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Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

September 1, 2011

10 CFR 50.55a(a)(3)(i)

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

Watts Bar Nuclear Plant, Unit 2
NRC Docket No. 50-391

**Subject: WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 - RELIEF REQUEST
TO USE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
CODE CASES N-801 AND N-802**

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA requests relief approval for the use of the provisions of approved ASME Code Cases N-801 and N-802. These Code Cases will be applied for specific use as part of the construction activities associated with the ASME Section III systems and components in WBN Unit 2.

Enclosures 1 and 2 provide TVA's request for relief to use the proposed alternative Code Cases. ASME Section III construction, fabrication, and installation activities on WBN Unit 2 are in progress with subcontractors who have the appropriate Code Symbol Stamps to complete the construction of WBN Unit 2. These relief requests address work to be performed by these contractors on components which previously received an ASME stamp but which require additional ASME work prior to filing of the ASME N-3 Code Data Report. Enclosure 3 contains the commitments associated with this request as well as prescribing the requirement to issue an inservice inspection report for repair and replacement activities performed following completion of WBN Unit 2 N-5 Code Data Reports. Further, TVA will ensure the NRC is informed of these repair/replacement activities at the time of occurrence to allow the staff the opportunity to conduct inspection of these activities.

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U. S. Nuclear Regulatory Commission
Page 2
September 1, 2011

If you have any questions in this matter, please contact William Crouch, Manager of WBN Unit 2 Nuclear Licensing and Industry Affairs at (423) 365-2004.

Respectfully,



David Stinson
Watts Bar Unit 2 Vice President

Enclosures:

1. Request for Relief to Use ASME Boiler and Pressure Vessel Code, Code Case N-801, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by Organization Other Than the N-Certificate Holder That Originally Stamped the Component Being Repaired, Section III, Division 1"
2. Request for Relief to Use ASME Boiler and Pressure Vessel Code, Code Case N-802, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by the N-Certificate Holder That Originally Stamped the Component, Section III, Division 1"
3. List of Commitments

cc (Enclosures):

U. S. Nuclear Regulatory Commission
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Atlanta, Georgia 30303-1257

NRC Resident Inspector Unit 2
Watts Bar Nuclear Plant
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U. S. Nuclear Regulatory Commission
Page 3
September 1, 2011

bcc (Enclosures):

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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT (WBN) UNIT 2

REQUEST FOR RELIEF TO USE ASME BOILER AND PRESSURE VESSEL CODE, CODE CASE N-801, "RULES FOR REPAIR OF N-STAMPED CLASS 1, 2, AND 3 COMPONENTS BY ORGANIZATION OTHER THAN THE N-CERTIFICATE HOLDER THAT ORIGINALLY STAMPED THE COMPONENT BEING REPAIRED, SECTION III, DIVISION 1"

Executive Summary:

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA is requesting approval for use of the provisions of Code Case N-801, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by Organization Other Than the N-Certificate Holder That Originally Stamped the Component Being Repaired Section III, Division 1."

In December 2010, Code Case N-801 was approved by the ASME. The case was published in Supplement 4 to the 2010 Edition of Code Cases: Nuclear Components. The case was approved in December, but not issued in Supplement 4 until July of 2011. Code Case N-801 allows N-Certificate Holders other than the N-Certificate Holder that originally stamped the components at WBN Unit 2 to perform repairs to N-Stamped components in accordance with ASME Section III. This Code Case will allow N-Certificate Holders at WBN Unit 2 to perform repairs of N-stamped components in support of N-5 Code Data Report completion. These components were installed between 1971 to the present. Many of the older components require refurbishment to meet or exceed design or Code requirements. Refurbishment may require replacement of Code and non-Code material or repair of pressure boundary material. Because the original N-Certificate Holder that stamped the component may no longer exist or maintain an N-Certificate, relief is necessary to perform the required work. Code Case N-801 will be applied at WBN Unit 2 to the repairs accomplished by the N-Certificate Holders at WBN Unit 2.

The WBN Unit 2 N-Certificate Holder with Overall Responsibility will ensure ASME Section III Division 1 repair activities to components are completed per Code Case N-801 by all WBN Unit 2 N-Certificate Holders prior to completion of N-5 Code Data Reports for each system.

I. Systems and Components Affected

This request to use the ASME Section III Code Case N-801 will be applicable to the WBN Unit 2 safety-related components required to be designed, fabricated, and constructed to the rules of the ASME Boiler and Pressure Vessel Code, Section III as defined by TVA, the Owner.

