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FINDING OF NO SIGNIFICANT IMPACT

TENNESSEE VALLEY AUTHORITY

CONSTRUCTION AND OPERATION OF BENEFICIATION PROCESSING FACILITIES
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
ALABAMA, KENTUCKY, AND TENNESSEE

The Tennessee Valley Authority (TVA) is considering constructing coal combustion residual (CCR) beneficiation processing facilities (BPF) at ten former and existing TVA coal-fired power plant sites (coal plants) within the TVA Power Service Area (PSA). TVA has prepared a Programmatic Environmental Assessment (PEA), pursuant to the National Environmental Policy Act (NEPA), to programmatically assess the effects of construction and operation of BPFs at one or more TVA coal plants. The PEA serves as a bounding analysis of the potential environmental impacts of the construction and operation of CCR BPFs at TVA coal plants. As part of this programmatic assessment, TVA developed new guidance, including an Environmental Screening Checklist, that complies with NEPA's procedural requirements, up to and including potential site-specific considerations of BPFs at these coal plants.

Approximately 236 million tons of CCR are currently stored at TVA coal plants and are potentially available for reuse. Historic CCR stored on site at the plants, in addition to unsold CCR that do not meet known commercial or industry specifications for reuse (e.g., fly ash with high residual carbon content), have potential to be marketed by TVA for beneficial reuse under known commercial use applications, if appropriately processed. This additional source of marketable CCR would allow TVA to continue supplying vendors with raw materials while reducing the required storage in on-site landfills and continuing to support the manufacturing of construction materials across the region.

By programmatically evaluating the bounded potential effects of considered BPFs at coal plants, TVA intends to streamline the review of site-specific BPFs at coal plants across the TVA PSA. This bounding analysis would establish the analytical framework for the development of an Environmental Screening Checklist, such that future evaluation of site-specific potential environmental effects is within the bounded parameters considered in the PEA, prior to TVA making any decision to construct and operate an individual CCR BPF at a specific TVA coal plant.

Alternatives

To support TVA's need to optimize management and marketing of CCR in an environmentally acceptable manner, TVA assessed two Alternatives in the PEA:

- **Alternative A – No Action Alternative.** TVA would not establish a program to programmatically review, construct, and operate CCR BPFs at TVA coal plants. TVA would continue to market CCR that meets commercial and industry specifications for beneficial reuse without processing and would continue to store remaining CCR in an environmentally acceptable manner consistent with all applicable regulations and permit requirements.

- **Alternative B – Construction and Operation of CCR Beneficiation Processing Facilities.** Under Alternative B, TVA would establish a program to programmatically review the construction and operation of CCR BPFs through implementation of an Environmental Screening Checklist. The Environmental Screening Checklist would be used to evaluate the location and physical characteristics of the proposed project, document potential environmental and social impacts, determine applicable permits required, and determine whether construction and operation of the facility would be bounded by the parameters outlined in the PEA.

Under Alternative B, two types of CCR BPFs are being considered in the programmatic Environmental Screening Checklist: thermal and nonthermal. The facilities would consist of three primary areas including: raw CCR material storage; a process island; and product storage and load out. Main processing steps for both facilities include: (1) initial receiving of raw CCR material; (2) drying; (3) size separation; (4) grinding; and (5) post processing storage. The thermal BPFs also include a carbon reduction step prior to post processing.

Either facility would require approximately 15 acres of land at a previously disturbed coal plant site for construction and operation, which would include temporary laydown areas for parking and equipment and material storage. Major facility elements include a control room, small lab, maintenance area, employee parking, storage domes, storage silos, and any required office space. Electrical transmission upgrades and addition of gas-supply lines would likely be needed at each facility. Only one facility type would be constructed at selected TVA coal sites, depending on need.

Once the CCR material is processed through either the thermal or nonthermal BPF, the processed material would be stored on-site in silos or storage domes. Once purchased, the processed material would be loaded into customers' bulk pneumatic tanker trucks for transport to market. At this point, TVA would no longer maintain ownership and control of the processed CCR. Potential uses of processed and sold CCR that pass through a given BPF were not part of TVA's action and were not considered in the PEA. CCR marketing and approved uses have been covered under previous environmental reviews.

