

October 2, 2008

Mr. Ashok S. Bhatnagar  
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and Construction  
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SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – REQUEST FOR RELIEF  
REGARDING ALTERNATIVE RULES FOR RENEWAL OF ACTIVE OR  
EXPIRED N-TYPE CERTIFICATES (TAC NO. MD8314)

Dear Mr. Bhatnagar:

By letter dated February 2, 2008, Tennessee Valley Authority (TVA) submitted a request for relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the Watts Bar Nuclear Plant (WBN) Unit 2. Pursuant to Section 50.55a(a)(3)(i) of Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR), TVA requested authorization to use, as an alternative, the provisions in ASME Code Case N-520-2, "Alternative Rules for Renewal of Active or Expired N-type Certificates for Plants Not in Active Construction, Section III, Division 1." Use of the Code Case N-520-2 would allow TVA to obtain 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.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the TVA's request and finds that the use of the alternative would provide an acceptable level of quality and safety for the proper transfer of documentation of the partially completed ASME Section III systems and components to the jurisdiction of a subcontractor. Therefore, the NRC staff authorizes, pursuant to 10 CFR 50.55a(a)(3)(i), the alternatives in Code Case to obtain a temporary Certificate of Authorization to conduct the transfer of N-type certificates at WBN Unit 2. The use of this Code Case is authorized until such time as the Code Case is published in a future version of NRC Regulatory Guide (RG) 1.84 and incorporated by reference in 10 CFR 50.55a(b). At that time, if TVA intends to continue implementing this Code Case, it must follow all provisions of Code Case N-520-2 with conditions as specified in RG 1.84 and limitations as specified in 50.55a(b)(4), (b)(5), and (b)(6), if any. Further, TVA must comply with the duration and terms of the temporary certificates and for renewals as delineated in the Code Case.

A. Bhatnagar

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Details regarding the NRC staff's conclusions are contained in the enclosed safety evaluation. If you have any questions regarding this issue, please feel free to contact Patrick Milano at (301) 415-1457.

Sincerely,

**/RA/**

L. Raghavan, Chief  
Watts Bar Special Projects Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:  
Safety Evaluation

cc: See next page

A. Bhatnagar

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NRR-084

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST

WATTS BAR NUCLEAR PLANT UNIT 2

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-391

1.0 INTRODUCTION

By letter dated February 1, 2008, as supplemented on July 2, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML080370185 and ML081850459, respectively), Tennessee Valley Authority (TVA) submitted a request for relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the Watts Bar Nuclear Plant (WBN) Unit 2. Pursuant to Section 50.55a(a)(3)(i) of Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR), TVA requested authorization to use, as an alternative, the provisions in ASME Code Case N-520-2, "Alternative Rules for Renewal of Active or Expired N-type Certificates for Plants Not in Active Construction, Section III, Division 1." Use of the Code Case N-520-2 would allow TVA to obtain 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.

2.0 REGULATORY EVALUATION

Section 50.55a, "Codes and standards," of 10 CFR Part 50 requires that systems and components of nuclear power reactors must meet the requirements of the ASME Code. The WBN Unit 2 ASME piping systems and components were designed and constructed to meet the 1971 Edition with addenda through the Summer 1973 Addenda of Section III, as the construction Code-of-Record. TVA's ASME Section III Quality Assurance Manual, in effect at the time WBN Unit 2 construction activities were suspended in 1985, was written to meet the requirements of the 1980 Edition through the Winter 1981. Section 50.55a(a)(3) states, in part, that alternatives to the requirements of select portions of 10 CFR 50.55a may be used, when authorized by the NRC, if the applicant demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Enclosure

TVA submitted the subject request for the staff's review and approval for the use of an alternative Code Case under the provisions of 10 CFR 50.55a(a)(3)(i). Specifically, relief is requested from Section NCA-8100, "Authorization to Perform Code Activities," of Section III of the ASME Code.

### 3.0 TECHNICAL EVALUATION

#### 3.1 ASME Code Requirements

Construction activities shall be conducted in accordance with the requirements of the ASME Section III requirements.

Paragraph NCA-8110, "General," of ASME Code Section III, Subsection 8100, "Authorization to Perform Code Activities," states that "[a]uthorization to use the official Code Symbol Stamps or to certify work by other means provided in this Section (see Table NCA-8100-1) will be granted by the Society for a 3 year period pursuant to the provisions set forth in this Subarticle." Paragraph NCA-8180 provides requirements for renewal of these certificates.

