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DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

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Via Electronic Mail to wdwhite0@tva.gov

Attn: W. Douglas White, NEPA Specialist
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11B
Knoxville, TN 37902

Dear Mr. White:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) *Draft Environmental Assessment* (EA) to evaluate the closure of the Johnsonville Fossil Plant (JOF) coal yard and coal yard runoff pond¹, construction and operation of a process water basin for the Johnsonville Combustion Turbine (JCT) plant site, and development of a borrow site to facilitate closure of the coal yard and coal yard runoff pond, as well as to support other proposed projects currently being evaluated under separate reviews.² TVA's purpose for considering closure activities and construction and operation of a process water basin at JOF is because there is no longer a need for coal at JOF, since TVA has retired all coal-fired units at the site.

Actions considered in detail within the Draft EA include:

- **Alternative A – No Action Alternative.** Under the No Action Alternative, TVA would not proceed with closure of the coal yard and coal yard runoff pond, construction of a process water basin, or development of a borrow site on TVA-owned property. There would be no change to the environmental conditions of these respective sites. TVA would continue to secure and maintain the coal yard and coal yard runoff

¹ The coal yard, the coal yard runoff pond and west peninsula are contained within an approximately 64-acre project area (Figure 1-1). During the first few years of plant operation, coal ash was sluiced into the north end of the coal yard to raise the grade to match the south end of the coal yard. Current estimates indicate that approximately 600,000 cubic yards (yd³) of coal combustion residuals (CCR), are located under the northern half of the coal yard. Additionally, in the early 1990s, fill consisting of bottom ash and spent-bed material (bottom ash mixed with lime) was placed in the southern half of the coal yard to construct a stabilized surface to support heavy equipment operation and coal piles as part of a coal yard resurfacing project. A July 2017 sampling report indicated the presence of extractable petroleum hydrocarbons in stockpiled soil located at the coal yard. A remediation project was completed in the summer of 2017 to remove and dispose of the affected soils (Stantec 2017).

² Because of the historic presence of CCR in the coal yard project area, closure of the coal yard must comply with the August 2015 Administrative Order entered by the Tennessee Department of Environment and Conservation (TDEC) (OGC15-0177) which requires that TVA evaluate and remediate, if necessary, CCR risks at its plants in Tennessee. The administrative order, as well as other environmental regulatory programs, helps ensure that CCR management activities at TVA's facilities will continue to be protective of human health and the environment. The execution of the requirements of the TDEC Order, with respect to the underlying CCR, will necessarily drive the decision on closure methodology as well as potential corrective measures.

pond to ensure they do not degrade over time. According to TVA, the No Action Alternative is not reasonable as it would not meet the project purpose and need, which is to close the coal yard and coal yard runoff pond because they are no longer needed. In addition, implementation of the No Action Alternative would not provide a means for TVA to manage stormwater and process water or provide borrow material to support planned and future projects at JOF and the JCT. However, the No Action Alternative sets a baseline for comparison of Alternatives B, C and D.

- **Alternative B – Coal Yard Material Consolidation and Cap Closure** . Under this Alternative, TVA would close the coal yard and coal yard runoff pond, construct a process water basin and develop a borrow site. Closure of the coal yard and coal yard runoff pond would all occur within the approximately 64-acre coal yard project area that includes the coal yard, coal yard runoff pond and west peninsula. Three options for the construction of the process water basin are being considered. Two potential locations would be within the coal yard project area as previously described and the other would be in the north rail loop project area. Each of these actions is described below.

TVA has identified an approximately 7.7-acre area southeast of the north rail loop on JOF property that would be used for staging of vehicles, equipment, and materials during construction. The laydown area is a previously disturbed undeveloped site. Upon completion of construction activities, it is anticipated that this area would be restored to its previous state.

- **Coal Yard** – Closure of the coal yard includes the removal of approximately 24,000 yd³ of unburned coal and 20,000 yd³ of sediment from the coal yard runoff pond that is stockpiled on the coal yard. This material would be transported to the nearest landfill that can accept this material and has the capacity to do so, which TVA has determined at this time is the West Camden Sanitary Landfill. Coal would be transported to the landfill by over-the-road dump trucks primarily utilizing existing roadways along the approximately 12-mile (24-mile round trip) haul route. Based on the estimated volume of material to be removed and the use of over-the-road dump trucks (capacity of 15 yd³), the transport of all of the unburned coal and sediment excavated from the coal yard runoff pond that is stockpiled on the coal yard to the landfill would entail the use of approximately 90 truckloads (180 truck trips) per day operating approximately 5 days per week for a period of approximately 1.5 months.