Environmentally Preferable Alternative and TVA's Preferred Alternative

In the short term, Alternative A – No Action causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources at the potential project site(s). However, the No Action Alternative does not meet the purpose and need for TVA to optimize the reuse of CCR currently produced and stored at TVA coal plants. Alternative B – Construction and Operation of CCR BPFs would allow for development of capabilities to beneficially reuse a majority of CCR currently stored at TVA coal plant sites. Under this alternative, there would be a long-term beneficial impact associated with CCR going to a BPF as compared to being stored in an on-site impoundment or landfill. In addition, beneficial use of CCR can produce positive environmental benefits such as reduced use of virgin resources and lower greenhouse gas (GHG) emissions. Therefore, over the long term, Alternative B would be the environmentally preferable alternative.

Alternative B is also TVA's preferred Alternative. By pursuing a programmatic Environmental Screening Checklist, TVA can efficiently pursue programmatic review of these similarly situated environmental effects, continue to optimize management of CCR, and support TVA's effort to market CCR in an environmentally acceptable manner.

Impacts Assessment

At this time, site-specific designs at each of the potential locations are conceptual; however, any construction and operational impacts are bounded by values established in Tables 2-1 and 2-2 in the PEA.

TVA would consider the conditions of each coal plant site when reviewing the construction and operation of any potential BPF to determine whether it is appropriate to tier from the PEA. TVA would evaluate each proposed project during the Environmental Review Checklist screening process. If TVA determines that no sensitive resources are present at the proposed BPF site or there is no potential for significant effects to sensitive resources, the findings of the PEA with respect to NEPA compliance would apply. Conversely, if TVA determines that the proposed BPF project impacts sensitive resources beyond the bounded values assessed in the PEA, the proposed project would be subject to a site-specific environmental review consistent with TVA NEPA procedures.

Based on the bounding analyses in the PEA, TVA concluded that implementation of Alternative B would impose localized, minor adverse effects to air quality; climate change and GHGs; geology and soils; water resources (groundwater, surface water, and aquatic ecology); vegetation; wildlife; wetlands; visual resources; natural areas, parks and recreation; transportation; noise; solid waste; and public health and safety – most of which would be temporary. Implementation of Alternative B would not impact land use, prime farmland, or floodplains. Significant impacts are not expected for cultural and historic resources. Additionally, Alternative B would result in beneficial impacts to socioeconomic resources during the construction and operational phases, as well as beneficial long-term impacts to solid waste disposal during the operation phase.

Construction of CCR BPFs would temporarily increase the production of fugitive dust, vehicle emissions, noise emissions, traffic, disturbed sediments, and solid waste. Fugitive dust would result in minor, localized impacts to air quality but would not exceed applicable air quality standards. Managed, natural, and recreation areas in the vicinity of a CCR BPF site may also experience indirect impacts. However, construction impacts would be temporary (up to 18 months) and would be minimized through use of best management practices (BMPs) (e.g., dust control measures) as required to reduce off-site emissions.

During operation, direct impacts to managed, natural, and recreation areas would be minor and limited to areas directly adjacent or in proximity (within 0.1 miles) of a project area. Emissions from transport vehicles would be negligible in comparison to regional emissions and would not impact global climate change. Air emissions during operation of the BPFs would comply with all applicable standards, as well as any additional requirements established by state and local regulations. Construction and operation of the proposed BPFs and associated infrastructure are subject to permitting programs that regulate the construction of new stationary sources of air pollution.

During operation, exhaust gases from the thermal process would be sent to a sulfur dioxide (SO_2) scrubber to meet air permit limitations, as applicable. The nonthermal BPF generates minimal carbon dioxide (CO_2) and SO_2 emissions from the combustion of natural gas in the drying process. Additionally, offsite air quality impacts would be minimized for both processes by using enclosed, pneumatic trucks that are properly maintained. Therefore, the volume of off-site trucking would be expected to result in only minor increases in local pollutant emissions and would not be expected to adversely affect regional air quality. The operation of the BPFs would be in compliance with Prevention of Significant Deterioration requirements, which ensures there

is no significant impact to, or deterioration of, air quality due to the proposed action. Thus, operation of BPFs at existing and former TVA coal plants would increase local air emissions; however, they would not exceed permit limits or air quality standards.

Annual GHG emission contributions from a BPF under Alternative B would be negligible relative to regional GHG levels and potential effects on climate change. GHG emissions from the proposed action, as well as the emissions from the other reasonably foreseeable future actions, would incrementally increase GHG emissions near the project area, but such increases would not be notable on a regional, national, or global scale. As such, impacts from Alternative B on climate change and GHG emissions would be minor.

