



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

February 13, 1997

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

Gentlemen:

In the Matter of)	Docket Nos. 50-259
Tennessee Valley Authority)	50-260
		50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3 -
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI,
SUBSECTION IWE - REQUEST FOR RELIEF FROM FULL COMPLIANCE WITH
THE REPAIRS AND REPLACEMENTS PROGRAM FOR CONTAINMENT
STRUCTURES**

In accordance with the provisions of 10 CFR 50.55a(a)(3)(i) and 10 CFR 50.55a(a)(3)(ii), TVA is requesting relief from meeting certain ASME Code requirements delineated in the 10 CFR 50.55a rule change dated August 8, 1996, (Federal Register, Volume 61, Number 154, page 41303). Specifically, TVA is requesting relief for an interim period to the end of the BFN Unit 2 Cycle 9 refueling outage (currently scheduled to start September 19, 1997 and end October 24, 1997) from full compliance with the rule change in regard to implementation of Repair and Replacement activities in accordance with ASME Section XI, 1992 Edition with the 1992 Addenda for Class MC (metal containments) components.

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The rulemaking incorporated a provision, [10 CFR 50.55a(g)(6)(ii)(B)(1)], for an expedited examination schedule for ASME Section XI, Subsection IWE, Class MC components. This provision requires licensees to implement

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the inservice examinations specified for the first period (40-months) of the inspection interval (120-months) specified in the 1992 Edition with 1992 Addenda of ASME Section XI, Subsection IWE by September 9, 2001.

In a letter to the Nuclear Energy Institute dated November 6, 1996, NRC stated that the Repair and Replacement requirements for ASME Section XI, Subsection IWE became effective coincident with the effective date of the rule change (September 9, 1996). However, the staff did recognize that immediate compliance may be difficult and stated that in the case of extreme hardship or unusual difficulty without a compensating increase in the level of quality or safety or where there is a justifiable need to use an alternate that provides an acceptable level of safety, that relief requests from the Repair and Replacement requirements of IWE would seem reasonable.

TVA is developing a program for compliance with ASME Section XI, Subsection IWE. However, the program is extensive and will not be ready for all Repair and Replacement activities that could be required during the next refueling outage for each BFN unit. The enclosed relief request is being submitted to NRC to outline to the staff an interim program to address unscheduled work activities for components that fall within the scope of Repairs and Replacements for ASME Section XI, Subsection IWE.

For the upcoming Unit 3 Cycle 7 refueling outage, scheduled to begin on February 21, 1997, and the Unit 2 Cycle 9 refueling outage scheduled to begin on September 19, 1997, TVA is reviewing scheduled work activities to identify components that fall under the ASME Section XI, Subsection IWE, Repair and Replacement requirements. For those Repair and Replacement components identified during this review, TVA will take the necessary steps to comply with the requirements of ASME Section XI, Subsection IWE, 1992 Edition, 1992 Addenda, to the best of its understanding of the Code. As a result of these actions, TVA does not anticipate requesting relief for scheduled work activities for the Unit 3 Cycle 7 or the Unit 2 Cycle 9 refueling outages. However, for emergent work activities in which Code compliance cannot be practicably achieved, TVA may request relief on an expedited basis employing the interim processes outlined in the enclosed relief request.

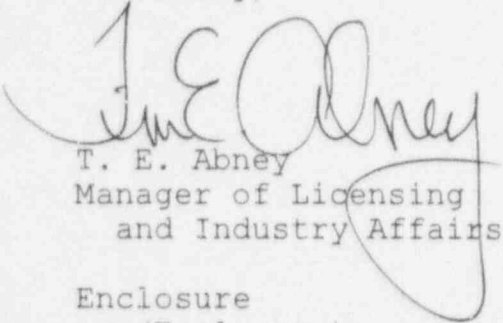
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TVA intends to be in full compliance with Subsection IWE for Repairs and Replacements for Units 2 and 3 by the end of the Unit 2 Cycle 9 refueling outage. The Unit 2 Cycle 9 refueling outage is currently scheduled to end on October 24, 1997. If you have any questions please contact me at (205) 729-2636.

