



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

September 12, 2014

10 CFR 50.55a

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

**Subject: American Society of Mechanical Engineers, Code Section XI
Inservice Inspection Program for the Unit 1 Second Ten-Year
Inspection Interval, Unit 2 Fourth Ten-Year Inspection Interval,
and Unit 3 Third Ten-Year Inspection Interval, Request For An
Alternative ISI-45**

In accordance with Title 10 of the U.S. Code of Federal Regulations (CFR) Part 50, Section 55a, Paragraph (a)(3)(i), the Tennessee Valley Authority (TVA) is requesting an alternative from inservice inspection (ISI) requirements pertaining to Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, so as to align the three separate ISI interval dates of the three Browns Ferry Nuclear Plant (BFN) units to a single interval date. Currently, BFN operates with each unit on a different 10-year ISI Program update schedule. This required operation has led to some challenges in maintaining and managing the three separate ISI Programs at BFN. The proposed alternative adopts the same 10-year ISI interval date (February 1, 2016) for each BFN unit. This change would enable BFN to work under one set of rules for ISI, while still providing an acceptable level of quality and safety. The enclosure to this letter contains BFN Units 1, 2, and 3 request for an alternative number ISI-45, for NRC review and approval.

TVA requests approval of this request for an alternative within one year from the date of this letter, which should allow a sufficient period of time for TVA to implement the approved request for alternative by the planned implementation date of February 1, 2016.

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There are no new regulatory commitments in this letter. If you have any questions, please contact Mr. Jamie L. Paul at (256) 729-2636.

Respectfully,



K. J. Polson
Site Vice President

Enclosure: Browns Ferry Nuclear Plant, Units 1, 2, and 3; American Society of
Mechanical Engineers, Section XI Code Inservice Inspection
Program, Request For An Alternative ISI-45

cc (w/Enclosure):

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

Enclosure

Tennessee Valley Authority Browns Ferry Nuclear Plant Units 1, 2, and 3

American Society of Mechanical Engineers, Section XI Inservice Inspection Program,

Request For An Alternative ISI-45

Executive Summary

In accordance with Title 10 of the U.S. Code of Federal Regulations (CFR) Part 50, Section 55a, Paragraph (a)(3)(i), the Tennessee Valley Authority (TVA) is requesting an alternative from inservice inspection (ISI) requirements pertaining to Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, so as to align the three separate ISI interval dates of the three Browns Ferry Nuclear Plant (BFN) units to a single interval date. Currently, BFN operates with each unit on a different 10-year ISI Program update schedule (the next scheduled interval update for Unit 1 is June 1, 2017; for Unit 2 is May 25, 2021; and for Unit 3 is November 18, 2015). This situation has led to some challenges in maintaining and managing the three separate ISI Programs at BFN. The proposed alternative to adopt the same 10-year ISI interval date for each BFN unit would enable BFN to work under one Edition and Addenda of Section XI, while still providing an acceptable level of quality and safety.

Background

BFN Units 1, 2, and 3 entered commercial service on August 1, 1974, March 1, 1975, and March 1, 1977, respectively. These commercial service start dates established the initial inspection intervals for ISI of the units. Due to extended shutdowns of all three BFN units in the years since entering commercial service, these ISI interval dates were altered in accordance with ASME B&PV Code, Subsection IWA-2430(e) of the 2001 Edition with 2003 Addenda of Section XI. Every ten (10) years, an update to the ISI Program is required, in accordance with 10 CFR 50.55a(g)(4)(ii). With the three BFN units on different 10-year ISI schedules, maintaining and managing the three ISI Programs at BFN has been challenging. Currently, BFN is complying with two different Editions/Addenda of Section XI, and a third Edition/Addenda being required in less than two years. This will make maintaining and managing the three ISI Programs even more challenging. Therefore, in accordance with regulation 10 CFR 50.55a(a)(3)(i), TVA requests an alternative to the ASME Code and CFR requirements so as to align the ISI interval dates of the three BFN units to the same schedule. This change will enable BFN to work under just one set of ASME Code Section XI Editions/Addenda rules for ISI.

