



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 23, 2012

Mr. Michael D. Skaggs
Senior Vice President
Nuclear Construction
Tennessee Valley Authority
Lookout Place 6A
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – APPROVAL OF REQUEST TO USE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE CASES N-520-4 AND N-520-5, “ALTERNATIVE RULES FOR RENEWAL OF ACTIVE OR EXPIRED N-TYPE CERTIFICATES FOR PLANTS NOT IN ACTIVE CONSTRUCTION, SECTION III, DIVISION 1” (TAC NO. ME9299)

Dear Mr. Skaggs:

By letter dated August 7, 2012, Tennessee Valley Authority (TVA) submitted a request for the use of alternatives to certain American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Section III requirements at the Watts Bar Nuclear Plant (WBN), Unit 2.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(a)(3)(i), TVA requested to use the provisions of ASME Code Cases N-520-4 and N-520-5, “Alternative Rules for Renewal of Active or Expired N-Type Certificates for Plants Not in Active Construction, Section III, Division 1” on the basis that it provides an acceptable level of quality and safety.

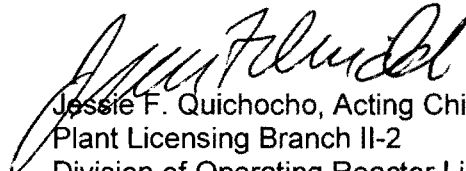
Based on the enclosed safety evaluation, the NRC staff concludes that ASME Code Cases N-520-4 and N-520-5 provide an acceptable level of quality and safety to the requirements of Section NCA-8100, “Authorization to Perform Code Activities,” of Section III, Division 1 of the ASME Code. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is in compliance with the ASME Code’s requirements. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative is authorized for WBN Unit 2, effective immediately and 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 until such time as the ASME Code Case is published in a future version of Regulatory Guide 1.84 and incorporated by reference in 10 CFR 50.55a(b), whichever is sooner. At that time, if TVA wishes to continue to use the Code Case, it may do so provided that all conditions, limitations and modifications regarding the use of the Code Case, if any, are met.

M. Skaggs

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If you have any questions, please contact the Project Manager, Justin Poole at 301-415- 2048 or via e-mail at Justin.Poole@nrc.gov.

Sincerely,



Jessie F. Quichocho, Acting Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Safety Evaluation



UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST TO USE THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BOILER AND PRESSURES VESSEL CODE CASES N-250-4 AND N-520-5,
“ALTERNATIVE RULES FOR RENEWAL OF ACTIVE OR EXPIRED N-TYPE CERTIFICATES
FOR PLANTS NOT IN ACTIVE CONSTRUCTION, SECTION III, DIVISION 1”
WATTS BAR UNIT 2
DOCKET NO. 50-391

1.0 INTRODUCTION

By letter dated August 7, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12222A144) (Reference 1), Tennessee Valley Authority (TVA), the applicant, requested approval for the use of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the Code) Code Cases N-520-4 and N-520-5, “Alternative Rules for Renewal of Active or Expired N-Type Certificates for Plants Not in Active Construction, Section III, Division 1,” at Watts Bar Nuclear Plant (WBN) Unit 2. These Code Cases correspond to Revision 4 and Revision 5 of Code Case N-520, respectively.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i), the licensee requested to use the proposed alternative on the basis that the alternative provides an acceptable level of quality and safety. The use of the Code Cases would allow TVA to transfer the responsibility for completion of partially installed piping systems and components to a new holder of an N-type Certificate (Certificate Holder), who is designated as such by the ASME.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a, systems and components of nuclear power reactors must meet the requirements of the Code. The Code requires that construction activities associated with ASME Code-class systems and components shall be conducted in accordance with the requirements of Section III, Division 1. Specifically, Subarticle NCA-8100, “Authorization to Perform Code Activities,” of Section III, Division 1, of the Code details the general provisions associated with Certificate Holders and the performance of ASME Code work by Certificate Holders.

The WBN Unit 2 ASME Code class piping systems and components were designed and constructed to meet the 1971 edition with addenda through the Summer 1973 Addenda of Section III of the Code; this is the construction Code of Record for WBN Unit 2. The applicant’s

ASME Section III Quality Assurance Manual, in effect at the time WBN Unit 2 construction activities were suspended, was written to meet the requirements of the 1980 edition through the Winter 1981 addenda of the Code. In accordance with 10 CFR 50.55a(a)(3), alternatives to the requirements of select portions of 10 CFR 50.55a may be used, when authorized by the U.S. Nuclear Regulatory Commission (NRC), if the applicant demonstrates that the proposed alternatives would provide an acceptable level of quality and safety (10 CFR 50.55a(a)(3)(i)).