Noise from construction would be minor and within U.S. Department of Housing and Urban Development (HUD)-established limits. During operation, major structures and components of the CCR BPF facilities would not exceed 65 dBA at the property boundary, consistent with the HUD guidelines and within generally acceptable noise levels for residential, commercial, industrial, and other compatible uses. In addition, transport of unprocessed CCR would be confined to the TVA reservation and would therefore not increase traffic on public roads. However, during construction there would be an increase in traffic on public roads from the construction workforce and construction-related equipment being transported to the proposed site. This additional construction-related traffic would also increase noise and fugitive dust in areas proximate to these roads. Emissions from construction equipment are minimized through implementation of BMPs including proper maintenance of construction equipment and vehicles. Additionally, there would be a minor to moderate increase in traffic on public roadways during operation due to processed CCR materials being transported off site.

Solid and hazardous wastes generated during construction and operation would be managed in accordance with standard procedures for spill prevention and cleanup and waste management protocols in accordance with pertinent federal, state and local requirements. During operation, generation of regulated hazardous wastes is not expected; however, any regulated hazardous waste that may be generated would be managed in accordance with Resource Conservation and Recovery Act (RCRA) requirements. Solid wastes from production processes at the facility and delivery of processed CCR product are expected to be minor.

The CCR BPFs and support systems would be constructed at existing and former TVA coal plants – sites that are heavily disturbed and comprised largely of fill material from past disturbances. Construction activities would require above-ground disturbances that may indirectly alter small tributaries and ephemeral drainages, potentially affecting aquatic habitats, and they may require below-ground disturbances that may encounter groundwater. These disturbance activities would be localized and limited to the construction phase of the proposed project, and any potential direct impacts would be permitted and mitigated. Therefore, any impacts to water resources and aquatic habitats would be minor.

Due to the relatively small project footprints (approximately 15 acres per site) and the location of proposed facilities in areas of existing developed and industrial land uses, impacts to soils, wetlands, vegetation, and wildlife would be minor. Footprints for major facility elements such as the control room, small lab, maintenance area, employee parking, storage domes, storage silos, and any required office space are likely to be built on previously developed pavement, gravel, or mowed lawn. No land use changes would occur under Alternative B. Soil disturbances would be minor and mitigated with appropriate BMPs. Major facility elements, including temporary laydown areas, would be constructed outside the FEMA-mapped 100-year floodplain and above the 100-year flood elevation, if available. Transport of raw CCR materials and processed CCR

would be along established roads. Consequently, there would be no direct impact to floodplains, land use, or prime farmland soils associated with Alternative B.

Nearly all terrestrial areas within the proposed study area are unvegetated operational zones or mowed lawns. These sparsely vegetated areas are dominated by non-native species and do not support natural or protected plant communities. Similarly, only common wildlife communities are likely in these disturbed areas, so impacts to wildlife are expected to be minor. If potential habitat for rare or protected species is identified within the project area, and if TVA determines there is potential to adversely affect listed species, avoidance, minimization, and conservation measures to eliminate the potential for adverse impacts would be developed and implemented. Based on the bounding attributes identified in Table 2-2 of the PEA, construction and operation of proposed BPFs on previously disturbed TVA coal plant sites would not impact threatened or endangered species or their critical habitats.

Long-term beneficial impacts include solid wastes being processed for beneficial reuse as opposed to being disposed of in an on-site landfill, as well as enhanced long-term productivity of the land that previously stored the solid waste that was beneficially processed.

Past, present, and reasonably foreseeable future actions identified within the geographic areas of analysis include actions related to construction and operation of a BPF at one or more of the 10 TVA coal plants evaluated in the PEA. Those TVA actions potentially applicable to the proposed action include development and maintenance of transmission infrastructure, development of future energy generating assets in accordance with the TVA Integrated Resource Plan (IRP) and continued operations, including CCR management, at operating and retired coal plants.

Public and Intergovernmental Review

The Draft PEA was released for a 30-day public comment period on April 14, 2025. To solicit public input, the availability of the Draft PEA was announced in regional and local newspapers and shared by TVA regional communicators on social media accounts. A media advisory was issued. The Draft PEA was posted on TVA's website, and hard copies were made available by request. TVA's agency involvement included sending notices to local, state, and federal agencies and federally recognized tribes to inform them of the availability of the Draft PEA. Comments on the Draft PEA were accepted via mail, email, and the online comment system through May 14, 2025.

TVA received a total of 22 comment submissions, including one from TDEC, one from the Sierra Club, and the remainder from industry officials or members of the public. In response to comments, TVA has revised text within the Final PEA and the Environmental Screening Checklist and has included a response to comments in Appendix B of the PEA. All comments were considered in preparation of the Final PEA.

