



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

ROBERT J. MARTINEAU, JR.
COMMISSIONER

BILL HASLAM
GOVERNOR

April 24, 2017

Via Electronic Submittal at TVA.gov

Attn: Ashley Farless, NEPA Compliance Specialist

Tennessee Valley Authority

1101 Market St., BR4A

Chattanooga, TN 37402

Dear Ms. Farless:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) *Gallatin Fossil Plant (GAF) Bottom Ash Process Dewatering Facility* Draft Environmental Assessment (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. TDEC's comments are also being provided independent of any ongoing litigation regarding this site. TVA is proposing to construct a bottom ash process dewatering facility at GAF, which TVA believes would enable dry storage of bottom ash and further foster TVA's compliance with present and future regulatory requirements related to coal combustion residuals (CCR) production and management. TVA's preferred alternative is Alternative C which enables a wet-to-dry bottom ash conversion that fully complies with the Effluent Limitations Guidelines (ELG) requirements.

Actions considered in detail within the Draft EA include¹:

- **Alternative A – No Action Alternative.** The No Action Alternative results in TVA not constructing the process dewatering facility. Bottom ash would continue to be wet-sluciced to the ash impoundments where it would settle out of the sluice water. After settling, the bottom ash would be dug up out of the impoundments and allowed to dry in piles on the ground. After further dewatering and drying, the bottom ash would be transported and stored in an approved onsite landfill.
- **Alternative B – Construction of a Bottom Ash Process Dewatering Facility Utilizing a Continuous or “Once Through” System.** Under Alternative B, TVA would construct a mechanical bottom ash dewatering facility at GAF to cr dry CCR for storage in an approved onsite landfill. The dewatering equipment would be constructed on an approximately 10-acre site; an additional 10 acres would be used for temporary equipment laydown and mobilization during construction. Bottom ash would be dewatered using equipment that would operate continuously while GAF is generating. Excess water from the process water tanks would be conveyed to either a wastewater treatment equalization basin or directly to the

¹ All three of the proposed action alternatives are required to comply with the Environmental Protection Agency (EPA) CCR regulations 40 CFR Parts 257 and 261 Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule published April 17, 2015. This includes discharge of wastewater containing CCR constituents into surface impoundments.

National Pollutant Discharge Elimination System (NPDES) outfall. The proposed process dewatering facility would be designed to remain operational during a 24-hour rainfall event with a recurrence interval of 25 years. During normal operations, process water and contact water (i.e., additional water from rainfall and surface runoff) would be processed through the bottom ash dewatering system.

- **Alternative C – Construction of a Bottom Ash Dewatering Facility with a Recirculated Bottom Ash Effluent Stream.** 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. The recirculation system would include additional recirculating pumps, additional power from the electrical room, and a water containment facility. Water would be pumped to the intake side of the bottom ash sluice pumps at the powerhouse or a new set of pumps will be installed to provide water back to the boiler bottom. No bottom ash sluice water would be discharged from the NPDES-permitted outfall, thus reducing this discharge. However, the recirculated water stream would also require a make-up water stream, a blowdown wastewater stream, and an outage wastewater stream.²

The Department has the following comments regarding the proposed action.³

Water Resources

- The project as proposed will include the disturbance of more than one acre, and will therefore require a NPDES – General Stormwater Construction Permit, as well as a Storm Water Pollution Prevention Plan and Best Management Practices Plan.⁴ TDEC acknowledges that this consideration is included in the Draft EA and recommends that it be included in the Final EA.
- TVA NPDES Individual Permit # TN0005428 is currently undergoing reissuance due to the changes in wastewater stream(s). It is likely that TVA's Individual NPDES permit would have to be further modified or reissued to address the changes under the preferred action alternative. TVA noted that the use of wastewater treatment additives to help with pH control, the settling of solids, and the reduction of metals during dewatering operations would be implemented on an as needed basis; this could also change the character of the discharge. The Storm Water Multi-Sector Permit would also require modification. Once the system is operational, wastewater characterization of the discharge of this facility and the Outfall 001 discharge would have to be evaluated to ensure that these waste streams comply with all NPDES permit

² Make-up water is new water added to the effluent to make up for the water lost through evaporation during the bottom ash dewatering treatment process. This would result in slightly increasing the water withdrawal rate from the river, but would not significantly increase the total plant-wide withdrawals. Blowdown wastewater is recirculated water that is intentionally flushed out to avoid the concentration of impurities. When effluent from the bottom ash dewatering facility is recycled again and again, water evaporates, and the mineral content (calcium carbonate, magnesium, sodium, salts, etc.) of the remaining water increases in concentration of minerals. If left undiluted, these minerals will cause scaling on equipment surfaces; possibly damaging the system. It is assumed that 15 percent blowdown would be required in order to maintain a balance in the recirculating system. The blowdown water would be contained and reused to support current operations. Outage wastewater is water used to purge the system during plant outages. This outage waste stream could range between 0.2 and 0.5 million gallons per day (MGD). The outage waste stream would be managed in accordance with the ELG.

