



Memorandum from the Office of the Inspector General

April 8, 2026

John Dufner  
Chuck D. Spearman

REQUEST FOR MANAGEMENT DECISION – EVALUATION 2025-17596 – RISK  
MITIGATION OF LOW-PRESSURE TURBINES

The Tennessee Valley Authority's (TVA) Enterprise Risk Management (ERM) business unit (BU) focuses on identifying and prioritizing enterprise risks.<sup>1</sup> Annually, ERM leads the preparation of an enterprise risk portfolio, which includes risks across TVA, to aid leadership in strategic and business planning processes. Each BU includes their specific risks in the portfolio and documents the probability of occurrence, financial impact, and actions to manage the risk. TVA Nuclear included *Asset/Equipment Failure – Low-Pressure Turbines*<sup>2</sup> risk in fiscal year (FY) 2025 ERM risk portfolio. The risk description stated that one or more low-pressure turbines fail to perform as designed and the details only included Units 2 and 3 at Browns Ferry Nuclear Plant (Browns Ferry). The actions to address the risk included installing new turbines and steam-path upgrades. Due to the importance of the reliability of TVA's nuclear assets, we performed an evaluation of the risk mitigation of low-pressure turbines to determine if TVA was taking planned actions and measuring the impact of completed actions.

We determined TVA has taken actions or has plans in place to address the low-pressure turbine risk. TVA Nuclear has completed 11 of 15 mitigating actions identified for the risk. The 4 remaining actions are expected to be completed between 2028 and 2030. However, we determined TVA was not effectively measuring the impact of completed actions and a change in the risk scope on the probability of occurrence and financial impact. In addition, we identified some risk information was not documented accurately.

We made recommendations to the Vice President, Nuclear Engineering, to reevaluate the probability of occurrence and financial impact and correctly document the risk information. In response to our draft report, TVA management agreed with our recommendations. See the Appendix for TVA's complete response.

## **BACKGROUND**

TVA's ERM business function focuses on identifying and prioritizing enterprise risks. Annually, ERM leads the preparation of an enterprise risk portfolio, which includes risks across TVA, to aid leadership in strategic and business planning processes. Each BU includes their specific risks in the portfolio. TVA Standard Programs and Processes (SPP)

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<sup>1</sup> An enterprise risk is a risk that has the possibility to occur and directly affect TVA's ability to achieve its mission, values, and/or strategic elements.

<sup>2</sup> A low-pressure turbine converts thermal energy to mechanical energy to generate electricity.

13.017, *Enterprise Risk Management*, states ERM and TVA business partners go through a dedicated process annually to update their risk portfolios, identify new risks, assess the severity of risks based on probability and impact, and update the actions they utilize to manage the risk. In FY 2018, TVA Nuclear identified *Browns Ferry Units 2 and 3 Low-Pressure Turbine Rotors* as a risk. In FY 2021, the name changed to *Asset/Equipment Failure – Low-Pressure Turbines*, and the scope changed to include all seven nuclear units. The risk description stated that one or more low-pressure turbines fail to perform as designed and included that Browns Ferry Units 2 and 3 low-pressure turbines are reaching end of life and are susceptible to stress-corrosion cracking. This risk remained a TVA Nuclear risk in TVA's FY 2025 ERM risk portfolio. The probability of occurrence was listed as 50 percent and the financial impact was \$500 million.

In FY 2025, the action plan for addressing the low-pressure turbine risk included a list of 13 actively managed and 2 in-development actions such as installing new turbines and steam-path upgrades. Due to the importance of the reliability of TVA's nuclear assets, we performed an evaluation of the risk mitigation of low-pressure turbines.

### **OBJECTIVE, SCOPE, AND METHODOLOGY**

The objective of our evaluation was to determine if TVA was taking planned actions and measuring the impact of completed actions. The scope included the low-pressure turbine risk. To achieve our objective, we:

- Interviewed ERM, Generation Project and Fleet Services, and Nuclear personnel to (1) obtain information related to actions taken to address the risk and (2) gain an understanding of how TVA is measuring the impact of completed actions.
- Reviewed documentation to verify the (1) risk's identified actions were taken, and (2) measurement of reduction to probability and/or impact for completed actions.

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 TVA has taken actions or has plans in place to address the low-pressure turbine risk. TVA Nuclear has completed 11 of 15 mitigating actions identified for the risk. The four remaining actions are expected to be completed between 2028 and 2030. However, we determined TVA was not effectively measuring the impact of completed actions and a change in the risk scope on the probability of occurrence and financial impact. In addition, we identified some risk information was not documented accurately.

