from the construction of Phase 2 of the landfill and the haul road; however, there would be no net loss of wetlands. Wetland mitigation would ensure compliance with Executive Order 11990. While portions of the landfill are within the floodplain, the proposed action complies with Executive Order 11988. The stormwater facility will be located within the floodplain, but it will be designed to withstand flood impacts. No impacts to floodplains would occur from the development of the Borrow Areas or the haul road. Any excavation for the borrow areas will avoid floodplain areas. The construction and operation of Phase 2 will result in impacts to terrestrial wildlife and vegetation;

however, these impacts will not be significant. Vegetation will be removed from the borrow areas, but after their use the borrow areas will be replanted. No impacts to aquatic wildlife will occur. Removal of foraging and roosting habitat for endangered bat species will result from the construction of Phase 2 of the landfill and the development of the laydown area, borrow areas, and the haul road. TVA is committed to implementing specific conservation measures identified in TVA's Bat Strategy Project Assessment that was completed in consultation with the USFWS in April 2018 which will minimize impact to these species.

Alternative B meets the purpose and need of the project as it would allow TVA to expand the project area boundary for the on-site landfill at KIF for a laydown area, borrow areas, haul road, and associated stormwater management. Implementation of this alternative would adequately and effectively allow TVA to construct the second phase of the landfill, while not significantly affecting the environment.

Public and Intergovernmental Review

The Draft EA was released for public review and comment for 30 days beginning on February 14, 2018. TVA notified local, state, and federal agencies and federally recognized Native American tribes of its availability through their required consultations. After the initial public review, TVA considered an additional haul road and borrow area for the project. The Draft EA was revised to address the impacts related to the additional options. The Revised Draft EA was released for public review and comment for an additional 15 days beginning April 5, 2019.

Pursuant to Section 106 of the National Historic Preservation Act, TVA consulted with the Tennessee State Historic Preservation Officer (SHPO) requesting concurrence that the proposed action would have no effect on cultural resources. The SHPO concurred with this determination in a letter dated December 17, 2018.

Mitigation

Section 2.4 of the 2006 EA identified mitigation measures and best management practices (BMPs) associated with the alternatives evaluated in that analysis. Those mitigation measures and BMPs would continue to apply to any actions still ongoing with respect to that analysis. In addition, TVA would implement routine BMPs listed in the SEA to avoid or reduce minor adverse environmental effects from the construction of the projects as described in the SEA for Alternative B. Furthermore, TVA has identified the following non-routine mitigation measures to reduce potential impacts further:

Air Resources

In order to reduce vehicle emissions from the development of the laydown area, borrow area and haul road, TVA would ensure that all construction vehicles would be properly maintained, and not idle equipment when not in use and/or idling times would be kept to a minimum.

The following mitigation measures were described in the 2006 EA and would be employed during the construction and operation of Phase 2 of the landfill. Emissions from open construction areas and unpaved roads would be mitigated by spraying water on the roadways as needed to reduce fugitive dust emissions and other BMPs, as outlined in the Fugitive Dust Control Plan (required by KIF's Title V permit). TVA would use paved roads, wet suppression, and vacuum sweepers to reduce fugitive emissions from the operation of the landfill.

Visual Resources

Once the newly developed borrow areas have been exhausted of usable material, TVA would regrade and re-vegetate the area to minimize long-term visual impacts.

Noise

As described in the 2006 EA, in order to minimize potential impacts from noise, construction would typically take place during normal weekday/daytime hours; however, construction could occur during nights or weekends, if necessary to maintain schedule. This applies to both the proposed action and the construction and operation of Phase 2 of the landfill.

Surface Water and Wastewater

During construction of the laydown area, borrow areas, and haul road, appropriate BMPs would be implemented to ensure proper treatment of stormwater run-off before discharge from the site. Additionally, TVA would implement BMPs to control stormwater runoff from entering the Clinch and Emory Rivers during the operation of the borrow areas. All proposed project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollutants to the receiving waters would be minimized.

There is a possibility that a portion of both landfill phases would be open during the Phase 1 closure process. During this process, TVA would limit the open work area to minimize leachate generation. TVA would coordinate with state and federal agencies to maintain the NPDES permit conditions for site discharges. Mitigation methods, such as the use of waste water treatment or off-site disposal of leachate, could be implemented if impacts dictate they would be necessary.

The following mitigation measures were described in the 2006 EA and would be employed during the construction and operation of Phase 2 of the landfill.

- Stormwater flows from the landfill would be managed through the implementation of BMPs through the project SWPPP and site-specific operation and maintenance plans.
- Portable toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly owned wastewater treatment works that accepts pump out.
- Equipment washing, and dust control discharges would be handled in accordance with BMPs described in the SWPPP for water-only cleaning, and/or NPDES Permit TN 0005452.
- Hydrostatic Testing discharges would be handled in accordance with NPDES Permit TN0005452 or the TDEC General NPDES Permit for Discharges of Hydrostatic Test Water (TN670000).

Wetlands

In 2007, TVA restored approximately 19.5 acres of wetlands in the floodplain of Drowning Creek in Cumberland County, Tennessee. The restoration was performed as mitigation for wetland impacts from the initial development of the landfill at KIF. Impacts to wetlands at that time amounted to less area than the total mitigation project and therefore created a bank of credits for TVA's use as needed in the future for other unavoidable impacts to wetlands. Impacts to 0.91-acre of wetlands from the development of Phase 2 of the landfill would be mitigated via the use of credits at the Drowning Creek Mitigation Site.

TVA must obtain an Aquatic Resource Alteration Permit/CWA Section 401 Water Quality Certification from TDEC and a CWA Section 404 permit from USACE to authorize any impact to wetlands.

Floodplains

TVA will avoid excavation activities in the floodplain during the development of Borrow Area Option 2. In addition, the following measures would be employed:

- standard BMPs would be used during construction activities;
- the stormwater facility would be designed to withstand flooding with minimum damage; and
- any haul road construction would be conducted in such a manner that upstream flood elevations would not be increased.

To minimize adverse flood impacts, the toe of the Phase 2 landfill berm will be designed to withstand flooding to at least the 500-year flood elevation of 749.2 feet.

Threatened and Endangered Species

TVA will track and document removal of potentially suitable summer roost trees and include this information in annual reporting in accordance with Section 7(a)(2) consultation. Additionally, if removal of suitable bat roost tree habitat needs to be removed when bats may be present on the landscape, TVA would set aside funding to be applied towards future bat-specific conservation projects. TVA currently plans to conduct the tree removal between October 15 and March 31, when Indiana and northern long-eared bats are not on the landscape. This would avoid any potential direct impact to juvenile bats at a time when they are unable to fly.

A number of activities associated with the proposed project were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) and completed in April 2018. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified in TVA's Bat Strategy Project Assessment.

Conclusion and Findings

Based on the findings in the SEA, TVA concludes that implementing Alternative B – Action Alternative to include a laydown area, Borrow Area Options 1 and 2, Haul Road Option 1, and associated stormwater management; would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



Susan R. Jacks, General Manager
Federally Mandated Environmental
Compliance
Environmental Compliance & Operations
Tennessee Valley Authority



Date Signed