II. Applicable ASME Code Edition and Addenda

The Code of Record (COR) for ASME Section III piping systems designed by TVA is the 1971 edition up to and including the Summer 1973 Addenda. For those components ordered before the adoption of the Winter 1977 Addenda, the COR is that Code in effect on the date the contract with the ultimate manufacturer was placed. For those components ordered after the adoption of the Winter 1977 Addenda, the owner may establish a COR independent of the contract date and dating as early as three years prior to the date on which the construction permit application was filed. The COR will be established by the applicable ASME Section III design specification.

TVA's ASME Section III Quality Assurance (QA) Manual, in effect at the time Unit 2 construction activities were suspended, was written to meet the administrative, documentation, and quality control program aspects delineated in the 1980 Edition through the Winter 1981 Addenda (1980W81).

Code Case N-520-3, "Alternative Rules for Renewal of N-type Certificates for Plants Not in Active Construction, Section III, Division 1," and Non-mandatory Appendix Z to ASME Section III were adopted to allow TVA to renew a temporary Certificate of Authorization from ASME to complete and transfer documentation of the partially completed ASME Section III systems and components, to the jurisdiction of a subcontractor who will be an ASME Section III N-Certificate Holder. This will allow the subcontractor to complete the construction of the WBN Unit 2 systems and complete the associated N-5 Code Data Reports to certify that the systems were constructed in accordance with ASME Section III, and will further allow TVA to document completion of Unit 2 as part of the Owner's Section III required responsibilities at the time that construction is finished.

TVA's program, processes, and procedures to document the partially completed piping systems, transfer jurisdiction to an N-Certificate Holder with overall responsibility to complete construction and N-5 Code Date Reports, and document completion of WBN Unit 2 construction activities presently reflect these requirements.

III. Code Requirement

The ASME COR is the 1971 Edition through Summer 1973 Addenda of Section III. The requirements for component repairs were predicated on those repairs being accomplished prior to application of the N Stamp to the component. Accordingly, the Manufacturer's responsibilities are focused on repairs during the manufacturing of a vessel, pump, or valve or the fabrication of a piping subassembly. The Installer's responsibilities are to address the installation and assembly of materials and components and material and component repairs.

In support of this possibility, the ASME Section III Committee created the ASME Section Code Case N-801, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by Organization Other Than the N-Certificate Holder That Originally Stamped the Component Being Repaired Section III, Division 1." ASME Code Case N-801 was created and approved by committee on December 23, 2010, and published in Supplement 4 to the 2010 Edition of Code Cases: Nuclear Components.

The ASME Code requirements for component repairs are predicated on those repairs being accomplished prior to satisfying the construction code and the application of the N Stamp to the component. Accordingly, the Manufacturer's responsibilities are focused on repairs during the construction of the component. The Installer's responsibilities are focused on joining manufactured components.

As experience with application of the Code evolved, it was recognized that repairs might be required during the installation process as a result of various factors, as evidenced by Code Interpretation III-1-83-61. Unfortunately, this interpretation only provided general direction that repairs may be performed in accordance with either Section III or Section XI at the Owner's direction and not specific provisions for how that might be done.

IV. Reason for Request

TVA notified the NRC (Reference 1) of the intent to resume construction activities on WBN Unit 2 in 2007.

With activation of construction activities after nearly 22 years, it was necessary to ensure that partially completed ASME Section III piping systems and components would be fully capable of meeting their design requirements. The long-term effects of allowing components and piping systems to remain idle without continuous layup or preservation required evaluation and refurbishment as needed to restore design requirements. Further, many of the N-Certificate Holders that manufactured and stamped these components were no longer N-Certificate Holders, or no longer were in business. Although the lack of ASME Section III Division I rules regarding repair of installed components did not prevent licensing of operating plants constructed to ASME Section III, the resumption of construction of WBN Unit 2 under ASME Section III and inquiries regarding rules for documenting component repairs under ASME Section III resulted in the development and approval of this Code Case. This Code Case is necessary to provide rules for N-Certificate Holders to perform repairs to N-Stamped components at WBN Unit 2 under ASME Section III, Division 1.

V. Proposed Alternative and Basis for Use

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA is requesting approval to use the provisions of ASME Code Case N-801, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by Organizations Other Than the N-Certificate Holder That Originally Stamped the Component Being Repaired Section III, Division 1," on the basis that this alternative will provide an acceptable level of quality and safety for the required quality processes of the construction of WBN Unit 2 to the rules and requirements of ASME Section III, Division 1.