³ TDEC's Division of Natural Areas (DNA) and Division of Solid Waste Management (DSWM) have reviewed the draft EA and have no specific comments regarding the proposed action or its alternatives. Please note that they Tennessee Wildlife Resources Agency (TWRA) manages information related to state listed rare animal species, and should be consulted in addition to the Division of Natural Areas.

⁴ For more information on NPDES Stormwater Construction Permitting please visit <http://www.tn.gov/environment/article/permit-water-npdes-stormwater-construction-permit>

limits and Tennessee Water Quality Criteria. TDEC recommends that this consideration be included in the Final EA.

- The water withdrawal for TVA GAF is currently “grandfathered” and has not been required to have coverage under an individual water withdrawal permit under the Aquatic Resource Alteration Permit (ARAP).⁵ The proposed withdrawal of an additional 0.8 million gallons per day (MGD) as a part of the ash dewatering facility would result in the loss of water withdrawal permit exemptions granted through the grandfathering of the facility. Therefore, this increase in withdrawals would necessitate an ARAP withdrawal permit and require TVA to obtain a permit for the overall withdrawal from the Cumberland River. TDEC recommends that this consideration be included in the Final EA.

Air Pollution Control

- The project may require revisions to the facility’s existing Title V Operating Permit # 561209 due to changes in potential fugitive dust emissions associated with the proposed action alternative, which will require modifications to the ash collection and handling systems that are utilized for operation of the current wet process, and described in the existing Title V Operating Permit.⁶ Any proposed equipment modifications that require an alteration to existing Title V Operating Permits may require an Air Quality Construction Permit prior to the commencement of the proposed construction.⁷ TDEC acknowledges that this consideration is included in the Draft EA and recommends that it be included in the Final EA.
- The coal used at the TVA GAF is 100% Powder River Basin coal with little to no pyrites (sulfur) in the coal, “Low Sulfur”. The proposed project includes the capability for the GAF to burn higher sulfur Illinois Basin coal. A fuel change (going from low sulfur to higher sulfur coal), may also require a permit modification based on differences in emission characteristics (although emissions of sulfur are already limited by the current permit and as long as the facility remains at or under their current limits, may not require a revision to the sulfur dioxide limits). TDEC recommends that this consideration be included in the Final EA.
- The only air quality impacts described in the Draft EA are those associated with minor short term fugitive dust emissions during the construction phases of the project. The procedures outlined for fugitive dust control appear to be adequate and may require the use of additional road cleaning sweepers or water wash trucks if it is determined that track out is occurring either in an on or off site storage/disposal solution.
- The assumption presented in the Draft EA that fugitive emissions are estimated to be minimal is in line with actual assessments where adequate fugitive dust controls are implemented and maintained. The historic and current CCR storage and cleanup processes are well understood as are the methods and techniques to repurpose and reuse the CCR materials and therefore the reporting of the new dewatering process handling and process rates should be easily verified. As there will be no reported changes in the coal combustion process or in the newly installed control equipment (only changes to the ash handling process), there is not expected to be an appreciable effect as a result of increased emissions from the permitted source.

⁵ TDEC DWR Rule 0400-40-07-.04(5)(c), <http://sos.tn.gov/effective-rules>. For more information on the ARAP program please visit <http://www.tn.gov/environment/article/permit-water-aquatic-resource-alteration-permit>.

⁶ For more information on Title V Operating Permits please visit <http://www.tn.gov/environment/article/permit-air-title-v-operating-permit>.

⁷ For more information on Air Quality Construction Permits please visit <https://www.tn.gov/environment/article/permit-air-air-quality-construction-permit>.

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. These comments are also being provided independent of any ongoing litigation regarding this site. Please contact me should you have any questions regarding these comments.

Sincerely,

A handwritten signature in cursive script that reads "Kendra Abkowitz".

Kendra Abkowitz, PhD
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cc: Lacey Hardin, TDEC, APC
Chuck Head, TDEC, Bureau of Environment
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