



Memorandum from the Office of the Inspector General

October 28, 2025

Daniel T. Tibbs

**REQUEST FOR MANAGEMENT DECISION – EVALUATION 2025-17563 – SHAWNEE
SELECTIVE CATALYTIC REDUCTION PROJECT**

The Tennessee Valley Authority (TVA) operates four coal plants, which are required to comply with the Clean Air Act (CAA). In 2023, changes to the CAA required the reduction of nitrogen oxide (NO_x) from power plants. To comply with the changes, TVA made the decision to install Selective Catalytic Reduction (SCR) systems¹ at TVA's Shawnee Fossil Plant (SHF) for Units 2, 3, 7, and 8 and entered into a \$59.5 million contract for the design and delivery of SCR systems.² The contract included performance guarantees for meeting metrics such as NO_x emissions, ammonia slip limits,³ and system pressure drop. Due to the importance of complying with environmental regulations and the cost of the project, we initiated an evaluation to determine whether performance guarantees were met for the SHF SCR project.

We determined metrics associated with performance guarantees for the SHF SCR project were met. However, TVA project support personnel performed the SCR tuning, which was a defined contractor responsibility. This resulted in unnecessary risk and additional cost to TVA. We made two recommendations to the Vice President, Generation Projects and Outage Management, to evaluate risk associated with TVA's performance of SCR tuning and education of project support personnel's roles and responsibilities to help ensure contract compliance. In response to our draft report, TVA management agreed with our recommendations and requested one clarification, which has been incorporated below. See the Appendix for TVA management's complete response.

BACKGROUND

TVA's SHF, located in Paducah, Kentucky, has nine active units with a maximum generating capacity of more than 1,100 megawatts.⁴ In 2011, the United States Environmental Protection Agency (EPA) announced a settlement with TVA to resolve alleged Clean Air Act violations through a Consent Decree. The Consent Decree required

¹ SCR systems are an emission control technology designed to remove nitrogen oxide (NO_x) from flue gases emitted by combustion sources.

² TVA's construction could only accommodate four units being built simultaneously. Further, TVA is currently deciding whether to move forward with a separate project for SCR installations on Units 5, 6, and 9.

³ Ammonia slip is the amount of unreacted ammonia emitted from the SCR control equipment, as collected and measured pursuant to testing methods.

⁴ In 2010, TVA idled Unit 10 at SHF and then officially retired it in 2014.

Shawnee Units 1 and 4 to be shut down, converted to renewable biomass, or controlled by December 2017. TVA installed SCR systems on units 1 and 4 to comply with the Consent Decree. However, the remaining SHF units were left uncontrolled (Units 2, 3 and 5 through 9).

In 2023, changes to the CAA required the reduction of NO_x from power plants. To achieve reduced NO_x emissions requirements, uncontrolled SHF units would either have to run at a greatly reduced capacity during ozone season⁵ or install SCR systems by 2026. TVA made the decision to install SCR systems for Units 2, 3, 7, and 8 and entered into a \$59.5 million contract for the design and delivery of systems to comply with the CAA. The contract included over \$732,000 for contractor services related to start up and commissioning for the SCRs, which included tuning. The contract also included performance guarantees for metrics such as those specific to NO_x emission limits, ammonia slip limits, and system pressure drop. All performance guarantee deficiencies were to be remedied by either payment of liquidated damages by the contractor or subject to make good⁶ remedies.

TVA's Generation Projects and Outage Management business unit under TVA's Generation Projects and Fleet Services organization is responsible for the management and oversight of the Shawnee SCR project. This organization relies on TVA's Central Labs and Services for final testing to confirm that SCRs meet performance guarantees. The project manager within Generation Projects and Outage Management is responsible for project activities, including coordination of the duties between TVA personnel and the contractor.

Due to the importance of complying with environmental regulations and the cost of the project, we initiated an evaluation to determine whether performance guarantees were met for the SHF SCR project.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of this evaluation was to determine whether performance guarantees were met for the SHF SCR project. Our scope included SCRs for Units 3, 7, and 8.⁷ To complete the evaluation, we:

- Reviewed the SCR contract, performance test reports, and supporting documentation.
- Reviewed EPA testing standards to understand testing requirements for performance guarantees provided for in the contract.
- Conducted interviews with TVA personnel to understand (1) the process for emissions testing, (2) the methodology for assessing performance guarantees; and (3) steps taken to assess compliance/conformance to performance guarantees.

⁵ Ozone season is from May 1st through September 30, when ground-level ozone pollution levels are highest.

⁶ Make good requires the contractor to redress the performance deficiency.

⁷ Unit 2 was not included in our scope because the performance testing results had not been reported as of June 2025.

- Examined contractor's test plan for measuring emissions to determine alignment with performance guarantees.
- Verified accuracy of source data through review of data sheets for one unit.
- Reperformed emissions calculations for SCR units.

