



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 21, 2010

Mr. R. M. Krich  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
3R Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 1 - REQUEST FOR ADDITIONAL  
INFORMATION REGARDING REQUEST FOR RELIEF 1-ISI-26, RISK  
INFORMED INSERVICE INSPECTION PROGRAM (TAC NO. ME3405)

Dear Mr. Krich:

By letter dated February 11, 2010, Tennessee Valley Authority submitted a request for relief from certain inservice inspection requirements in Section XI of the American Society of Mechanical Engineers Code for the Browns Ferry Nuclear Plant, Unit 1.

Based on our review of your submittal, the U. S. Nuclear Regulatory Commission staff finds that a response to the enclosed request for additional information is needed before we can complete the review.

This request was discussed with your staff on August 12, 2010, and it was agreed that a response would be provided within 30 days of the issuance of this letter.

If you have any questions, please contact me at (301) 415-1055.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Gratton".

Christopher Gratton, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-259

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

RISK-INFORMED INSERVICE INSPECTION RELIEF REQUEST 1-ISI-26

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-259

By letter dated February 11, 2010, the Tennessee Valley Authority (TVA) submitted a request for relief (1-ISI-26) from selected requirements of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) at the Browns Ferry Nuclear Plant (BFN), Unit 1. The request for relief applies to the second 10-year inservice inspection (ISI) interval, in which the licensee adopted the 2001 Edition with 2003 Addenda.

1. On page E1-4 of the submittal, the proposed alternative to the ISI program states that it is described in Code Case N-577 (N-577). The U.S. Nuclear Regulatory Commission (NRC) listed N-577 in Regulatory Guide 1.193, "ASME Code Cases Not Approved for Use." The NRC staff has accepted licensees' referencing N-577, Table 1 in submittals requesting relief from selected requirements of the ASME Code. If sections, other than Table 1 in N-577 are used in the proposed alternative, provide a description of the sections, their application, and technical justification.
2. On page E1-3 of the introduction, the submittal states the purpose and lists references describing the risk-informed (RI) process. In Section 2 on page E1-4, the statement is made that the alternative RI-ISI program for piping is described in N-577. In Section 3 on page E1-5, the statement is made that the processes used to develop the RI-ISI program are consistent with the methodology described in N-577 and Westinghouse Topical report WCAP-14572, as modified by the September 30, 1998, letter to NRC, with deviations. A composite of the three descriptions indicate that the description of the proposed alternative in Section 2 is incomplete. Provide a resolution for these differences or a discussion as to the purpose for the differences.
3. Section 2.2 of the submittal states that except for intergranular stress corrosion cracking (IGSCC), all other augmented programs listed in the BFN surveillance instruction are unaffected by this submittal. As for IGSCC, the weld selection and inspection frequency is also unchanged. Table 3.8-1 shows augmented examinations. Discuss the applicability of these augmented examinations (in Table 3.8-1) to the proposed RI-ISI program. Discuss the examinations (nondestructive examination (NDE) method, examination volume, differences in NDE technique, etc.) that will be performed to detect other degradation mechanisms that may occur at the same locations being examined under an augmented inspection program.
4. In the introduction on page E1-3, the submittal states that the RI-ISI program is consistent with WCAP-14572, Revision 1-NP-A with listed deviations. After the issuance of WCAP-14572, Revision 1-NP-A, the topical report was updated with later revision(s), supplement(s) and addenda. Identify the updates to WCAP-14572, Revision 1-NP-A, if any, that apply to the proposed alternative.

Enclosure

5. TVA's determination of the segment failure probability is determined by summing several individual weld failure rates instead of combining all the degradation mechanisms into one weld and calculating a segment failure rate. This approach deviates from the approved WCAP method. As stated in your submittal, BFN performed a sensitivity study for Unit 3 that compared the TVA method to the approved WCAP method. The results of this study indicated that RI-ISI results (i.e., similar set of high safety significant segments) equivalent to those from the approved method were obtained. This issue was addressed in the Unit 2 evaluations by noting the similarity between Units 2 and 3, and concluding that the Unit 3 evaluations were equivalent to those from the approved Unit 2 method. However, BFN Unit 1 does not appear to be similar to Unit 2 or Unit 3. Please discuss any differences that would affect degradation mechanisms (i. e., differences in pipe or weld materials, differences in designs affecting RI-ISI, differences in monitoring equipment, etc.), number of RI-ISI segments, or any other differences that could affect the RI-ISI program.
6. In Section 3.6 on page E1-11, the submittal lists the different technical skills possessed by representatives on the expert panel. The list is a subset of the technical skills listed in the WCAP. Provide the reason for excluding any particular expertise mentioned for the expert panel in WCAP.
7. In Section 5 on page E1-23, the submittal identified 66 RI-ISI examination locations. For these welds, provide the weld identification, ASME Examination Category-Item Number, RI-ISI Item Number, examination methods, and approved examination relief requests (that apply and reason for requesting relief). (Note: Table 3.8.1 in the submittal has some of the information.)
8. On page E1-4, Section 2.2 of the submittal, it states that the inspection frequency specified in BWRVIP-75 is unaffected by this submittal except for the deviation identified in Section 3 of the submittal, which states that segment failures that could result in a large loss-of-coolant accident would be examined according to BWRVIP-75. Identify the BWRVIP-75 augmented examinations and frequency of examinations that will not be performed because of the RI-ISI program.
9. Table 3.8-1 of the submittal assigns three different types of examinations: flow accelerated corrosion (FAC), stress, and IGSCC. Are the examination methods for these examinations the same as the examination methods required by ASME Code, Section XI? Are all the FAC inspections referenced in Table 3.8-1 to be performed in the second interval?

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*/RA/*

Christopher Gratton, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
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