Alternatively, TVA could also elect to consider implementing a turn-key reclamation process to recover the maximum amount of reusable fuel remaining in the coal stockpile. TVA estimates that this process would allow the reuse of approximately 70 to 90 percent of available material. The reclamation process could trigger added permitting requirements and modification to the site Title V Air Permit. The reclamation process is a five-step process which includes:

1. *Collection* – The raw material would be compiled using heavy equipment such as bulldozers, excavators, and trucks.
2. *Screening/Sizing* – Mobile screening equipment (powered by one 250-kilowatt diesel generator) would be used to sort the raw material into useable fuel and waste material.
3. *Separation* – Material ¼ inch to 2 inches in size would be separated into useable fuel or aggregate material. The separation process uses water cycling in a closed circuit. The process requires approximately 600 to 800 gallons per minute (gpm). One or two 6-inch diesel pumps

would pump water from the coal yard runoff pond into the closed system for the separation process. The water would later be returned to the coal yard runoff pond at a similar rate.

4. *Loading* – The useable coal is loaded onto trucks for delivery to another TVA facility. The waste material and leftover aggregate material would be hauled to an offsite, permitted landfill for disposal.

5. *Grading* – The coal yard would be graded to ensure proper drainage.

- **Coal Yard Runoff Pond Closure** – Closure of the coal yard runoff pond would include the following:
 - Dewatering of the coal yard runoff pond
 - Removal of pumps, pipes, platforms, and mechanical equipment
 - Excavation of sediment from the bottom of the pond and the perimeter ditch and stockpiling the sediments in the coal yard to be transported to the offsite landfill as described above
 - Construction of a stormwater outfall structure and discharge pipe to the Tennessee River (Kentucky Reservoir), subject to completion of National Pollution Discharge Elimination System (NPDES) permitting
 - Placement of a minimum of 6 inches of cover soil and establishing vegetation on areas of bare soil within the coal yard runoff pond

- **Process Water Basin Construction** – TVA would construct a process water basin to manage non-CCR process water and stormwater from the CT plant site and makeup water from the existing wastewater treatment plant. TVA is considering three possible locations for the proposed process water basin. Location 1 is within the footprint of the coal yard runoff pond and could be constructed prior to closing both the coal yard runoff pond and the coal yard. Process water basin Location 2 is on the south side of the coal yard in the area that would be excavated for consolidation. Consequently, if constructed in this location, the process water basin would be constructed after the coal yard is closed, but the coal yard runoff pond could remain in operation during construction of the process water basin. Both potential locations would be contained within the limits of the coal yard project area, and therefore, the environmental impacts would be expected to be similar for both locations and are analyzed concurrently.

Location 3 is located to the southeast of the coal yard in the north rail loop project area. The north rail loop project area is previously disturbed. In order to construct the process water basin in this location, TVA would need to remove approximately 10,000 cubic yards of concrete construction debris to an onsite or offsite location to be determined at a later date. In any location, the process water basin would consist of two basins that would be lined with an approved liner system. One basin would collect effluent from the JCT's oil water separator and the water treatment plant. The second basin would be idle. The process flows would be diverted to the second basin when the first basin requires sediment removal. Effluent would reach the process water basin either by gravity drain or pumps and ultimately be discharged through a newly constructed and permitted NPDES outfall to the Tennessee River (Kentucky Reservoir).

- **Borrow Site Development** – TVA conducted a study to identify potential borrow sites to support closure activities at JOF (Stantec 2016). This study evaluated potential new borrow sites as well as existing commercial sites. In addition, TVA investigated obtaining borrow material from a commercial landfill project located 10 miles from JOF as part of this study.