This evaluation was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*.

FINDINGS

We determined metrics associated with performance guarantees for the SHF SCR project were met. However, TVA project support personnel performed the SCR tuning instead of the contractor. This resulted in unnecessary risk and additional cost to TVA.

According to the SCR contract, the contractor is to perform start up and commissioning, which includes tuning the SCR after installation. SCR system tuning includes optimizing operating parameters, such as ammonia distribution across the unit, to achieve the desired performance metrics. Tuning of the system allows for troubleshooting and adjustments before the final performance test, which is when the satisfaction of the contractor-performance guarantees would be determined.

During our review, we found that Central Labs and Services personnel completed tuning instead of the contractor. According to Central Labs and Services personnel, they were unaware of the contract's terms and stipulations related to tuning. After a meeting with the project team, vendor, and Central Labs and Services personnel, it was determined that Central Labs and Services would perform the tuning because TVA testing equipment was more efficient. Performance of SCR tuning by TVA personnel may have compromised the validity of the SCR system warranty by limiting the vendor's liability. We were unable to determine the amount that TVA paid to the contractor specific to SCR tuning because the contract was firm fixed price. However, unnecessary costs were incurred by TVA due to utilizing company personnel, equipment, and supplies to complete the tuning.

RECOMMENDATIONS

We recommend the Vice President, Generation Projects and Outage Management:

- Evaluate the practice, including the risk to warranty and cost, of TVA performing tuning in place of the contractor.
- Educate project support personnel, as applicable, on their roles and responsibilities.

TVA Management's Comments – TVA management agreed with our recommendations and requested one clarification, which has been incorporated above. See the Appendix for TVA management's complete response.

This report is the final report for your review and information. Please advise us of your management decision within 60 days from the date of this report. In accordance with the Inspector General Act of 1978, as amended, the Office of the Inspector General is required to report to Congress semiannually regarding evaluations that remain unresolved after 6 months from the date of report issuance. If you have any questions, please contact Lisa H. Hammer, Director, Evaluations – Projects, at (865) 633-7342. We appreciate the courtesy and cooperation received from your staff during the evaluation.



Greg Stinson
Assistant Inspector General
(Audits and Evaluations)

RDH:KDS

cc: TVA Board of Directors
Christopher Maurice Bone
Samuel P. Delk
Jessica Dufner
Prentice Gilbert
Tracy E. Hightower
Jerry W. Lacy
Jill M. Matthews
Donald A. Moul
Timothy Edward Rieger
Ronald R. Sanders II
Rebecca C. Tolene
Ben R. Wagner
Robert Bryan Williams
OIG File No. 2025-17563

October 21, 2025

Greg Stinson, WT 2C

MANAGEMENT RESPONSE – DRAFT EVALUATION 2025-17563 - SHAWNEE SELECTIVE
CATALYTIC REDUCTION PROJECT

This is in response to your memorandum dated October 6, 2025. Thank you for the professional manner in which this evaluation was conducted and providing us an opportunity to learn and improve.

After review of the draft evaluation, we are providing response to the Recommendations regarding the Shawnee Selective Catalytic Reduction Project.

Recommendations

1. Evaluate the practice, including the risk to warranty and cost, of TVA performing tuning in the place of the contractor.

Response

TVA management agrees with the recommendation. However, we respectfully request one clarification to the "Findings" section on page 3. The final paragraph currently states:

"During our review, we found that Central Labs and Services personnel completed tuning instead of the contractor. According to Central Labs and Services personnel, they were unaware of the contract's terms and stipulations related to tuning and performed the tuning because TVA testing equipment was more efficient."

TVA management recommends revising this statement to reflect the collaborative nature of the decision, as follows:

"During our review, we found that Central Labs and Services personnel completed tuning instead of the contractor. According to Central Labs and Services personnel, they were unaware of the contract's terms and stipulations related to tuning. After a meeting and discussion with the Project team, vendor, and Central Labs and Service personnel on June 3, 2024, it was determined that Central Labs and Services personnel would perform the tuning because TVA testing equipment was more efficient."

This clarification is important to accurately reflect that the decision to proceed with TVA-led tuning was made jointly and purposefully by many parties at TVA.

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2. Educate project support personnel, as applicable, on their roles and responsibilities.

Response

TVA management agrees with the recommendation.

Please let us know if you have any further comments or questions and don't hesitate to reach out as needed.



Dan Tibbs
Vice President
Generation Projects & Outage Management

cc:	Christopher Maurice Bone	Timothy Edward Rieger
	Samuel P. Delk	Ronald R. Sanders II
	Printice Gilbert	Rebecca C. Tolene
	Tracy E. Hightower	R. Bryan Williams
	Jerry W. Lacy	