The NRC Staff has not yet reviewed this Code Case, and thus has not approved its generic use by the industry through the usual process of incorporation into regulatory guides (RG) (e.g., RG-1.84 or RG-1.147) and 10 CFR 50.55a.

Code Case N-801 imposes the following conditions on the N-Certificate Holder. The following attributes (summarized below) were added to the provisions of the Code Case to ensure that the process conforms to the ASME Code requirements.

1. The N-Certificate Holder performing the repair shall review the component Design Specification and Design Report, stress analysis, or applicable design rules to determine the required repair parameters. This review shall be documented and certified by a Registered Professional Engineer. If this review results in a need to revise the Design Specification or Design Report, these documents shall be revised prior to completion of the Code Data Report described in this Case.
2. The N-Certificate Holder performing the repair shall complete the repair under the provisions of the Section III Edition and Addenda required by the Design Specification.
3. The N-Certificate Holder performing the repair shall document the repair on Code Data Report form N-10 and attach or reference supporting documentation to describe the repair.
4. Unless otherwise stated herein, the component shall be subjected to pressure testing as required by NB-6000, NC-6000, or ND-6000 following the repair. Where the component has

already been installed, the hydrostatic test pressure would exceed the piping system test pressure requirements of the piping system in which the component is installed, and the component cannot be isolated for testing, the repair shall be tested to the piping system pressure test requirements.

5. The scope of the Certificate of Authorization for the organization performing the repair shall include construction of the type and Code class of the component to be repaired.
6. The N-Certificate Holder's QA program shall describe the controls for performing repair of N-stamped components.
7. All of the requirements of the Design Specification and the Code Edition and Addenda applicable to the construction of the component shall be met except for pressure testing which may be performed as described in (4).
8. The use of this Case shall be documented on the Code Data Report completed by the N-Certificate Holder performing the repair. In addition, the Code Data Report completed by the N-Certificate Holder performing the repair shall be attached to the Data Report of the N-Certificate Holder who originally stamped the component.
9. The Authorized Nuclear Inspector shall review plans for repairs conducted under this Case and perform required in-process inspections and a final review of the completed repair prior to signing the Code Data Report.
10. Stamping of the repaired component by the N-Certificate Holder performing the repair shall not be required.

TVA and N-Certificate Holders at WBN Unit 2 are preparing N-5 Code Data Reports. These reports cannot be reviewed and approved until this Code Case is approved for use.

VI. Duration of the Proposed Alternative

Application of the provisions of this request will commence upon approval of this relief request and site approval of implementing instructions. This application will continue until such time as the WBN Unit 2 N-3 Code Data Report is completed and signed by TVA, as the Owner; or the use of the Code Case is no longer necessary, nor allowed, in accordance with the provisions of the Code Case. Should the NRC impose additional requirements, these will be implemented prior to completion of the N-3 Code Data Report.

VII. Precedents

Due to the unique circumstances associated with WBN Unit 2, there are no established precedents for the use of the ASME Section III Code Case N-801.

VIII. References

1. TVA letter dated August 3, 2007, "Watts Bar Nuclear Plant (WBN) Unit 2 - Reactivation of Construction Activities"

**ENCLOSURE 2
WATTS BAR NUCLEAR PLANT (WBN) UNIT 2**

REQUEST FOR RELIEF TO USE ASME BOILER AND PRESSURE VESSEL CODE, CODE CASE N-802, "RULES FOR REPAIR OF N-STAMPED CLASS 1, 2, AND 3 COMPONENTS BY THE N-CERTIFICATE HOLDER THAT ORIGINALLY STAMPED THE COMPONENT, SECTION III, DIVISION 1"

Executive Summary:

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA is requesting approval for use of the provisions of Code Case N-802, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by the N-Certificate Holder That Originally Stamped the Component, Section III, Division 1."

In December 2010, Code Case N-802 was issued by Supplement 4 to the 2010 ASME Edition Code Cases. The case was approved in December, but not issued in Supplement 4 until July of 2011. Code Case N-802 will allow N-Certificate Holders that originally stamped the components at WBN Unit 2 to perform repairs to components in accordance with ASME Section III. This Code Case will allow N-Certificate Holders that stamped components to perform repairs of these components in support of N-5 Code Data Report completion. These components were installed between 1971 to the present. The original N-Certificate Holder may need to refurbish these components to meet or exceed design or Code requirements. Refurbishment may require replacement of Code and non-Code material or repair of pressure boundary material. Code Case N-802 will be applied at WBN Unit 2 to the repairs accomplished by the N-Certificate Holder that originally stamped the component. This includes stamped components shipped to the N-Certificate Holder's facility or those repaired onsite if the Holder's N-Certificate extends to the WBN Unit 2 site. The WBN Unit 2 N-Certificate Holder with Overall Responsibility will ensure that repairs performed by the N-Certificate Holder that originally stamped the component will be completed per Code Case N-802.