Eight parcels of land that met the initial size requirements estimated to be needed to provide borrow material to support activities at JOF were identified within a 3-mile radius of JOF. Initially, three sites were identified as most favorable for borrow site development as they were closest to JOF, had sufficient borrow capacity to meet plant needs, and contained TVA transmission line easements that allow for minimization of tree clearing. Additional evaluation indicated that two of these sites were in private ownership and had adverse site conditions including topography and onsite drainage features; hence, they were unsuitable and were dropped from further consideration.

Two offsite commercial properties were also considered by TVA. One of the sites was not open at the time of the study, and the other site did not have sufficient volume available. Viability of the use of borrow material from a commercial landfill project was also considered and dismissed due to distance from JOF and uncertainty regarding availability of soil. Therefore, a reliable supply of suitable soil may not be available when needed at JOF.

TVA considered these factors and determined that the development of a borrow area on TVA property is preferred. Although this option would result in impacts to the environment as a result of development of the borrow site as identified in the EA, these impacts would be minor. This option would minimize transport distance and use of public roadways, thus decreasing the long-term impacts associated with air emissions, increased traffic and associated safety risks, and disruptions to the public that would be associated with transport of borrow from sources further from JOF. In addition, the use of borrow from TVA-owned property optimizes the use of TVA resources and minimizes cost.

In consideration of the above factors, TVA has identified as the preferred location an approximately 165-acre borrow site on TVA-owned property approximately 1.8 miles south of JOF. Within the borrow site limits, two sub areas (Areas B and C) totaling approximately 44 acres would be disturbed and TVA would construct a gravel access road at grade to reach these areas. Preliminary estimates indicate that a sufficient quantity of suitable soil could be obtained from the excavation areas within the borrow site; accordingly, these 44 acres would be analyzed in this EA. TVA has also identified a third excavation area within the limits of the 165-acre borrow site that may be developed for future use. However, development of this third area in the future would be analyzed under a separate NEPA Review.³

- **Alternative C – Coal Yard Full Cap Closure.** Under Alternative C, closure of the coal yard runoff pond, construction of the process water basin, and borrow site development would be the same as described under Alternative B. As with Alternative B, TVA would transport the unburned coal and sediment excavated from the coal yard runoff pond that is stockpiled on the coal yard to the West Camden

³ Soil excavation would involve the use of heavy equipment, including bulldozers, backhoes, excavators, and over-the-road dump trucks. TVA would remove vegetation, including approximately 51 acres of forested lands within the proposed excavation areas. Any marketable timber would be salvaged where feasible; otherwise, woody debris and other vegetation may be disposed onsite through open burning, mulching or sent offsite to an approved solid waste facility for disposal. TVA would adhere to all appropriate state and county regulatory requirements if burning of landscape waste is conducted.

Sanitary Landfill for disposal. Alternatively, TVA could again elect to implement the turn-key reclamation process to recover the maximum amount of reusable fuel inside the coal yard. However, under Alternative C, TVA proposes to cap the coal yard in its current footprint with a protective/vegetative soil layer or a turf system which consists of an engineered turf and sand fill. The area would be graded for proper drainage. Stormwater would be routed to a new outfall to the Tennessee River (Kentucky Reservoir), subject to completion of NPDES permitting. The closure system would be in compliance with all applicable TDEC regulations and guidance. Because the full extent of the coal yard would be capped under this alternative, TVA determined that for this alternative, the process water basin would be constructed in Location 1 (within the footprint of the coal yard runoff pond) or Location 3 (north rail loop project area).

- **Alternative D – Coal Yard Remove Material and Close.** Under Alternative D, removal of the unburned coal and sediment excavated from the coal yard runoff pond that is stockpiled on the coal yard, closure of the coal yard runoff pond, and borrow site activities would be the same as described under Alternatives B and C. Similar to Alternative B, under this alternative the process water basin could be constructed in Location 1 or 2 (within the footprint of the coal yard runoff pond or the footprint of the coal yard) or in Location 3 (the north rail loop).

Under this alternative, closure of the coal yard would include the excavation of all coal remnants and underlying CCR including bottom ash/spent-bed material fill within the extent of the current footprint. Once the coal yard material is removed, the site would be graded for proper drainage and reseeded with vegetation on areas of bare soil. Stormwater would be routed to a new outfall to the Tennessee River (Kentucky Reservoir).

