

**REGULATORY AUDIT QUESTIONS**  
**REQUEST FOR ALTERNATIVE TO**  
**AMERICAN SOCIETY OF MECHANICAL ENGINEERS OPERATION**  
**AND MAINTENANCE CODE SUBSECTION ISTC-3630**  
**TENNESSEE VALLEY AUTHORITY**  
**SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2**  
**DOCKET NOS. 50-327 AND 50-328**

By letter dated March 15, 2022, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22074A315), as supplemented by a letter dated June 28, 2022 (ML22179A357), Tennessee Valley Authority (the licensee) submitted a request for an alternative to the Inservice Testing (IST) Program requirements for Sequoyah Nuclear Plant, Units 1 and 2, respectively. The alternative would apply to compliance with American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code of Record, Subsection ISTC, paragraphs ISTC-3630, ISTC-3630(f), ISTC-5221(a)(1), and ISTC-5224, for specific IST Program requirements for certain pressure isolation valves (PIVs). The NRC staff has determined that the following information is needed to complete its review.

**Mechanical Engineering and Inservice Testing Branch (EMIB) Audit Questions**

1. The TVA technical evaluation (Engineering Work Request (ERW)) states that mechanical agitation shall not include bolting and flanges. Clarify the TVA plan to use mechanical agitation of the piping.
2. The ERW contact force calculation does not include the continuous force or load exerted on the valve body due to hydraulic pressure of the fluid in the system. Please clarify.
3. ERW Page 5 of 6 under "After" states, in part, that "Ensure satisfactory completion of surveillance test." Clarify if the TVA plan is to perform the ASME OM Code, Subsection ISTC, required test at this time.
4. On ERW page 4 of 6, the formula considers "a" as total length of the valve. (1) Clarify not using piping system with valve (with weight) and supported at both ends instead of using valve length and its weight; (2) explain neglecting pipe and valve vibration associated with mechanical agitation.
5. The ERW attached drawing shows 8" and 10" swing check valves (page 3 of Attachment 1) for the Salem plant. Clarify that this drawing is also applicable for TVA 8" and 10" valves.

6. Explain if any additional steps are being planned by the TVA evaluation based on lessons learned from similar issues at Salem, and Turkey point.
7. The ERW does not specify the check valve leakage (measurement) when TVA will use a mechanical agitator. Clarify if there is any range of leakage at which mechanical agitators plan to be used.
8. The ERW states that attached is the Engineering Evaluation from Salem that includes a table of valve types/sizes and methods/limitation for mechanical agitation used in Salem procedures. It also states that attached is the NRC inspection report where NRC witnesses these methodologies and reviewed procedures. Are these provided?
9. The ERW is not clear regarding the mallets (rubber, dead blow, or metal) used in the calculations for weight and applied forces, and used in the mechanical agitation process list of before, during, and after requirements.
10. In the ERW, the “before” list of mechanical agitation process requirements states that to prevent preconditioning, the as-found test results are obtained “or” the valve is declared inoperable. The purpose of the “or” in this sentence is not clear.
11. The ERW does not discuss the feedback process following disassembly and inspection to ensure that the continued use of the mechanical agitation process is acceptable.