Plant/Units for Which Relief is Requested

- Browns Ferry Nuclear Plant Unit 1, Docket No. 50-259
Commercial Service Date: August 1, 1974
Next Scheduled Interval Update: June 1, 2017
Current Section XI Code: ASME Section XI 2001 Edition with 2003 Addenda

Enclosure For BFN Request For An Alternative ISI-45

- Browns Ferry Nuclear Plant Unit 2, Docket No. 50-260
Commercial Service Date: March 1, 1975
Next Scheduled Interval Update: May 25, 2021
Current Section XI Code: ASME Section XI 2004 Edition
- Browns Ferry Nuclear Plant Unit 3, Docket No. 50-296
Commercial Service Date: March 1, 1977
Next Scheduled Interval Update: November 18, 2015
Current Section XI Code: ASME Section XI 2001 Edition with 2003 Addenda

Code of Federal Regulations and ASME Section XI Requirements

10 CFR 50.55a(g)(4)(ii) - Inservice examination of components and system pressure tests conducted during successive 120-month inspection intervals must comply with the requirements of the latest Edition and Addenda of the Code incorporated by reference in paragraph (b) of this section 12 months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed in paragraph (b) of this section.

ASME Section XI, 2007 Edition with Addenda through 2008 [latest approved in 10 CFR 50.55a(b)(2)]

- Subsection IWA-2430(b) Inspection Intervals - The inspection interval shall be determined by calendar years following placement of the plant into commercial service.
- Subsection IWA-2431 - Successive Inspection Intervals - 10 years following the previous inspection interval.
- Table IWB-2411-1, Inspection Program
- Table IWC-2411-1, Inspection Program
- Table IWD-2411-1, Inspection Program
- Table IWF-2410-1, Inspection Program

Proposed Alternative

TVA is requesting approval to use an alternative to the timetable required by ASME Section XI and the Code of Federal Regulations for updating the ISI program for BFN. TVA proposes to start the next inspection interval for BFN Units 1, 2, and 3 on February 1, 2016. TVA requests the start date for the remaining subsequent 120 month interval ISI programs be the same for all three BFN units.

This alternative will apply to the ISI, Pressure Test, and Repair Replacement Activity Programs. Examinations performed under Subsection IWE will not be affected by this request for an alternative. BFN Units 1, 2, and 3 employ a General Electric Company Mark 1 steel containment design consisting of a drywell and pressure suppression chamber. The requirements of Subsection IWL are not applicable to the steel containment (Class MC) vessels utilized at BFN.

Basis for the Proposed Alternative

Currently, BFN's three units have different inspection interval schedules. There are three different ISI Programs using two different Code Editions and Addenda. When the next interval update occurs, which will be for BFN Unit 3 in November 2015, the three units will be using three different Editions and Addenda of ASME Section XI.

On July 1, 2010, TVA requested the use of the 2004 Edition of ASME Section XI for BFN Units 1 and 3 for Repair Replacement Activities (Reference 1). At that time, BFN Unit 2 was adopting the 2004 Edition of ASME Section XI as part of the regular 10-year update process. Updating the other BFN units (i.e., BFN Units 1 and 3) to the 2004 Edition of Section XI for Repair/Replacement Activity's was requested so that all three units were working to the same rules, reducing the chance for potential errors in this area. The NRC approved this request on May 13, 2011 (Reference 2).

There are distinct advantages for the BFN units to be on the same ISI schedule and Edition of ASME Section XI. There are fewer procedures to maintain and procedures will be meeting the requirements of one Edition/Addenda of the Code instead of several versions. The ISI Program documents can be combined into one document covering all three units, which reduces the chance of applying incorrect ISI requirements. One set of procedures and documents reduces the administrative burden of complying with ISI requirements without a reduction in the quality of the ISI program or the safety of the plant.

A review of the current inspection intervals and outage schedules for BFN was performed. Units 1 and 3 are due to be updated within 19 months of each other (Unit 1 on June 1, 2017 and Unit 3 on November 18, 2015). Unit 2 will be almost half way through its current inspection interval on the proposed interval start date of February 1, 2016.

Proposed Alternative Requirements

TVA proposes that the three units at BFN start their next inspection intervals on February 1, 2016. Examinations performed after this date will be performed to procedures complying with the selected Edition of ASME Section XI. The Edition and Addenda of ASME Section XI chosen for the interval updates will be in accordance with regulation 10 CFR 50.55(g)(4)(ii), which is predicted to be the 2007 Edition with 2008 Addenda.