TVA estimates that in addition to the removal of the stockpile of unburned coal and sediment excavated from the coal yard runoff pond as described above, under Alternative D approximately 600,000 yd³ of material from the coal yard would be excavated and transported to the West Camden Sanitary Landfill using over-the-road dump trucks (capacity of 15 yd³). Based on the estimate of the volume of coal remnants and underlying CCR including bottom ash/spent-bed material fill that would be excavated from the coal yard, closure would require approximately 90 truckloads (180 truck trips) per day, five days a week, for a period of roughly 20 months (1.7 years).

TDEC has reviewed the Draft EA and has the following comments regarding the proposed action and its alternative:

Cultural and Natural Resources

TDEC believes the Draft EA adequately addresses potential impacts to cultural and natural resources within the proposed project area.⁴

⁴ This is a state-level review only and cannot be substituted for a federal agency Section 106 review/response. Additionally, a court order from Chancery Court must be obtained prior to the removal of any human graves. If human remains are encountered or accidentally uncovered by earthmoving activities, all activity within the immediate area must cease. The county coroner or medical examiner, a local law enforcement agency, and the state archaeologist's office should be notified at once (Tennessee Code Annotated 11-6-107d).

Air Resources

Based on the scope of the temporary coal reclamation process, including recovery, washing, crushing and sizing of coal, it is likely that air permitting will be required, and the process has potential for small amounts of particulate emissions during the processing of the residual usable coal. TDEC recommends TVA include these considerations in the Final EA.

As TVA notes in the Draft EA, the proposed project will likely require modifications to the facility's existing Title V major source air permit for both the possible generation of fugitive dust on-site during the proposed closure project and to allow for the installation of a temporary coal recovery, cleaning and sizing process on-site.

Solid Waste

On page 26 of the Draft EA, the document discusses use of an approved cover system that incorporates "geomembrane liner and cover consisting of either protective/vegetative soil or a turf system which consists of an engineered turf and sand fill." However, the document does not detail the specific approval process that TVA will go through to obtain approval of the cover system. TDEC recommends that the Final EA provide more detail on the approval process that TVA will utilize to seek an approval for the cover system.

Water Resources

TVA notes that there is the potential that a construction stormwater general permit (CGP) will be required, including a Stormwater Pollution Prevention Plan (SWPPP), as well as a new or modified NPDES permit, a Tennessee Stormwater Multi-Sector General Permit for Industrial Activities (TMSP) and an Aquatic Resource Alteration Permit (ARAP). These permits (new or modified) and the SWPPP will all be necessary for the project. Since the closure of the coal yard will involve the removal and possibly capping of CCR materials, the closure will have to be in compliance with the current TDEC Commissioner's Order. TDEC recommends that TVA include these considerations in the Final EA.⁵

The primary Water Resources considerations will involve the effects of each proposal on groundwater (and seepage into the Tennessee River), and surface discharges, including potentially contaminated stormwater discharges. From an ARAP perspective, the borrow areas will be a focus. TVA will need to have all of the stream and wetland delineations reviewed and approved by DWR. They will need to provide more details on alternative analysis specific to minimizing wetland impacts when applying for ARAP permit. TDEC recommends TVA include these considerations in the Final EA.

It should be noted that TVA may choose to pursue CCR impoundment closure-in-place at any of its Fossil Plants. However, should TVA begin CCR surface impoundment closures at any of its Tennessee Fossil Plants and TDEC subsequently determines based on soil, surface water, ground water and/or geologic instability that closure in place is not protective of public health and/or the environment, then TDEC shall, in accordance with the Commissioner's Order, require TVA to commence appropriate corrective action including removal of CCR surface impoundments where TVA has begun or completed closure-in-place. Further, TVA is on notice that Tennessee Code Annotated Section 68-211-106(j) may require a permit or other approval from TDEC for the disposal or use of coal ash.

⁵ For more information on TDEC Division of Water Resources permits, please visit <https://www.tn.gov/environment/permit-permits/water-permits.html>.

Regarding the removal of the existing unburned coal in the coal yard for either landfill disposal or use at another facility, TDEC supports any and all actions that will reclaim materials in a manner that would be protective of human health and environment and present itself as a financially viable option. TDEC appreciates the opportunity to comment on this Draft EA. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives, nor should they be interpreted as an indication regarding future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.

Sincerely,



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