TENNESSEE VALLEY AUTHORITY

Post Office Box 2000, Decatur, Alabama 35609-2000

November 27, 2024

10 CFR 21.21

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Unit 3
Renewed Facility Operating License No. DPR-68
NRC Docket No. 50-296

Subject: **Updated Report of a Deviation or Failure to Comply Associated with a Valve in the Unit 3 High Pressure Coolant Injection System**

Reference:
1. "Interim Report of a Deviation or Failure to Comply Associated with a Valve in the Unit 3 High Pressure Coolant Injection System," dated June 23, 2024 (ML24175A004)
2. "Updated Report of a Deviation or Failure to Comply Associated with a Valve in the Unit 3 High Pressure Coolant Injection System," dated August 22, 2024 (ML24235A497)
3. Letter from Flowserve to TVA, "10 CFR Part 21 Evaluation 114 Closure," dated October 28, 2024

In accordance with the requirements of Title 10 of the Code of Federal Regulations (10 CFR) 21.21(a)(2), the Tennessee Valley Authority is submitting a follow-up report to the interim notification listed in the reference.

On March 3, 2024, excessive valve stem rotation was observed while troubleshooting the BFN, Unit 3, High Pressure Coolant Injection (HPCI) outboard steam isolation valve. This issue was promptly entered into the BFN Corrective Action Program (CAP) as Condition Report (CR) 1914295.

On April 24, 2024, TVA completed its 10 CFR Part 21 discovery process and determined the need to perform a 10 CFR Part 21 Evaluation. This Part 21 Evaluation is being tracked by TVA under CR 1926691. The vendor, Flowserve, was contacted and has assumed responsibility for performing the Part 21 Evaluation for this valve. An independent failure analysis by MPR Associates, Inc. was provided to Flowserve to help them with their evaluation. This report concluded that the event was apparently caused by an improper upper wedge-to-stem joint, and this this mismatch in mating surface diameter resulted in bending stress which led to the valve failure.

However, the vendor's evaluation concluded that the impression of the wedge was created from the tightening process and does not look to be a factor in the failure as previous reports have speculated. No definitive conclusion can be drawn with the data available, but the following should be considered for contributing factors:

- The possibility of system vibration forming the microfractures on the stem.
- Improper wedge pack fit-up could have caused additional stress.
- Thermal embrittlement may be a relevant contributing factor.

On October 28, 2024, Flowserve notified TVA per 10 CFR 21.21(b) that they were not capable of performing the evaluation to determine if a defect exists. Because of the inconclusive results, TVA will procure additional engineering expertise to complete the required evaluation. This evaluation will be tracked by TVA under CR 1942523.

There are no new regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact David Renn, Site Licensing Manager, at (256) 729-2636.

Respectfully,

Daniel A. Komm
Site Vice President

cc:

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant
NRC Project Manager - Browns Ferry Nuclear Plant