Bounded Best Management Practices, Environmental Commitments, and Mitigation Measures

TVA would implement the following bounded BMPs, environmental commitments, and mitigation measures described in the PEA to avoid or reduce the potential for adverse environmental effects during the construction and operation of the proposed BPF facilities at one or more TVA coal plants. Additionally, based on the completion of site-specific designs, TVA will review each project location to ensure that the bounding attributes and resource characteristics at each location are consistent with the bounding values contained in the PEA. Should site-specific

conditions and potential effects exceed the bounding values, TVA will perform a site-specific NEPA review as needed to encompass the additional scope.

TVA has identified the following BMPs that could be used to minimize impacts and restore areas disturbed during project activities; these are bounding BMPs, and would be employed on an as needed basis at any given site:

- Fugitive dust emissions from site preparation, construction, and operations would be controlled by wet suppression and other BMPs (Clean Air Act Title V operating permit incorporates fugitive dust management conditions).
- Erosion and sedimentation control BMPs (e.g., silt fences, truck washes) would be used to ensure surface waters and wetlands are protected from construction impacts.
- Consistent with Executive Order (EO) 13112, disturbed areas would be revegetated with native or non-native, non-invasive plant species to avoid the introduction or spread of invasive species.
- BMPs in accordance with TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* would be used during construction activities to minimize and restore areas disturbed during construction.
- BMPs that may be implemented to help minimize impacts to bat species would include standards for noise during construction, human presence guidance, tree removal, sedimentation, spills, pollutants and contaminants, lighting, and bat species monitoring.
- TVA would manage all solid wastes generated in accordance with applicable state regulations and following procedures outlined in TVA's current Environmental Procedures and applicable BMPs.
- Construction and laydown areas would be located outside 100-year floodplains as delineated on Federal Emergency Management Agency flood insurance rate maps and/or on contour maps showing known 100-year flood elevations.
- Appropriate spill prevention, containment, and disposal requirements for hazardous wastes would be implemented to protect construction workers, the public, and the environment in accordance with applicable state and federal regulations.
- Equipment refueling and maintenance operations would be conducted at designated locations using applicable BMPs.
- Construction would include customary industrial safety standards, applicable BMPs, and jobsite safety plans to maintain worker and public safety.

As part of its site-specific screening process, TVA would employ the following mitigation measures, as needed, at any given coal plant site:

- TVA would determine if a proposed facility has wetlands present and if there would be potential adverse effects to jurisdictional and non-jurisdictional wetlands. Wetlands would be preferentially avoided during construction. Any potential unavoidable wetland impacts would be mitigated under regulations implementing Sections 401 and 404 of the Clean Water Act, applicable state regulations, and Executive Order 11990.

- If forested land is present at a proposed site, surveys would be conducted to determine suitability of summer roosting habitat for federally listed bats. Although disturbance of existing buildings or bridges would be avoided as possible, surveys of these structures also would be conducted to ensure that bats are not using them for roosting prior to disturbance. Sites with presence of suitable summer roosting habitat, and for which the removal of such habitat would not be avoidable, may be subject to seasonal surveys to determine bat presence prior to construction actions.
- Potential impacts to bats and other sensitive species would be avoided by observing seasonal restrictions on clearing of suitable roost trees and avoiding impacts to caves, water bodies, sinkholes, buildings, and bridges.
- Under the bounding condition, project activities would comply with the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and Endangered Species Act. Construction activities would be at least 660 feet away from any known protected species nests.
- TVA would initiate consultation with the State Historic Preservation Office (SHPO) and tribes to determine the area of potential effect (APE), identify historic properties in the APE, and assess the potential effects of the proposed action on any National Register of Historic Places (NRHP)-listed or -eligible properties in the APE. TVA would complete any needed historic architectural surveys, assess potential adverse effects to any identified NRHP-listed or -eligible historic architectural properties, and seek ways to avoid such adverse effects, in consultation with the appropriate SHPO and tribes as project plans are developed. Should avoidance of adverse effects on historic properties prove to be infeasible, TVA would work with the appropriate consulting parties to develop a Memorandum of Agreement (MOA) for the resolution of the adverse effects, pursuant to § 800.6(b)(1).
- TVA would consider visual impacts and possible mitigation measures such as vegetative screening as appropriate during site-specific reviews.

Conclusion and Findings

Based on the findings in the PEA, TVA concludes that implementing Alternative B – Construction and Operation of CCR BPFs at one or more existing and former TVA coal plants within the TVA PSA would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

August 14, 2025

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Date Signed