### **EVALUATION OF PROBABILITY AND IMPACT COULD BE IMPROVED**

According to TVA, Nuclear and ERM personnel conducted risk portfolio workshops each year to discuss Nuclear risks. These workshops included discussions of the *Asset/Equipment Failure – Low-Pressure Turbines* risk. However, we determined TVA

was not effectively measuring the impact of completed actions and a change in the risk scope on the probability of occurrence and financial impact. Specifically:

- There were no documented changes in the probability of occurrence or financial impact from FY 2020 through FY 2024 even though some significant changes occurred:
  - In FY 2021, the risk scope expanded from only two units at Browns Ferry to cover low-pressure turbines for all seven TVA nuclear units, which should have impacted both the probability of occurrence and financial impact.
  - In Spring 2021, TVA completed the replacement of all Unit 2 low-pressure turbines at Browns Ferry, and in Fall 2024, TVA completed the replacement of two Unit 1 low-pressure turbines at Watts Bar Nuclear Plant, both of which should have impacted the probability of occurrence.
- In FY 2025, the probability of occurrence increased from 10 to 50 percent. According to TVA personnel, the increase was because the age of the turbines were beyond their expected life. However, review of the 2025 Life Cycle Management Plans<sup>3</sup> indicated all low-pressure turbines in TVA's fleet were within their useful life and turbines for 4 of the 7 Nuclear units had been upgraded or replaced.

Based on the current probability and impact, this risk is among the highest risks for TVA Nuclear. If these measures are inaccurate, it could impact investment decisions made by TVA management and the Board of Directors.

### **SOME RISK INFORMATION WAS NOT DOCUMENTED ACCURATELY**

According to TVA-SPP-13.017, *Enterprise Risk Management*, the Strategic Business Unit or BU will identify and maintain risk coordinators at the appropriate level to ensure risk information is up to date. We found that some risk information was not documented accurately in the ERM system of record. According to TVA management, a decision was made to increase the probability of occurrence between FY 2021 and FY 2024, due to Browns Ferry Unit 3 inspections showing degradation of components. However, the increase was not entered into the ERM system of record. TVA was unable to provide what the probability of occurrence each year should have been. In addition, (1) two of the incomplete actions were incorrectly marked complete, and (2) the financial impact for FY 2024 was incorrectly stated as \$50 million instead of \$500 million.<sup>4</sup> In addition, as stated above, the risk scope changed in FY 2021 to include all TVA nuclear units. However, the risk description in the enterprise risk portfolio only includes Browns Ferry.

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<sup>3</sup> The Life Cycle Management Plans address turbines and their associated valves for TVA's nuclear plants. Performance is evaluated along with expected future outcome in order to ensure turbines perform their required functions for the remaining life of the plants.

<sup>4</sup> During the course of this evaluation, errors were corrected in the system of record.

## **RECOMMENDATIONS**

We recommend the Vice President, Nuclear Engineering:

- Evaluate probability of occurrence and financial impact to verify they are accurately reported.

**TVA Management's Comments** – TVA management agreed with the recommendation. See the Appendix for TVA's complete response.

- Take steps to ensure that risk information in the ERM system of record is accurate.

**TVA Management's Comments** – TVA management agreed with the recommendation. See the Appendix for TVA's complete response.

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This report is for your review and management decision. 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 or wish to discuss our observations, please contact Lindsay J. Denny, Director, Evaluations – Operations at (865) 633-7349. We appreciate the courtesy and cooperation received from your staff during the evaluation.



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(Audits and Evaluations)

KSL:FAJ

cc: TVA Board of Directors  
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OIG File No. 2025-17596

April 6, 2026

Greg Stinson, WT 2C-K

RESPONSE TO REQUEST FOR COMMENTS - Draft Evaluation 2025-17596 - Risk Mitigation  
of Low-Pressure Turbines

TVA Nuclear and Generation Projects & Fleet Services appreciate Kristin Leach, Lindsay Denny  
and the Office of Inspector General's thorough evaluation of the Risk Mitigation of Low-Pressure  
Turbines.

**Recommendations:**

1. Evaluate probability of occurrence and financial impact to verify they are accurately reported.

Response: Agree

2. Take steps to ensure that risk information in the ERM system of record is accurate.

Response: Agree

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