



Tennessee Valley Authority  
1101 Market Street, LP 3R  
Chattanooga, Tennessee 37402-2801

**R. M. Krich**  
Vice President  
Nuclear Licensing

April 14, 2010

10 CFR 50.4  
10 CFR 50.55a

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

Browns Ferry Nuclear Plant, Unit 1  
Facility Operating License No. DPR-33  
NRC Docket No. 50-259

**Subject: Revision to the American Society of Mechanical Engineers, Section XI Inservice Inspection Program for the Unit 1 Second Ten-Year Inspection Interval, Request for Relief 1-ISI-26, Risk-Informed Inservice Inspection Program**

**Reference:** Letter from Tennessee Valley Authority to U.S. Nuclear Regulatory Commission, American Society of Mechanical Engineers, Section XI Inservice Inspection Program for the Unit 1 Second Ten-Year Inspection Interval, Request for Relief 1-ISI-26, Risk-Informed Inservice Inspection Program, dated February 11, 2010

The reference letter requested relief from certain Inservice Inspection (ISI) requirements in Section XI of the American Society of Mechanical Engineers Code for the Browns Ferry Nuclear (BFN) plant, Unit 1. An alternative to the Section XI requirements was requested for the BFN, Unit 1 Second Ten-Year Inspection Interval. Enclosure 1 to the reference letter contained the BFN, Unit 1 Request For Relief 1-ISI-26, Risk-Informed Inservice Inspection Program, for NRC review and approval in accordance with 10 CFR 50.55a, Codes and Standards.

An error was discovered in the previously submitted BFN Unit 1 Request For Relief 1-ISI-26, Risk Informed Inservice Inspection Program. Page E1-3 of the enclosure stated incorrectly that the Probabilistic Risk Analysis (PRA) model updates are scheduled for 24-month intervals. The governing Tennessee Valley Authority's administrative procedure requires the updates at a

AO47  
NR2

U.S. Nuclear Regulatory Commission  
Page 2  
April 14, 2010

frequency equating to a maximum interval of 48 months. The error was discovered during preparation of a similar request for relief recently submitted for BFN, Unit 2. The recent BFN, Unit 2 submittal specified the correct update frequency (48 months) for the PRA model updates.

The enclosure provides a replacement page for the BFN, Unit 1, Request For Relief 1-ISI-26, Risk-Informed Inservice Inspection Program.

There are no new regulatory commitments in this letter. If you have any questions, please contact Terry Cribbe at (423) 751-3850.

Respectfully,



R. M. Krich

Enclosure:

Corrected Replacement Page for Request for Relief 1-ISI-26, Risk-Informed Inservice Inspection Program

cc (Enclosure):

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

**Enclosure**

**Tennessee Valley Authority  
Browns Ferry Nuclear Plant  
Unit 1**

**American Society of Mechanical Engineers,  
Section XI Inservice Inspection Program,  
Unit 1, Second Ten-Year Inspection Interval**

**Corrected Replacement Page for Relief 1-ISI-26,  
Risk-Informed Inservice Inspection Program**

---

## 1. INTRODUCTION

Inservice inspections (ISI) for Browns Ferry Nuclear Plant (BFN) are currently performed on piping welds to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI, 2001 Edition with 2003 Addenda, as required by 10CFR50.55a, "Codes and standards." BFN Unit 1 is currently in the second ten-year inspection interval as defined by the ASME Code for Program B.

The purpose of this submittal is to request a change to the ISI program plan for piping through the use of a risk-informed ISI program. The risk-informed process used in this submittal is described in Regulatory Guides 1.174 (Ref. 6.7) and 1.178 (Ref. 6.8) and is consistent with the methodology described in ASME Section XI, Code Case N-577 (Ref. 6.12) and WCAP-14572, Revision 1-NP-A (Ref. 6.4), with the deviations listed in Section 3.

As a risk-informed application, this submittal meets the intent and principles of Regulatory Guide 1.174 (Ref. 6.7). Further information is provided in Section 3.11 relative to defense-in-depth.

### PRA Quality

The scope, level of detail, and quality of the BFN probabilistic risk assessment (PRA) is sufficient to support a technically defensible and realistic evaluation of the risk change for this proposed application.

The BFN PRA model, dated December 7, 2009 was used to evaluate the consequences of pipe ruptures during operation in Mode 1. The base core damage frequency (CDF) and base large, early release frequency (LERF) from this version of the PRA model are  $7.18\text{E-}06$  /yr and  $2.60\text{E-}06$  /yr, respectively.

PRA model updates are scheduled for 48-month intervals. The administrative guidance for this activity is contained in Tennessee Valley Authority (TVA) administrative procedures.

The Risk-Informed Inservice Inspection (RI-ISI) evaluation included a determination that the PRA model and supporting documentation accurately reflects the current plant configuration and operational practices consistent with its intended application.

After an extensive upgrade effort of the PRA for BFN, the BFN Units 1, 2 and 3 Internal Events PRA Peer Review was performed in May 2009 at the TVA offices in Chattanooga, TN, using the NEI 05-04 (Ref. 6.13) process, the ASME PRA Standard, and Regulatory Guide 1.200, Rev. 2 (Ref. 6.9). A separate review was performed for the Internal Flooding portion of the BFN PRA in September 2009. The Internal Flooding Peer Review also used the NEI 05-04 (Ref. 6.13) process, the ASME PRA Standard (Ref. 6.10), and Regulatory Guide 1.200, Rev. 2 (Ref. 6.9). A team of independent PRA experts from nuclear utility groups and PRA consulting organizations carried out these Peer Review Certifications.

The purpose of these reviews was to provide a method for establishing the technical adequacy of the PRA for the spectrum of potential risk-informed plant licensing applications for which the