#### 3.2 Applicant's Basis for Requesting Alternative

##### 3.2.1 Background

Construction activities were halted on a number of nuclear power plants in the late 1970s and 1980s and this interrupted Code activities. As a result, Code Case N-520 was developed and revised (Code Case N-520-1) to provide guidance on what an N-Certificate Holder had to do to document and certify (i.e., N-Stamp) the work performed. These cases considered the situation where the Certificate Holder had maintained its Certificate. Under these two Code Cases, the N-type Certificate could be renewed at the site without a survey.

In its request for relief, TVA requested approval to use ASME Code Case N-520-2, "Alternative Rules for Renewal of Active or Expired N-type Certificates for Plants Not in Active Construction, Section III, Division 1." TVA's N-Certificate for WBN Unit 2 expired in October, 1996. The Code Case would be used as part of the completion of construction activities associated with ASME Section III systems and components of WBN Unit 2. The Code Case would allow the applicant to obtain a temporary Certificate of Authorization from ASME to complete and subsequently transfer documentation of the partially completed ASME Section III systems and components to the jurisdiction of a subcontractor that is an ASME Section III N Certificate Holder. The subcontractor would complete the construction of the WBN Unit 2 systems and complete the associated N-5 Code Data Reports to certify that the required portions of the plant were constructed in accordance with ASME Section III and allow the applicant to document completion of the plant as part of the Owner's Section III requirements. An N-5 Code Data Report is a Certificate Holder's documentation for installation or shop assembly of a nuclear power plant's components, supports or appurtenances. The N-5 Code Data Reports were not completed on most of the WBN Unit 2 systems because construction activities were halted before the plant's completion. Code Case N-520-2 would allow the partially completed work to be properly documented through the issuance of "Partial N-5 Code Data Reports," which will then be transferred to the TVA subcontractor N Certificate Holder's jurisdiction for final completion of the documentation. TVA would not be authorized to perform any physical work or repairs under the temporary Certificate of Authorization.

### 3.3 Licensee's Proposed Alternative

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA requested that the NRC approve the use of Code Case N-520-2. The NRC had not yet reviewed this Code Case nor approved its generic use by the industry through the usual process of incorporation into Regulatory Guide (RG) 1.84, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III," and incorporation into 10 CFR 50.55a.

#### 3.3.1 Applicant's Basis for Relief Request

TVA stated that, pursuant to 10 CFR 50.55a(a)(3)(i), approval for the use of ASME Code Case N-520-2 provides an acceptable level of quality and safety for the required quality process of the construction of WBN Unit 2 to the rules and requirements of ASME Section III.

With the planned restart of construction activities at WBN Unit 2, TVA approached the ASME Section III Committee about a process that could be developed that would allow partially completed documentation and associated Code items to be transferred from TVA to an N-type Certificate Holder and allow plant systems to be completed in accordance with ASME Section III requirements. The result of this inquiry was Code Case N-520-2.

#### 3.3.2 Description of the Proposed Alternative

Code Case N-520-2 imposes conditions on the Owner to ensure proper transfer of the documentation and associated Code items, from the organization with the expired Certificates of Authorization to the N-type Certificate Holder subcontractor. The additional provisions of the Code Case contained the following requirements:

Where the N-type Certificate Holder has permitted the Certificates to expire, and has returned the Code Symbol Stamps to ASME, and the Owner plans to contract with a new Certificate Holder to complete construction of the nuclear facility, the expired Certificate Holder may apply to ASME for temporary Certificates of Authorization and such Certificates and applicable Code Symbol Stamps shall be issued by ASME subject to the following conditions:

(1) The scope of the certificates shall be limited to the Code Edition and Addenda to which the nuclear plant has been docketed. No new Code work may be performed under these temporary Certificates. Repair welding of material imperfections and existing welds shall not be performed.

(2) An accredited Authorized Nuclear Inspection Agency (ANIA) shall be employed to review the completed work and monitor and verify compilation and completion of all documentation such as Data Report Forms and supporting Data Packages.

(3) The Authorized Nuclear Inspector (ANI) shall certify all partial Data Reports and authorize the temporary Certificate Holder to stamp the previously completed work with the appropriate Code Symbol Stamp.

(4) The QA program previously accepted by ASME shall be implemented (NCA-8140) and any revisions to the program shall be acceptable to the ANIA. All required revisions to the QA manual shall be reviewed and accepted by the ANI Supervisor prior to implementation. The revised program shall govern all activities required to document and stamp all previously completed work.

(5) A survey or audit by ASME shall be required for the issuance of the requested Certificates and Stamps to the expired Certificate Holder. Code activities performed prior to the issuance of the temporary Certificates shall be subject to the acceptance of the ANI (NCA-8153, "Code Activities Prior to Obtaining a Certificate").