Sincerely,



T. E. Abney
Manager of Licensing
and Industry Affairs

Enclosure

cc (Enclosure):

Mr. Mark S. Lesser, Branch Chief
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

NRC Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, Alabama 35611

Mr. J. F. Williams, Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

ENCLOSURE

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 1, 2, AND 3

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
SECTION XI, SUBSECTION IWE,
REPAIRS AND REPLACEMENTS PROGRAM FOR CONTAINMENT STRUCTURES

REQUEST FOR RELIEF

(SEE ATTACHED)

**Tennessee Valley Authority
Browns Ferry Nuclear Plant (BFN)
ASME Section XI, Subsection IWE
Request for Relief**

Unit: BFN Units 1, 2, and 3

Components: All components which fall under the scope of ASME Section XI, Subsection IWE. The components will be primarily those pressure-retaining components associated with the steel containment vessel, any load-bearing components (e.g. supports) associated with the pressure-retaining function, and any integral attachments to the steel containment vessel.

ASME

Code Class: MC (or equivalent)
Note: Piping system components that penetrate containment, and are included under the jurisdiction of the ASME Section XI program, are generally classified as Code Class 2 (or equivalent). These components are covered by TVA's current ASME Section XI repairs and replacements (R&R) program and are not included within the applicability of this request-for-relief.

Code

Requirement: Implementation of the requirements of ASME Section XI, Subsection IWE, for R&R to containment structures, as defined in Articles IWE-4000, IWE-7000, paragraphs IWE-2500(b) and IWE-2600(b); and the post-repair and replacement requirements shown in Code paragraphs IWE-2200(d), (e), (f), (g); Articles IWF-4000 and IWF-7000; of the 1992 Edition with the 1992 Addenda of the ASME Code, Section XI; and paragraph -2220 of ASME Code Case N-491; commencing on the effective date of the 10CFR50.55a rule change, September 9, 1996.

Code Requirement

From Which Relief

is Requested: Pursuant to the provisions of 10CFR 50.55a(a)(3)(i), and 10 CFR 50.55a(a)(3)(ii), TVA is requesting relief from meeting certain ASME Code requirements delineated in the 10CFR 50.55a rule change dated August 8, 1996, (Federal Register, Vol.61, No. 154, page 41303). Specifically, TVA is requesting relief for an interim period to the end of the BFN Unit 2 Cycle 9 refueling outage (currently scheduled to start September 19, 1997 and end October 24, 1997) from full compliance with the rule change as it relates to the implementation of R&R activities in accordance with the ASME Boiler

and Pressure Vessel Code, Section XI, 1992 Edition with the 1992 Addenda for the Class MC (metal containments). This relief is requested on the basis that the proposed alternative, as delineated below, will provide an acceptable level of quality and safety (for the interim period) until the applicable specific site programs and procedures can be written and issued for use. In addition, immediate total implementation of the rule change for R&R activities will precipitate actions (i.e., scoping walkdowns, procedure revisions, system boundary drawings, ANII involvement, etc.) in a short period of time which would result in hardships and/or difficulties without a compensating increase in the level of quality and safety above that provided by the processes TVA currently uses to maintain the integrity of the site containment structures and components.

Background:

On September 9, 1996, a rule change to 10CFR50.55a was made effective that required licensees to initiate an advanced program and schedule for the implementation of the requirements of ASME Section XI, Subsections IWE and IWL as modified within the rule. This rule change required licensees to apply the requirements of Subsections IWE and IWL to the inservice inspection and repairs and replacements activities associated with primary metal and concrete containment structures, their supports, and appurtenances. The steel containment vessel provides the primary barrier in protecting the public from radioactive releases to the atmosphere in the event of leakage from the primary coolant systems piping components. It provides the pressure-retaining membrane for containment isolation.

The revised rule gave a required completion date of September 9, 2001, which allows five years to review the plant design, determine those attributes which are required to be included within the scope of the programs, create the necessary processes and procedures, and perform the required inspections. In parallel with this effort, Code based programs such as TVA's ASME Section XI Repair and Replacement Program would be revised to incorporate the ancillary program requirements.

Following the issuance of the rule, NRC program representatives verbally stated to various licensees that the rules for repairs and replacements on containment components and structures were required to be implemented on September 9, 1996, instead of September 9, 2001, as stated within the rule change. On September 19, 1996, the Nuclear Energy Institute (NEI) issued (on behalf of the nuclear operating utilities) a letter to the NRC requesting clarification on this issue.