The TVA submitted the subject request for the NRC staff's review and approval to use alternative Code Cases under the provisions of 10 CFR 50.55a(a)(3)(i). Specifically, TVA has requested NRC authorization of an alternative to the requirements of Section III of the Code by requesting the use of Code Case N-520-4 and Code Case N-520-5, which would permit TVA to transfer responsibility for partially installed material and associated documentation to an active Certificate Holder. This would allow the active Certificate Holder to complete work associated with partially installed piping and components at WBN Unit 2.

3.0 TECHNICAL EVALUATION

3.1 The Applicant's Requesting for Alternative

3.1.1 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 a Certificate Holder had to do to document and certify 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 letter dated February 1, 2008 (Reference 2), TVA requested NRC approval to use ASME Code Case N-520-2. The NRC subsequently granted approval for the use of Code Case N-520-2 by letter dated October 2, 2008 (Reference 3). The applicant's N-type Certificate for WBN Unit 2 expired in October 1996. The Code Case was used as part of the completion of construction activities associated with ASME Section III systems and components of WBN Unit 2. The Code Case allowed the applicant to obtain a temporary Certificate of Authorization from ASME to begin transferring documentation of the partially completed ASME Section III systems and components to the jurisdiction of a subcontractor that is an ASME Section III N-type Certificate Holder. The subcontractor will 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 Section III of the Code 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 facility's completion. Code Case N-520-2 allowed the start of partially completed work to be properly documented through the issuance of "Partial N-5 Code Data Reports," which are then transferred to the TVA subcontractor N-type Certificate Holder's jurisdiction for final completion of the documentation. TVA was not authorized to perform any physical work or repairs under the temporary Certificate of Authorization.

By letter dated June 25, 2010 (Reference 4), TVA submitted a request for NRC approval to use Code Case N-520-3. Code Case N-520-3 included only a minor revision from the previous version of the Code Case (N-520-2). This revision permitted the extension of a temporary Certificate of Authorization for an additional year to complete and transfer documentation of the partially completed ASME Section III systems and components to the jurisdiction of a subcontractor who is an ASME Section III N-Certificate holder. By letter dated September 29, 2010 (Reference 5), the NRC approved TVA's request to use Code Case N-520-3 as an alternative to the requirements of the Code, pursuant to 10 CFR 50.55a(a)(3)(i).

3.1.2 Applicant's Proposed Alternative

Pursuant to 10 CFR 50.55a(a)(3)(i), TVA requested that the NRC staff approve the use of Code Cases N-520-4 and N-520-5. The NRC has not yet reviewed these two Code Cases nor approved their 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. As such, the use of these Code Cases is reviewed on a case-by-case basis.

3.1.3 Applicant's Basis for Request for Alternative

In its August 7, 2012, submittal, TVA stated that the use of ASME Code Cases N-520-4 and N-520-5 provide 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, pursuant to 10 CFR 50.55a(a)(3)(i).

3.1.4 Description of the Proposed Alternative

The NRC staff has previously reviewed and approved the use of the second and third revisions to Code Case N-520 at WBN Unit 2, as discussed previously. Revision 4 to Code Case N-520 resulted in only administrative changes to the Code Case. Specifically, Revision 4 separated the requirements for active and expired N-type Certificate Holders into two separate sections, designated as "1 – Current N-type Certificates" and "2 – Expired N-Type Certificates." Revision 5 to Code Case N-520 was developed to address the issue of materials (pipe, elbows, tees, etc.), which had been partially installed by a Certificate Holder whose certificate expired prior to completion of work on the materials. The applicant notes that this revision was generated due to the lack of clarity in previous revisions of the Code Case regarding the transfer of partially installed material and supporting documentation to an active Certificate Holder. The resulting revision to the Code Case added the following provisions regarding the documentation of procurement and partial installation and subsequent transfer of partially installed material:

The responsibility for material and supporting documentation procured to the original Construction Code, during initial construction, may be transferred to the new Certificate Holder, provided the following requirements are met:

- (1) The material is only for use to complete the construction of items originally included as part of expired Certificate Holder's scope.

- (2) The material is identified and traceable to a Certified Material Test Report and applicable procurement documentation
- (3) The transfer process shall be defined and controlled by the Certificate Holders, documented in their Quality Assurance manuals, and reviewed and verified by the Authorized Nuclear Inspection Supervisor.

The applicant points out in its August 7, 2012, submittal that these provisions will be used for instrument and sample line materials which were procured and partially installed by the applicant. The Code Case provisions can only be applied to material which has fully traceable and appropriate ASME Section III, Division 1, documentation (i.e., Certified Material Test Reports (CMTRs)). The applicant also notes that the new Certificate Holder completing installation of the partially installed material will ensure that the materials are still acceptable for use. If the partially installed materials are not acceptable, the material will be replaced.