These repairs shall be completed per Code Case N-802 prior to completion of N-5 Code Data Reports for each system.

I. Systems and Components Affected

This request to use the ASME Section III Code Case N-802 will be applicable to the WBN Unit 2 safety-related components required to be designed, fabricated, and constructed to the rules of the ASME Boiler and Pressure Vessel Code, Section III as defined by TVA, the Owner.

II. Applicable ASME Code Edition and Addenda

The Code of Record (COR) for ASME Section III piping systems designed by TVA is the 1971 Edition up to and including the Summer 1973 Addenda. For those components ordered before the adoption of the Winter 1977 Addenda, the COR is that Code in effect on the date the contract with the ultimate manufacturer was placed. For those components ordered after the adoption of the Winter 1977 Addenda, the Owner may establish a COR independent of the contract date and dating as early as three years prior to the date on which the construction permit application was filed. The COR will be established by the applicable ASME Section III design specification.

TVA's ASME Section III Quality Assurance (QA) Manual, in effect at the time Unit 2 construction activities were suspended, was written to meet the administrative, documentation, and quality control program aspects delineated in the 1980 Edition through the Winter 1981 Addenda (1980W81).

Code Case N-520-3, "Alternative Rules for Renewal of N-type Certificates for Plants Not in Active Construction, Section III, Division 1," and Non-mandatory Appendix Z to ASME Section III were adopted to allow TVA to renew a temporary Certificate of Authorization from ASME to complete and transfer documentation of the partially completed ASME Section III systems and components, to the jurisdiction of a subcontractor who will be an ASME Section III N-Certificate Holder. This will allow the subcontractor to complete the construction of the WBN Unit 2 systems and complete the associated N-5 Code Data Reports to certify that the systems were constructed in accordance with ASME Section III, and will further allow TVA to document completion of Unit 2 as part of the Owner's Section III required responsibilities at the time the unit construction is finished.

TVA's program, processes, and procedures to document the partially completed piping systems, transfer jurisdiction to an N-Certificate Holder with overall responsibility to complete construction and N-5 Code Date Reports, and document completion of WBN Unit 2 construction activities presently reflect these requirements.

III. Code Requirement

The ASME COR is the 1971 Edition through Summer 1973 Addenda of Section III, Division 1. The requirements for component repairs were predicated on those repairs being accomplished prior to application of the N Stamp to the component. Accordingly, the Manufacturer's responsibilities are focused on repairs during the manufacturing of a vessel, pump, or valve or the fabrication of a piping subassembly. The Installer's responsibilities are to address assembly of materials and components and material repairs.

In support of this possibility, the ASME Section III Committee created the ASME Section Code Case N-802, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by the N-Certificate Holder That Originally Stamped the Component, Section III, Division 1." ASME Code Case N-802 was created, approved, and published effective December 23, 2010.

The ASME Code requirements for component repairs are predicated on those repairs being accomplished prior to satisfying the construction code and the application of the N Stamp to the component. Accordingly, the Manufacturer's responsibilities are focused on repairs during the construction of the component. The Installer's responsibilities are focused on joining manufactured components.

As experience with application of the Code evolved, it was recognized that repairs might be required during the installation process as a result of various factors, as evidenced by Code Interpretation III-1-83-61. Unfortunately, this interpretation only provided general direction that repairs may be performed in accordance with either Section III or Section XI at the Owner's direction with no specific provisions regarding how the repairs might be completed.

IV. Reason for Request

TVA notified the NRC (Reference 1) of the intent to resume construction activities on WBN Unit 2 in 2007.

With activation of construction activities after nearly 22 years, it was necessary to ensure that partially completed ASME Section III piping systems and components would be fully capable of meeting their design requirements. The long-term effects of allowing components and piping systems to remain idle without continuous layup or preservation required evaluation and refurbishment as needed to restore design requirements. Although the lack of ASME Section III Division I rules regarding repair of installed components did not prevent licensing of operating plants constructed to ASME Section III, the resumption of construction of WBN Unit 2 under ASME Section III and inquiries regarding rules for documenting component repairs under ASME Section III resulted in the development and approval of this Code Case. This Code Case is necessary to provide rules for N-Certificate Holders to perform repairs to components at WBN Unit 2 under ASME Section III.

