From: Kimberly Green
Sent: Wednesday, May 3, 2023 4:11 PM
To: Eckermann, Jeremy Beau
Subject: Request for Additional Information Related to Proposed Alternative Requests for the 5th 10-Year Inservice Testing Interval for Browns Ferry Nuclear Plant, Units 1, 2, and 3 (EPID L-2022-LLR-0086)
Attachments: Final RAI for BNF-IST-01 thru 05.pdf

Dear Mr. Eckermann:

By letter dated December 12, 2022 (Agencywide Documents and Access Management System Accession No. ML22346A189), the Tennessee Valley Authority (TVA) submitted a request to use a later edition of the American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM Code) as well as five alternative requests for the fifth 10-year inservice testing (IST) interval for Browns Ferry Nuclear Plant, Units 1, 2, and 3.

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing TVA's application and has identified areas where additional information is needed to complete its review. A draft request for additional information (RAI) was previously sent to you via email on April 27, 2023. At TVA's request, a clarification call was held on May 2, 2023, to clarify the NRC staff's draft RAI. As a result of the clarification call, it was determined that the following changes to the requests were needed to better clarify the NRC staff's requests:

- RAI-BFN-IST-01, request 2.b, RAI-BFN-IST-02, request 1.b, RAI-BFN-IST-03, request 1.b, and RAI-BFN-IST-04, request 2.b were revised to add "for the Fifth 10-Year IST interval" at the end of the request.
- RAI-BFN-IST-05, request 1 was revised to add "and provide any additional information needed to support a (z)(2) request if TVA decides that (z)(2) is appropriate."
- RAI-BFN-IST-05, request 3: the cited accession number was corrected.
- RAI-BFN-IST-05, request 3 was reworded to state, "Explain how the frequency of the valve position indication will remain consistent with the ASME OM Code requirement as incorporated by reference in 10 CFR 50.55a, or an authorized alternative, for the Fifth 10-Year IST interval." The previous wording was "Discuss the applicability of these procedures to the IST testing for these valves."

As agreed during the clarification call, a response to the attached RAI is requested within 30 days from the date of this email.

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please me at (301) 415-1627 or via email at Kimberly.Green@nrc.gov.

Sincerely,

Kimberly Green, Sr. Project Manager

Plant Licensing Branch II-2

Division of Operating Reactor Licensing

Office of Nuclear Reactor Regulation

Hearing Identifier: NRR_DRMA
Email Number: 2074

Mail Envelope Properties (DM6PR09MB54625DB1448B9D069AB7CBB98F6C9)

Subject: Request for Additional Information Related to Proposed Alternative Requests for the 5th 10-Year Inservice Testing Interval for Browns Ferry Nuclear Plant, Units 1, 2, and 3 (EPID L-2022-LLR-0086)
Sent Date: 5/3/2023 4:11:26 PM
Received Date: 5/3/2023 4:11:00 PM
From: Kimberly Green

Created By: Kimberly.Green@nrc.gov

Recipients:
"Eckermann, Jeremy Beau" <jbeckermann@tva.gov>
Tracking Status: None

Post Office: DM6PR09MB5462.namprd09.prod.outlook.com

Files	**Size**	**Date & Time**
MESSAGE	2530	5/3/2023 4:11:00 PM
Final RAI for BNF-IST-01 thru 05.pdf	96343	

Options
Priority: Normal
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:

ALTERNATIVE REQUESTS BFN-IST-01 THROUGH 05 FOR

FIFTH 10-YEAR INTERVAL INSERVICE TESTING PROGRAM

REQUEST FOR ADDITIONAL INFORMATION

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

DOCKET NOS. 50-259, 50-260 AND 50-296

EPID L-2022-LLR-0086

References

1. Letter from Tennessee Valley Authority (TVA) to U.S. Nuclear Regulatory Commission (NRC), Alternative Requests BFN-IST-01 through 05 and Use of a Later Edition of the ASME OM Code for the Fifth 10-Year Interval Inservice Testing (IST) Program for the Browns Ferry Nuclear Plant (Browns Ferry or BFN) Units 1, 2, and 3, dated December 12, 2022 (ADAMS Accession No. ML22346A189).