3.2 NRC Staff Evaluation

The NRC staff reviewed Revision 4 and Revision 5 of Code Case N-520, the use of which the applicant has requested, to determine whether the changes made to the Code Case are acceptable with respect to whether the requested alternative provides an acceptable level of quality and safety. The NRC staff notes that the only distinction between Code Case N-520-3, which has previously been approved by the NRC staff for use by the applicant, and Code Case N-520-4 is an administrative change which separates the Code Case requirements for active and expired Certificate Holders. Given that this administrative change does not affect quality or safety in the use of the Code Case, the NRC staff finds the use of Code Case N-520-4 acceptable.

The NRC staff also notes that the revisions to the Code Case that resulted in Code Case N-520-5 are consistent with the overall intent and purpose of the provisions for expired N-type Certificate Holders in previous revisions of the Code Case, which is the transfer of Code activities from expired Certificate Holders to active Certificate Holders. The NRC staff also notes that the provisions in Code Case N-520-5 can only be applied for material that has fully traceable and appropriate documentation (i.e., CMTRs). Additionally, the entire process is documented in the Quality Assurance manuals of the expired Certificate Holder and the new Certificate Holder and overseen by an Authorized Nuclear Inspection Supervisor. Combined, these provisions ensure that an adequate level of quality and safety will be maintained in the transfer of ownership of the partially installed material. Therefore, the NRC staff concludes that the use of Code Case N-520-5 by the applicant provides an acceptable level of quality and safety.

The NRC staff recognizes that the NRC actively participates in the ASME review and approval of Code Cases through its membership on Code committees. During its review, the NRC staff considered that through these Code committee activities, the NRC was provided a number of opportunities to review the requirements in Code Case N-520 and apply any additional measures necessary to ensure that Code Case N-520-5 contained sufficient provisions for the transfer of partially installed materials and associated documentation to a new Certificate Holder, such that an adequate level of quality and safety are maintained through its use. These Code Cases were reviewed and approved by ASME. However, these Code Cases are not yet

referenced in RG 1.84 for generic use. As such, the NRC must consider the use of these Code Cases on a case-by-case basis.

4.0 CONCLUSION

As set forth above, the NRC staff concludes that ASME Code Cases N-520-4 and N-520-5 provide an acceptable level of quality and safety to the requirements of Section NCA-8100, "Authorization to Perform Code Activities," of Section III, Division 1 of the ASME Code. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is in compliance with the ASME Code's requirements. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative is authorized for WBN Unit 2, effective immediately and 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 until such time as the ASME Code Case is published in a future version of RG 1.84 and incorporated by reference in 10 CFR 50.55a(b), whichever is sooner. At that time, if TVA wishes to continue to use the Code Case, it may do so provided that all conditions, limitations and modifications regarding the use of the Code Case, if any, are met.

5.0 REFERENCES

- (1) Letter from R. A. Hruby, Jr., TVA, to NRC Document Control Desk, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request to Use American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Code Cases N-520-4 and N-520-5, 'Alternative Rules for Renewal of Active or Expired N-Type Certificates for Plants Not in Active Construction, Section III, Division 1,'" August 7, 2012. (ADAMS Accession No. ML12222A144)
- (2) Letter from M. Bajestani, TVA, to NRC Document Control Desk, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request to Use American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, 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,'" dated February 1, 2008. (ADAMS Accession No. ML080370185)
- (3) Letter from L. Raghavan, NRC, to A. S. Bhatnagar, TVA, "Watts Bar Nuclear Plant, Unit 2 – Request for Relief Regarding Alternative Rules for Renewal of Active or Expired N-Type Certificates (TAC No. MD8314)," October 2, 2008. (ADAMS Accession No. ML082560373)
- (4) Letter from M. Bajestani, TVA, to NRC Document Control Desk, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request to Use American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Code Case N-520-3, 'Alternative Rules for Renewal of active or expired N-Type Certificates for Plants not in Active Construction, Section III, Division 1,'" dated June 25, 2010. (ADAMS Accession No. ML101760222)

- (5) Letter from S. J. Campbell, NRC, to A. S. Bhatnagar, TVA, "Watts Bar Nuclear Plant, Unit 2 – Request for Relief Regarding Alternative Rules for Renewal of Active or Expired N-Type Certificates (TAC No. MD8314)," September 29, 2010. (ADAMS Accession No. ML102700527)

Principal Contributor: William Jessup

Date: October 23, 2012

M. Skaggs

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If you have any questions, please contact the Project Manager, Justin Poole at 301-415- 2048 or via e-mail at Justin.Poole@nrc.gov.

Sincerely,

/RA/

Jessie F. Quichocho, Acting Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Safety Evaluation

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