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## Sent Via Electronic Submittal

August 6, 2024

Mr. Jason Hurt, Manager (jasonm.hurt@ky.gov)  
Surface Water Permits Branch  
Department of Environmental Protection  
Division of Water  
300 Sower Boulevard, 3<sup>rd</sup> Floor  
Frankfurt, Kentucky 40601

Dear Mr. Hurt:

TENNESSEE VALLEY AUTHORITY (TVA) – SHAWNEE FOSSIL PLANT (SHF) – KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM (KPDES) PERMIT NO. KY0004219 – MODIFICATION REQUEST

On May 9, 2024, the United States Environmental Protection Agency published revisions to the Steam Electric Effluent Limitation Guidelines (ELGs) in 40 CFR Part 423. The revised rule modifies technology-based effluent limitations for four waste streams: flue gas desulfurization (FGD) wastewater, bottom ash transport water (BATW), combustion residual leachate (CRL), and legacy wastewater. In addition, the rule amends the subcategories for separate compliance pathways based on unit and asset operating plans. To accommodate TVA's compliance with the 2024 ELGs, TVA requests SHF's NPDES permit be modified to reflect the compliance pathways available for SHF.

Compliance with the 2024 rule requires timely compliance with applicability dates which range from as-soon-as-possible and extend to varying no-later-than dates depending on the specific compliance category or subcategory implemented. In establishing applicable compliance dates, the permitting authority is to consider the following factors:

1. Time to expeditiously plan (including to raise capital), design, procure, and install equipment to comply with the requirements of the final rule.
2. Changes being made or planned at the plant in response to Greenhouse Gas (GHG) regulations for new or existing fossil fuel-fired plants under the Clean Air Act (CAA), as well as regulations for the disposal of coal combustion residuals under subtitle D of Resource Conservation and Recovery Act (RCRA).
3. For FGD wastewater requirements only, an initial commissioning period for the treatment system to optimize the installed equipment.
4. Other factors as appropriate.

Currently, TVA is updating the agency's Integrated Resource Plan (IRP), which evaluates long-term energy resources, electric generation, power supply, and decarbonization strategies. This process will best inform TVA decision making and asset strategy for managing TVA's coal fleet into the future. Therefore, TVA requests SHF's KPDES permit reflect compliance

deadlines for regulated waste streams under each available 2024 ELG category or sub-category, as proposed in the table below. SHF has a dry scrubber; therefore, the FGD wastewater ELGs are not applicable.

Category	Wastestream	Limits	Proposed Applicability Date
Generally Applicable	Bottom Ash Transport Water	Zero Liquid Discharge	December 31, 2029
	Combustion Residual Leachate		
	Unmanaged Combustion Residual Leachate	Arsenic (11, 8 ug/L) Mercury (788, 356 ng/L)	December 31, 2029
	Legacy Wastewater	Best Professional Judgement (BPJ)	Upon issuance
2034 Retirement	Bottom Ash Transport Water	High recycle; BATW purge not to exceed a maximum of 10% of the system wetted volume; BPJ limitations for BATW purge water	December 31, 2025
	Combustion Residual Leachate	pre-retirement: BPJ	Upon issuance
		post-retirement: Arsenic (11, 8 ug/L) Mercury (788, 356 ng/L)	April 30, 2035
	Unmanaged Combustion Residual Leachate	Arsenic (11, 8 ug/L) Mercury (788, 356 ng/L)	December 31, 2029
Legacy Wastewater	BPJ	Upon issuance	

SHF's current NPDES permit aligns with the 2020 ELG rule, and SHF operates in the generally applicable category. On May 31, 2023, TVA submitted SHF's Initial Certification Statement for a high recycle system to treat BATW prior to discharge, in compliance with the 2020 ELGs. The BPJ determination shall be coordinated with KDOW and completed no later than December 31, 2025. Installing this treatment system provides SHF the ability to participate in the 2034 Retirement subcategory. If SHF operation becomes forecasted in alignment with the 2034 retirement subcategory, TVA may submit a Notice of Planned Participation by December 31, 2025, pursuant to section 423.19(h) to preserve this compliance option for SHF.