On November 6, 1996, NRC issued a letter to the NEI clarifying their position on the applicability of the ASME Section XI rules and requirements for repairs and replacements associated with the recent rule change to 10 CFR 50.55(a). The November 6, 1996, letter to NEI states that the requirements for repairs or replacements on containment structures must be applied starting

September 9, 1996. TVA currently does not have the procedures and processes in place to fully comply with this interpretation.

**Alternative
Requirements:**

In an effort to comply with the stated NRC position that R&R programs must be implemented starting September 9, 1996, the following principles will be used during the interim period until the appropriately integrated programs and procedures can be written, approved for use, and issued for implementation.

INTERIM PROGRAM PRINCIPLES:

These principles are based on the fact that basic procedures for use in any repair or replacement (R&R) activity, associated with containment components, are in place in the form of the original design, construction, and installation requirements and procedures and the application of these requirements through TVA's Quality Assurance programs. Actual restoration of any containment component that needed repair would be required by the ASME Code to meet the original construction requirements as a minimum. The guidelines below will be considered site requirements and would be performed in addition to the current minimum TVA Nuclear Power Standard (NP STD) code program requirements.

1. These guidelines shall be applied to the primary metal containment structures, Code Class MC, pressure retaining components and their associated supports, integral attachments, and appurtenances.
2. Interim R&R activities shall be planned and implemented so as to provide for ANII review and involvement. These activities should follow the existing processes and procedures associated with the ANII oversight and to the extent outlined under these interim guidelines.
3. Containment R&R activity documentation shall include the use of existing NIS-2 procedures and reports, with minor revisions to accommodate provisions of this request for relief.
4. Inspection activities and NDE procedures used following R&R activities shall follow the requirements indicated in the original design, construction, and installation procedures.
5. In the case where specific preservice/baseline inspections (other than those addressed in item 4, above) are required by Subsection IWE, existing TVA NDE inspection examination procedures shall be used to perform these containment structure examinations to the extent possible. Where specific and unique examination and acceptance criteria are required by the R&R activity, existing NDE inspection techniques and the expertise of the examination personnel shall be employed in obtaining reasonable and practicable examination results for evaluation. If the specific Subsection IWE required examination(s) can be identified, and existing NDE procedures are fully qualified (in the judgment of TVA's

certified technical NDE Level III personnel) to perform the required examination; then, the Subsection IWE required examination shall be performed and documented. In this manner, the current NDE personnel qualifications and certifications would be sufficient, for interim use, until such time as the final containment inspection programs and accompanying NDE procedures are in place.

6. Containment structure pressure and leak rate testing shall follow the requirements established in conjunction with TVA's 10CFR 50 Appendix J program.
7. Materials procurement and associated documentation shall follow the current TVA safety-related component quality assurance guidelines to provide materials with quality levels at least equivalent to the original design requirements.
8. Special containment structure requirements encountered during R&R activities, such as the maintenance and repair of component corrosion protective coatings, shall follow the existing TVA programs and procedures.
9. Special processes such as welding and brazing activities in the repair of containment structure pressure boundary components and their supports shall follow the existing TVA programs and procedures, as appropriate.
10. Existing TVA ASME Section XI R&R program guidelines and definitions, such as the identification of maintenance activities that would be performed on containment structures and components, shall be used during this interim implementation period.
11. The current plans and schedules for the next scheduled Units 2 and 3 refueling outages shall be reviewed for work packages which could contain activities that would fall within the scope of ASME Section XI, Subsection IWE. These planned activities will be performed in compliance with ASME Section XI, Subsection IWE, 1992 Edition, 1992 Addenda requirements, to the best of TVA's understanding of the Code. Emergent work and issues will be evaluated on a case-by-case basis, as they are encountered, and the interim process of this request for relief applied.
12. Plant work planning personnel shall be thoroughly informed of these interim program principles.

