



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

February 10, 1997

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

Gentlemen:

In the matter of)	Docket Nos.	50-327
Tennessee Valley Authority)		50-328

SEQUOYAH NUCLEAR PLANT (SQN) - AMERICAN SOCIETY OF MECHANICAL
ENGINEERS (ASME) SECTION XI RELIEF REQUEST - SUBSECTION IWE

Pursuant to the provisions of 10CFR 50.55a(a)(3)(i), TVA is requesting relief from the requirements of ASME Section XI Code, Subsection IWE. The proposed request for relief is applicable to SQN's Repair and Replacement (R&R) program for containment components and structures.

Interim relief is requested until September 9, 1997. This would provide a period of time for TVA to review SQN's containment design and categorize specific containment structures and components that would fall within the scope of IWE for R&R activities. As an alternative during the proposed relief period, SQN's current R&R program, which is based on the 1989 Edition of the ASME Code, would serve as the base code-of-record for any containment R&R activities that might occur. TVA's proposed alternative will ensure that containment structures and components following repair or replacement meet their original construction requirements with traceable documentation of the work performed. TVA considers this alternative to be an acceptable level of quality and safety.

TVA is in the planning process of fully developing the necessary programs for implementation of the Subsection IWE rules. While TVA is developing these IWE programs, TVA is also making plant improvements that involve the replacement of five containment electrical penetrations. This work is scheduled during SQN's upcoming Unit 1 Cycle 8 refueling outage (Scheduled to begin March 22, 1997). This work will involve R & R activities and compliance with ASME code requirements. Accordingly, TVA requests NRC review and approval by April 15, 1997 to support the outage work.

A0471

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Please direct questions concerning this issue to D. V. Goodin at (423) 843-7734.

Sincerely,



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Enclosure

cc (Enclosure):

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Enclosure
Tennessee Valley Authority
Request for Relief
ASME Section XI, Subsection IWE
for
Sequoyah (SQN) Nuclear Plant

Unit: SQN Units 1 and 2

Components: 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 systems 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), 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 of 1-year (i.e. from September 9, 1996) from full compliance with the rule change as it is related to the implementation of R&R activities in accordance with ASME Boiler and Pressure Vessel Code, Section XI, of the 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 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 the NRC's position on the applicability of the ASME Section XI rules and requirements for repairs and replacements associated with the recent rule change to 10CFR 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 outlined below will be considered as 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, 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. As much as possible, 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 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 the results recorded. In this manner, the current NDE personnel qualifications and certifications would be sufficient, for interim use, until such time as final containment

inspection programs and the 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 of at least the 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 refueling outages shall be reviewed for work packages which could contain activities that would fall within these interim guidelines. Emergent work and issues will have to be evaluated on a case-by-case basis, as they are encountered, and the interim processes of this request-for-relief applied.
12. Plant work planning personnel shall be thoroughly informed of these interim program principles.

Justification:

TVA is just beginning, as are other utilities, to review our 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 SQN. However, without a more detailed review, it is not possible to readily determine all the specific site/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.

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 TVA's nuclear plants. 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 of fully developing the necessary programs for implementation of the Subsection IWE rules. Currently, our preliminary schedule shows that we are planning to have the necessary R&R procedures in place by August 8, 1997. In addition, TVA program personnel are planning to complete initial reviews of design drawings by September 26, 1997. Walk-downs of these items for verification, are scheduled commencing with the next available unit outages after this initial design drawing review. Our current preliminary schedule indicates that we will start our actual first period first interval examinations for compliance to the new rule on the next available outages at the specific sites, as currently scheduled. For SQN, the currently scheduled initial examination dates are September 4, 1998, for Unit 1 and on April 2, 1999, for Unit 2. 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's current outage plans and schedules 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. 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 work planning and implementation personnel omitting small specific components and details. The lack of fully developed technical and administrative controls places TVA in a position in which we could be found in non-compliance with the rule change if a work activity was performed on a component which should have been included in the scope of the program. The requirement to immediately implement a fully developed containment R&R program puts TVA in the position of having to pull back the current outage planned work activities and possibly delay their implementation until such time that the ISI and R&R procedures are in place. In some cases, this could delay much needed improvements which may effect overall plant reliability. R&R programs at TVA 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

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.

In addition, any actual work that has been performed during the period between September 9, 1996, and the incorporation of the interim measures outlined above will have been performed under the existing TVA QA program requirements. Since this work was performed in accordance with the TVA's current QA and ASME Section XI R&R programs, the work restored the associated containment structures to at least the minimum requirements of the original construction and installation standards. Therefore, no further action with respect to the new requirements would be warranted. In addition, this work will be captured within the inservice inspection programs for future inspections, as required by the fully developed containment ISI programs.

In summary, the above proposed processes provide for the restoration of the containment structures following repairs and replacements to conditions that meet at least the original construction requirements and provide for traceable documentation of the work performed. This interim process results in a level of quality and safety equivalent to that required under the 10CFR50.55a rule change.