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Applicability dates in the 2024 ELG Rule remain achievable and allow for options. TVA's requested compliance dates allow adequate time for TVA's IRP and coal fleet management evaluation; our phased project planning process (Appendix 1); accommodations of a potential financial investment in the hundreds of millions of dollars, and schedule extensions from market congestion for critical components as dozens of similar projects are initiated to meet the same compliance requirements and timeline; and design, construction, and commissioning of zero liquid discharge system if necessary to remain in the generally applicable pathway. Incorporation of the rule's compliance categories, subcategories, and associated qualifications provide continued flexibility for SHF to proceed in accordance and alignment with current compliance options without modification requests. TVA will continue to coordinate with KDOW on any changes in decision making and future planning.

If you have questions or need additional information, please contact Callan Pierson by email at [cperson@tva.gov](mailto:cperson@tva.gov).

Sincerely,



Paul Pearman  
Senior Manager  
Water Permits, Compliance, and Monitoring

Enclosure

cc: Division of Water  
Paducah Regional Office  
Attn: Ms. Shannon McLeary ([shannon.mcleary@ky.gov](mailto:shannon.mcleary@ky.gov))  
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## **Appendix 1: TVA's Three-Phase Project Process**

TVA uses a three-phase project process: Phase 1 is the study phase, Phase 2 is the design phase, and Phase 3 is the construction/implementation phase. The types of activities generally included in each phase, as well as some potential drivers of schedule challenges, are described below.

### **Project Phase 1—Study Phase**

Types of Activities: Develop project planning documents, including an evaluation of project alternatives, locations, challenges to meeting project objectives, etc. Conduct siting and geotechnical studies as needed to ensure constructability. Conduct feasibility studies, characterization studies, preliminary testing, and other technical studies as needed. Develop performance specifications, conceptual budgets, and refined schedules. Develop Request for Proposal (RFP) documents, and initiate RFP process and evaluations to proceed to Phases 2 and 3. Obtain TVA Board of Directors approval for the project. Evaluate and acquire contractors as needed.

Potential Schedule Issues: Delays in the Request for Proposal processes (i.e., required extensions, scope clarifications, best and final pricing requests, contract negotiations, etc.).

### **Project Phase 2—Design Phase and Long-Lead Items**

Types of Activities: Develop detailed design drawings and related documents including power needs study for equipment. Complete required environmental reviews as required by the National Environmental Policy Act (NEPA) and obtain construction stormwater and Clean Water Act Section 404 and 401/ARAP permits and other permits, if needed, based on design documents. Order long-lead materials and equipment. Property acquisition (if necessary). Evaluate and acquire contractors as needed. Proof-of-concept testing, as needed.

Potential Schedule Issues: Delays in permitting and/or challenges to permits. Challenges to NEPA documents. Scarcity or supplier bottlenecks for long-lead equipment. Design duration can be affected by the complexities of the project, how it ties into other existing and planned systems, the location and its geology, and other factors.

### **Project Phase 3—Construction Phase**

Types of Activities: Site preparation. Construction activities, including establishment of construction stormwater best management practices, installation of equipment, piping, power, controls. Complete planned tie-ins, working around planned outage schedules (potentially for multiple units). Perform start-up, testing, and optimization of system. Troubleshoot and respond to equipment design or reliability issues. Operator training, as needed.

Potential Schedule Issues: Site construction delays due to weather, environmental review-related issues (e.g., potential “no construction” periods for bird and bat protection), and other causes. Plant integration of controls, power, piping, etc. and dependence on planned outages (potentially for multiple units). Construction duration can be significantly affected by the complexities of the project, how it ties into other existing and planned systems, the location and its geology, and other factors.