Justification:

The Repairs and Replacements program is comprised of numerous elements including: procurement, design control, welding control, documentation, ISI boundary definition, reporting requirements, ANII review, and configuration management. Additionally, procedure revisions to comply with a different ASME Section XI Code Edition will require an extensive review process to ensure that each element is in compliance. Such a review requires a significant amount of man-power and time and would present an extreme hardship if immediate compliance with emergent work is required. In addition, implementation of the R&R requirements of the rule change, when the scope is not known to the fullest extent, could result in TVA inadvertently

omitting small specific components and details. This is particularly true for maintenance or modification activities in which plant personnel use boundary drawings in conjunction with plant procedures to determine if the activity is required to be performed as an ASME Section XI Repair or Replacement. The lack of fully developed technical and administrative controls places TVA in a position in which it could be in noncompliance with the rule change if a work activity was performed on a component which should have been included in the scope of the program

TVA is preceeding, as are other utilities, to review plant designs to determine what specifically should be included within the scope of the containment inspection program. The major components of the steel containment vessel would obviously be within the scope of the rule. TVA has performed a preliminary review and determined that the requirements of Subsection IWL do not apply to the free-standing metal containment structure at BFN. However, without a more detailed review, it is not possible to readily determine all the specific unit components which would be required to be included within the scope of Subsection IWE. Without the proper classification of these components with respect to the inspection categories in Table IWE 2500-1, it is not possible to completely ensure that, if repairs or replacements are made to these components, the proper preservice examinations are performed. In addition, without the proper programs being fully established, it is not possible, both technically and administratively, to control and ensure that all the requirements within the scope of the rule are being addressed to the fullest extent required.

It should be noted that any components within the scope of the rule are also within the scope of TVA's QA program. These components are generally categorized as TVA Safety Classification B. This corresponds to an ANS Safety Classification 2a. TVA's classifications impose strict Code and Quality Assurance requirements on work activities associated with these components. These requirements are also the rules that the Code would require to be part of any owner's ASME Section XI containment repair and replacements program. In addition, these requirements have consistently been used as a basis for containment structure work activities at BFN. The major differences between the current TVA QA program based R&R requirements and the ASME Section XI, Subsection IWE, based requirements are the performance of the required preservice examinations following the repair or replacement, and the involvement of the Authorized Nuclear Inservice Inspector.

TVA is in the planning process to fully develop the necessary programs for implementation of the Subsection IWE rules. Currently, the BFN preliminary schedule shows the necessary R&R procedures to be in place by August 8, 1997. In addition, TVA program personnel are planning to complete initial

reviews of design drawings by September 26, 1997. Walkdowns of these items for verification, are scheduled commencing with the next unit refueling outages (Unit 2, Cycle 9 and Unit 3, Cycle 8) after this initial design drawing review. The current schedule indicates that for Unit 2, BFN will begin actual first interval first period examinations for compliance to the new rule during the next unit refueling outage (Cycle 10) following the walkdowns. For Unit 3, the first interval first period examinations for compliance would begin during the same outage (Cycle 8) as the walkdowns. The BFN scheduled refueling outage start dates for the initial program inspections would be September 18, 1998 for Unit 3 and March 19, 1999, for Unit 2. Initial containment ISI inspections for BFN Unit 1 will be scheduled in conjunction with schedules established as the decision is made to restart the unit. These outage schedules may vary with unit operating conditions and circumstances.

Since initial program examinations will not actually start for several years, the requirement to fully implement the new rules for repairs and replacements immediately presents an undue impact to TVA without a corresponding increase in quality or safety. This judgment is based upon an evaluation of the differences between the current TVA QA programmatic requirements, the proposed interim requirements, and the new requirements of Subsection IWE.

Existing Repair and Replacement programs at BFN are currently written to meet the requirements of the 1989 Edition of Section XI of the ASME Boiler and Pressure Vessel Code with specific requirements from other base codes-of-record as applicable to the unit's current inspection interval. This Code will remain the base Code-of-Record for containment R&R programs during the proposed interim period. It should also be noted that the containment structure is subjected to the testing requirements of 10 CFR 50 Appendix J, the structures are included within the scope of the NRC Maintenance Rule and there have been no significant incidents which would indicate any safety concerns regarding structural integrity or ability to perform its intended safety function.

In summary, the above proposed interim process provides for the restoration of the containment structures (Code Class MC) following repairs and replacements to conditions that meet at least the original construction requirements, utilizes existing compatible preservice inspection procedures, provides for ANIL inspection and involvement, and initiates traceable documentation of the work performed. This interim program provides an alternate process for Repair and Replacement activities for containment structures and components that results in an acceptable level of quality and safety without the hardship and difficulty imposed by immediate compliance with the 10CFR50.55a rule change.