2. Inservice Testing Program for the Fourth 10-Year Interval for the Browns Ferry Nuclear Plant, Units 1, 2 and 3 (ADAMS Accession No. ML13291A384).

Regulatory Requirements

The NRC regulations in Section 55a, "Codes and standards," in Part 50, "Domestic Licensing of Production and Utilization Facilities," in Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR 50.55a) in paragraph (z), "Alternatives to codes and standards requirements," state the following:

> Alternatives to the requirements of paragraphs (b) through (h) of this section or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation. A proposed alternative must be submitted and authorized prior to implementation. The applicant or licensee must demonstrate that:
>
> (1) *Acceptable level of quality and safety.* The proposed alternative would provide an acceptable level of quality and safety; or
> (2) *Hardship without a compensating increase in quality and safety.* Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

RAI-BFN-IST-01

1. Alternative Request BFN-IST-01, Section V, "Proposed Alternative," second paragraph, second and third sentences, state:

   > Supplemental position verification of the SDV [scram discharge volume] vent and drain valves in the closed position will be satisfied by demonstrating annunciation of the SDIV [scram discharge instrument volume] high level alarm during a scram. Failure of any individual valve to close would be detectable

using remote position indication in the control room.

Explain how receipt of a high level alarm provides positive indication that all valves are closed, particularly the SDIV vent valves.

2. The current Browns Ferry, Units 1, 2, and 3, Fourth 10-Year Interval IST Program Plan (ML13291A384) includes drain valves 1/2/3-FCV-85-37C/37E and vent valves 1/2/3-FCV-85-82A/83A and references Browns Ferry Procedures 1/2/3-SR-3.3.3.2.1(85) and 1/2/3-SR-3.1.8.2 for these drain and vent valves. The Browns Ferry Technical Specification (TS) Surveillance Requirement (SR) 3.3.3 2.1 and SR 3.1.8.2 Frequencies refer to the Surveillance Frequency Control Program (SFCP). However, the request states that the proposed alternative testing will be performed at the American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM Code) paragraph ISTC-3700 frequency of at least once every two years.

    a. If this alternative is authorized, confirm that TVA will perform the alternative testing at least once every two years as specified in paragraph ISTC-3700, and that the frequency will not be decreased unless authorized by the NRC in response to a 10 CFR 50.55a(z) alternative request, or by use of an applicable ASME OM Code Case endorsed in Regulatory Guide (RG) 1.192 as incorporated by reference in 10 CFR 50.55a.
    b. Explain how the frequency will remain consistent with the ASME OM Code requirement as incorporated by reference in 10 CFR 50.55a for the Fifth 10-Year IST interval.

RAI-BFN-IST-02

1. The current Browns Ferry, Units 1, 2, and 3, Fourth 10-Year Interval IST Program Plan (ML13291A384) references Browns Ferry Procedures 2/3-SR-3.3.3.1.4(HCT) for valves 2/3-FCV-74-46, 2/3-SHV-74-91, and 3-SHV-74-150. The Browns Ferry, Units 2 and 3, TS SR 3.3.3.1.4 Frequency refers to the SFCP. However, the request states that the proposed alternative testing will be performed at the ASME OM Code paragraph ISTC-3700 frequency of at least once every two years.

    a. If this alternative is authorized, confirm that TVA will perform the alternative testing at least once every two years as specified in paragraph ISTC-3700, and that the frequency will not be decreased unless authorized by the NRC in response to a 10 CFR 50.55a(z) alternative request, or by use of an applicable ASME OM Code Case endorsed in RG 1.192 as incorporated by reference in 10 CFR 50.55a.
    b. Explain how the frequency will remain consistent with the ASME OM Code requirement as incorporated by reference in 10 CFR 50.55a for the Fifth 10-Year IST interval.