V. Proposed Alternative and Basis For Use

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA is requesting approval to use the provisions of ASME Code Case N-802, "Rules for Repair of N-Stamped Class 1, 2, and 3 Components by the N-Certificate Holder That Originally Stamped the Component, Section III, Division 1," on the basis that this alternative will provide an acceptable level of quality and safety for the required quality processes of the construction of WBN Unit 2 to the rules and requirement of ASME Section III.

The NRC Staff has not yet reviewed this Code Case, and thus has not approved their generic use by the industry through the usual process of incorporation into regulatory guides (RG) (e.g., RG-1.84 or RG-1.147) and 10 CFR 50.55a.

N-802 imposes the following conditions on the N-Certificate Holder. The following attributes were added to the provisions of the Code Case to ensure that the process conforms to the ASME Code requirements.

1. At the time of the repair, the Owner has not yet filed the N-3 Data Report.
2. The N-Certificate Holder performing the repair shall prepare Data Report N-10A. The certification of Data Report N-10A indicates that the N-Certificate Holder performing the repair assumes responsibility for Code compliance of the repair, as described in the Data Report.
3. Stamping of the repaired component by the N-Certificate Holder performing the repair shall not be required.

Additionally, the provisions of Code Case N-801 listed below will be applied for consistency.

1. The N-Certificate Holder performing the repair shall review the component Design Specification and Design Report, stress analysis, or applicable design rules to determine the required repair parameters. This review shall be documented and certified by a Registered Professional Engineer. If this review results in a need to revise the Design Specification or Design Report, these documents shall be revised prior to completion of the Code Data Report described in this Case.

2. The N-Certificate Holder performing the repair shall complete the repair under the provisions of the Section III Edition and Addenda required by the Design Specification.
3. Unless otherwise stated herein, the component shall be subjected to pressure testing as required by NB-6000, NC-6000, or ND-6000 following the repair. Where the component has already been installed, the hydrostatic test pressure would exceed the piping system test pressure requirements of the piping system in which the component is installed, and the component cannot be isolated for testing, the repair shall be tested to the piping system pressure test requirements.
4. The scope of the Certificate of Authorization for the organization performing the repair shall include construction of the type and Code class of the component to be repaired.
5. The N-Certificate Holder's QA program shall describe the controls for performing repair of N-stamped components.
6. All of the requirements of the Design Specification and the Code Edition and Addenda applicable to the construction of the component shall be met except for pressure testing, which may be performed as described in (3).
7. The use of this Case shall be documented on the Code Data Report. In addition, the Code Data Report shall be attached to the original Data Report of the N-Certificate Holder.
8. The Authorized Nuclear Inspector shall review plans for repairs conducted under this Case and perform required in-process inspections and a final review of the completed repair prior to signing the Code Data Report.

TVA and N-Certificate Holders at WBN Unit 2 are preparing N-5 Code Data Reports. These reports cannot be reviewed and approved until this Code Case is approved for use.

VI. Duration of the Proposed Alternative

Application of the provisions of this request will commence upon approval of this relief request and site approval of implementing instructions. This application will continue until such time as the WBN Unit 2 N-3 Code Data Report is completed and signed by TVA, as the Owner; or the use of the Code Case is no longer necessary, nor allowed, in accordance with the provisions of the Code Case. Should the NRC impose additional requirements, these will be implemented prior to completion of the N-3 Code Data Report.

VII. Precedents

Due to the unique circumstances associated with WBN Unit 2, there are no established precedents for the use of the ASME Section III Code Case N-802.

VIII. References

1. TVA letter dated August 3, 2007, "Watts Bar Nuclear Plant (WBN) Unit 2 - Reactivation of Construction Activities"

ENCLOSURE 3

List of Commitments

1. TVA will ensure the NRC is informed of these repair/replacement activities at the time of occurrence to allow the staff the opportunity to conduct inspection of these activities.
2. Application of the provisions of this request will commence upon approval of these relief requests and site approval of implementing instructions. This application will continue until such time as the WBN Unit 2 N-3 Code Data Report is completed and signed by TVA, as the Owner; or the use of the Code Case is no longer necessary, nor allowed, in accordance with the provision of the Code Cases. Should the NRC impose additional requirements, they will be implemented prior to completion of the N-3 Code Data Report.