Non-destructive type examinations (i.e., NDEs) on piping and components that have not been completed for the existing interval will be performed as required. Examinations performed before the proposed interval updates will meet or exceed the minimum percentage requirements for that interval. In addition, the number of examinations that would be required for the current interval will still be met as well as meeting the requirements for the proposed new intervals. In no case will the number of examinations be reduced from what would have been required if the interval dates were to remain as scheduled. Augmented examinations of welds and components required by NRC commitments will be performed as required.

All examinations required by both the current Code and the later Code Edition/Addenda will be performed during the overlap period of the intervals. Subsequent 10-year intervals will be in accordance with the applicable rules in force at that time.

Enclosure For BFN Request For An Alternative ISI-45

Administrative procedures, NDE procedures, and ISI documents will be updated to meet the requirements of the selected Edition of Section XI on February 1, 2016. All requirements of the new ISI Program will be implemented at that time.

For BFN Unit 1, the proposed change in the interval date will leave only one outage left in the currently scheduled interval. All examinations that would have been scheduled for that outage will still be performed under the revised schedule.

For BFN Unit 2, the proposed change in the interval date will leave three outages left in the currently scheduled interval. Two outages have already been completed. All examinations that would have been scheduled for the remaining outages will still be performed under the revised schedule.

For BFN Units 1 and 2, when these examinations are completed, the scheduling of examinations will revert to the requirements of the applicable Edition and Addenda of ASME Section XI.

For BFN Unit 3, the proposed change in the interval date will have no effect on the schedule of examinations. All examinations for the third interval will be completed prior to the start of the fourth interval under the revised schedule.

Examination schedules for the Reactor Vessels for all three units are not predicted to change. In addition, the System Leakage Test of the Class 1 system, in accordance with IWB-5222(b), will be performed as currently scheduled and will be re-scheduled approximately every 10 years.

Augmented examinations of welds and components required by NRC commitments will continue to be performed as required by those commitments; these examinations are unaffected by this request for an alternative.

Justification of Relief

By altering the ASME Section XI inspection intervals so all three BFN units begin on the same date, it reduces the administrative burden of complying with two or more different Editions of ASME Section XI. The possibility of working to the wrong procedures or documents (both NDE and administrative) is reduced as they would all be written to the same set of rules and Edition/Addenda of Section XI.

Two of the three BFN units will be transitioning to the latest approved Code Editions and Addenda earlier than what would normally be required. Using the latest rules would enhance the safety of the BFN units. The proposed action does not result in a reduction of examinations for any of the units and provides an acceptable level of safety and quality.

Implementation Schedule

TVA plans to update the ISI Programs for BFN Units 1, 2, and 3 with an effective date of February 1, 2016. The new 10-year interval schedule will remain in effect for subsequent ISI Intervals.

Precedence

Nuclear Management Company, LLC requested a similar alternative ISI interval to align ASME Section XI ISI Programs for each Point Beach Nuclear Plant (PBNP) unit to the same ISI interval in 2001 (Reference 3). The NRC subsequently approved the PBNP request on June 18, 2001 (Reference 4).

References

1. TVA Letter to the NRC, [Browns Ferry Nuclear Plant, Units 1 and 3] "American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Inservice Inspection Program, Request to Use Subsequent Edition of ASME Section XI Code for Repair and Replacement Activities," dated July 1, 2010 [ADAMS Accession No. ML101870599].
2. NRC Letter to TVA, "Browns Ferry Nuclear Plant, Units 1 and 2 – Request to Use Subsequent Edition of ASME Code Repair and Replacement Activities (TAC Nos. ME4672 and ME4673)," dated May 13, 2011 [ADAMS Accession No. ML11108A058].
3. Nuclear Management Co., LLC Letter to the NRC, " Dockets 50-266 and 50-301, ASME Section XI Relief Requests, Unit 1 RR-1-23 and Unit 2 RR-2-29, Point Beach Nuclear Plant, Units 1 and 2," dated January 8, 2001 [ADAMS Accession No. ML010180254].
4. NRC Letter to Nuclear Management Co., LLC, "Point Beach Nuclear Plant, Units 1 and 2 – Third and Fourth 10-Year Interval Inservice Inspection Program Plan Relief Requests RR-1-23 (Unit 1) and RR-2-29 (Unit 2), (TAC Nos. MB1076 and MB1077)," dated June 18, 2001 [ADAMS Accession No. ML011570015].