RAI-BFN-IST-03

1. The current BFN Units 1, 2, and 3 Fourth 10-Year Interval IST Program Plan (ML13291A384) references Browns Ferry Procedures 1/2/3-SR 3.3.3.1.4(A) for valves 1/2/3-FCV-1-168, -169, -170, and -171. The TS SR 3.3.3.1.4 Frequency refers to the SFCP. However, the request states that the proposed alternative

testing will be performed at the OM Code paragraph ISTC-3700 frequency of at least once every two years.

a. If this alternative is authorized, confirm that TVA will perform the alternative testing at least once every two years as specified in ISTC-3700, and that the frequency will not be decreased unless authorized by the NRC in response to a 10 CFR 50.55a(z) alternative request, or by use of an applicable ASME OM Code Case endorsed in RG 1.192 as incorporated by reference in 10 CFR 50.55a.
b. Explain how the frequency will remain consistent with the ASME OM Code requirement as incorporated by reference in 10 CFR 50.55a for the Fifth 10-Year IST interval.

RAI-BFN-IST-04

1. Alternative Request BFN-IST-04, Section V, "Proposed Alternative", states:

   > TVA proposes to test MSRVs [Main Steam Relief Valves] in accordance with the OM Code Mandatory Appendix I requirements for Class I Main Steam Pressure Relief Valves with Auxiliary Actuating Devices.

   Section VI, "Basis for Proposed Alternative," sixth paragraph states:

   > Mandatory Appendix I, I-3310 provides sufficient test requirements to ensure the MSRVs are capable of remote manual operation and automatic operation at set pressure including verification of the pressure integrity and stroke capability of the air actuator and verification of operation and electrical characteristics of position indicators. TVA considers the testing required by Mandatory Appendix I to fully satisfy the intent of 10 CFR 50.55a(b)(3)(xi).

   Explain how I-3310 will be used to verify the open and closed positions of these valves.

2. For the MSRVs, the BFN Units 1, 2, and 3 Fourth 10-Year Interval IST Program Plan (ML13291A384) references BFN procedures 1/2/3 SI-3.2.9, 0-SR-3.4.3.1.a, 0-SR-3.4.3.1.b and 1/2/3-SR-3.4.3.2. The Browns Ferry TS SR 3.4.3.2 Frequency refers to the SFCP. Mandatory Appendix I specifies the test frequencies for Class 1 pressure relief devices.

   a. If this alternative is authorized, confirm that TVA will perform the alternative testing as specified in Mandatory Appendix I, and that the frequency will not be decreased unless authorized by the NRC in response to a 10 CFR 50.55a(z) alternative request, or by use of an applicable ASME OM Code Case endorsed in RG 1.192 as incorporated by reference in 10 CFR 50.55a.
   b. Explain how the frequency will remain consistent with the ASME OM Code requirement as incorporated by reference in 10 CFR 50.55a for the Fifth 10-Year IST interval.

RAI-BFN-IST-05

1. TVA submitted Alternative Request BFN-IST-05 as a request under 10 CFR

50.55a(z)(1) that the alternative provides an acceptable level of quality and safety. This request appears to be more applicable to a hardship request under 10 CFR 50.55a(z)(2). Discuss any concerns related to an evaluation of this request under 10 CFR 50.55a(z)(2), and provide any additional information needed to support a (z)(2) request if TVA decides that (z)(2) is appropriate.

2. Alternative Request BFN-IST-05, Section III, "Applicable Code Requirements," in the last sentence states that "position verification for active MOVs [motor-operated valves] shall be tested in accordance with Division 1, Mandatory Appendix III." Paragraph (e) in Section III-3300, "Inservice Test," in Appendix III states that "Remote position indication shall be verified locally during inservice testing or maintenance activities." In that the capability of MOV diagnostics to verify valve obturator position depends on the valve type and its performance, explain how TVA plans to implement the requirements in 10 CFR 50.55a(b)(3)(xi) as part of the Appendix III program for MOVs at Browns Ferry.

3. The Browns Ferry, Units 1, 2, and 3, Fourth 10-Year Interval IST Program Plan (ML13291A384) describes testing details regarding valves 0-FCV-67-1, 0-FCV-67-5, 0-FCV-67-8, and 0-FCV-67-11 and references Procedures 0-SI-4.5.C.1(A3-COMP) and 0-SI-4.5.C.1(A3). Explain how the frequency of the valve position indication will remain consistent with the ASME OM Code requirement as incorporated by reference in 10 CFR 50.55a, or an authorized alternative, for the Fifth 10-Year IST interval.