(6) The Owner shall apply to ASME for an Owner's Certificate (NCA-8162, "Evaluation for an Owner's Certificate"), and the evaluation interview by ASME shall include a review of the scope of activities to be performed under the temporary Certificates. A complete list of all work remaining to be documented and stamped shall be provided to the ANIA prior to completion of all work. The Regulatory Authority and Jurisdictional and Enforcement Authority (if applicable) shall be notified of the completion of these activities.

(7) The term of the temporary Certificates shall be for one year, and may be extended once by ASME upon receipt of a request submitted by certified mail for an additional period not to exceed one year. Subsequent renewals shall be treated as renewals of active Certificates.

(8) The Owner shall maintain the Owner's Certificate in accordance with existing Code requirements until all Code activity has been completed, and the N-3 Data Report Form has been completed and filed (NCA-8180, "Renewal," paragraph c). The N-3 Data Report Form lists all ASME components in the nuclear power plant at the completion of construction activities.

(9) The temporary Certificates and Code Symbol Stamps shall be returned to ASME when all previously completed work has been documented and stamped.

### 3.4 Staff Evaluation

The NRC staff has reviewed the information in TVA's letters dated February 1 and July 2, 2008, regarding the applicant's use of the alternative documented in Code Case N-520-2. In a request for additional information dated May 22, 2008 (ADAMS No. ML081300809), the staff requested that TVA clarify if the quality assurance (QA) program previously accepted by ASME (NCA-8140) had been continually implemented and any revisions to the program accepted by the ANIA. The staff needed to confirm that the QA manual (QAM) had been continuously applied after October 25, 1996, for such items as layup, maintenance and removal of components. TVA responded that its Nuclear Quality Assurance Plan (NQAP) (TVA-NQA-PLN89-A) has been continuously applied to WBN Unit 2 and covered activities that included layup, maintenance, and removal of components. Also, the NQAP had been revised, as necessary. On March 10, 2008, the ASME III QAM was revised to comply with the provisions of ASME Section III Code Case N-520-2. The revision was coordinated and accepted by the ANIA.

The staff also questioned TVA regarding the statement that ASME would perform only a limited scope survey of the QA program and processes to ensure that the procedures are in place to accomplish the Code data transfer in accordance with the provisions of the Code Case. TVA clarified that a full survey of the ASME program will be done of its limited scope QA program. TVA's ASME III QAM is limited in scope in that no ASME Code activities other than completion of documentation, Code Data Reports, and Stamping are allowed under the provision of ASME Section III Code Case N-520-2. The TVA ASME III QAM was developed to meet the requirements of ASME Section III Code Case N-520-2. Under the provisions of the Code Case, WBN Unit 2 will complete documentation and Code Data Reports and Stamping for those portions of the plant that are suitable for use. In addition, the applicant will identify those items that are not complete to the ANIA and the N-Certificate Holder having overall responsibility for completing construction and installation of ASME Section III systems and components on WBN Unit 2.

TVA's request stated that the term length of the temporary certificates will be of limited duration. The Code Case has specific requirements for the term of the temporary certificates and for renewals. The staff asked TVA to clarify its definition of "limited duration." TVA's response was that it would comply with all the applicable requirements of the Code Case, including the duration provisions. The NRC staff finds this acceptable because it does not change the terms of the Code Case.

On the basis of TVA's implementation of its NQAP for activities at WBN Unit 2, the scope of the ASME survey of the program, and the preparation of procedures for accomplishing the transfer of the Code certifications, the NRC staff finds that the proposed alternatives in Code Case N-520-2 provide an acceptable level of quality and safety. The staff also finds that TVA's proposed actions are consistent with the terms of the temporary certificates and for renewals as delineated in the Code Case and are acceptable.

#### 4.0 CONCLUSIONS

Based on the above evaluation, the staff concludes that Code Case N-520-2 provides an acceptable level of quality and safety to the requirements of Section NCA-8100, "Authorization to Perform Code Activities," of Section III of the ASME Code. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative is authorized for use at WBN Unit 2. The use of this Code Case is authorized until such time as the Code Case is published in a future version of NRC RG 1.84 and incorporated by reference in 10 CFR 50.55a(b). At that time, if TVA intends to continue implementing this Code Case, it must follow all provisions of Code Case N-520-2 with conditions as specified in RG 1.84 and limitations as specified in 50.55a(b)(4), (b)(5), and (b)(6), if any. Further, TVA must comply with the duration and terms of the temporary certificates and for renewals as delineated in the Code Case.

Principal Contributor: Paul Prescott

Date: October 2, 2008

Ashok S. Bhatnagar  
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**WATTS BAR NUCLEAR PLANT  
UNIT 2**

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