

TENNESSEE VALLEY AUTHORITY

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JUL 06 1988

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

Gentlemen:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

WATTS BAR NUCLEAR PLANT (WBN) - APPLICATION OF LATER VERSIONS OF ASME SECTION III

The TVA letter to NRC dated December 24, 1987, committed to the identification and justification of areas in which WBN currently is using potentially less restrictive provisions of later ASME Section III code versions. Enclosure 1 provides the information intended to satisfy this commitment in the form of results of evaluations of General Construction Specifications (G-Spec) currently applicable to WBN, with the exception of process specification evaluations related to G-29, which were provided in the TVA letter to NRC dated August 21, 1987.

The evaluation of each individual G-Spec includes a description as to whether specific provisions of later editions and addenda used at WBN are more, less, or as restrictive as the WBN Code of Record, ASME Section III-1971 through Summer 1973 Addenda, and provides justification for the use of less restrictive provisions.

As stated in the December 24, 1987 letter, design criteria will be developed to control the approval and use of specific provisions of later editions, addenda, and code cases; and the Final Safety Analysis Report (FSAR) will be revised as required to address the use of provisions of later ASME Section III Code versions which could be viewed as less restrictive.

Enclosure 2 provides process specifications, which were requested by Rajender Auluck on May 5, 1988.

If there are any questions, please telephone J. A. Domer at (615) 365-8650.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley
R. Gridley, Director
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Regulatory Affairs

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PNU

Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

JUL 06 1988

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ENCLOSURE 1

LIST OF REVIEWED DOCUMENTS

<u>Attachment</u>	<u>Document</u>	<u>Subject</u>
A	G-62	Material Documentation Requirements, ASME Section III Applications
B	G-53	ASME Section III and Non-ASME Section III (including AISC, ANSI/ASME B31.1, and ANSI B31.5) Bolting Material
C	G-85	On-Line Leak Sealing
D	G-43	Support and Installation of Category I, and I (L) Piping Systems
E	G-39	Cleaning During Fabrication of Fluid Handling Components

Attachment A

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
 BOILER AND PRESSURE VESSEL CODE SECTION III, DIVISION I
 USE OF SPECIFIC PROVISIONS OF LATER EDITIONS AND ADDENDA

General Construction Specification: G-62

Title: Material Documentation and Acceptability Requirements for ASME Section III Applications

Date of Specification: January 15, 1986, Revision 3

The General Construction Specification uses specific provisions within the 1971 Edition with Addenda through and including Summer 1973, except as noted below:

Specific Provision

1. Certification of material, including testing required by NB/NC/ND/NE-2300 and inspections required by NB/NC/ND/NE-2500, may be performed by TVA/DNC or an approved laboratory (NA-3767.4(c), 1974 Edition).

Similar Provision in 1971 Edition Through Summer 1973 Addenda

The manufacturer of materials shall certify that all requirements of the material specification and all special requirements of this article (NB-2000) that are to be fulfilled by the manufacturer of the materials have been met (NB/NC/ND/NE-2130).

Used at Specification Paragraph: Appendix A, paragraphs 2.3, 3.1, 3.2.

Technical Discussion: Regardless of who does the testing, the end result gives materials that meet or exceed the material specification and all special requirements of the Article NB/NC/ND/NE-2000 of 1971 Edition through Summer 1973 Addenda.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific ProvisionSimilar Provision in 1971 Edition Through Summer 1973 Addenda

2. Use of material specifications earlier than the Code of Record may be employed (NA-1140(e) Winter 1981 Addenda).

None

Used at Specification Paragraph: Appendix A, paragraph 3.3.1; also Appendix B, Table B.1 and Table B.4.

Technical Discussion: Earlier dated material specifications may be used only after a review of the material specification to be used shows that it is equal to or more restrictive than the material specification applicable to 1971 Edition through Summer 1973 Addenda.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific ProvisionSimilar Provision in 1971 Edition Through Summer 1973 Addenda

3. Upgrading for material certified to a Code of Record after ASME Winter 1973 or later needed for material procured without full QA; the requirements of ASME Section III NA-3700/NCA-3800 were used to satisfy NB/NC/ND/NE-2130 and NB/NC/ND/NE-2600 of the 1971 Edition through Summer 1973 Addenda.

Certification by materials manufacturer required by NB/NC/ND/NE-2130 and qualification material manufacturers and acceptance of their QA programs required by the installer NB/NC/ND-NE-2600 and 345 NA.

Used at Specification Paragraph: Appendix A, paragraph 3.4.

Technical Discussion: Use of NA-3700/NCA-3800 provides more restrictive quality assurance requirements than that of the 1971 Edition through Summer 1973 Addenda requirements.

The specific provision is more restrictive than the requirements in 1971 Edition through Summer 1973 Addenda.

Specific Provision

4. S14 Supplementary Bend Test not required for the following materials:
 A36-75, 77a, 81a
 A515-74b, 78, 79b, 82
 A516-74a, 76, 77, 79b, 82, 84
 A283-75, 81
 This material is substituted for the applicable SA grades.

Similar Provision in 1971 Edition Through Summer 1973 Addenda

The following material specifications require bend testing:
 SA36-70a
 SA515-72
 SA516-72
 SA283-70a

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: Material specifications developed later than the Code of Record transferred bend testing from a requirement to a supplementary requirement to be identified when purchasing material if so desired. Adequate ductility is exhibited by the other mechanical testing (i.e., elongation, reduction of area) required under these specifications.

Technical Justification: Adequate ductility is demonstrated by the mechanical test requirements for elongation and reduction in area. NRC has approved the use of this provision through their revision to 10 CFR 50.55a.

The specific provision is less restrictive than the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

5. The following ASTM A500 specification material grades are approved for procurement to the requirements of the ASME code cases.
 (NA-1140b 1974 Edition):

Similar Provision in 1971 Edition Through Summer 1973 Addenda

A500 grade B could be used as appurtenant material under SA-36.

<u>Material</u>	<u>Grade</u>	<u>Code Case</u>
A500-74a	B, C	1644-3, 4, 5, 6
A500-76	B, C	N-71-9
A500-78	B, C	N-71-10
A500-80	B, C	N-71-11, 12
A500-82a	B, C	N-71-13

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: The material specifications have been accepted by ASME for use on class 1, 2, 3, or MC component supports constructed to the requirements of subsection NF. WBN does not invoke NF but, instead, hangers and supports were built to AISC rules; however, the material specifications identified will be purchased to the ASTM A500 specifications indicated.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

6. The following ASTM 501 specifications are approved for procurement to the requirements of the ASME code cases:

A501 could be used as appurtenant materials under SA-36.

<u>Material</u>	<u>Code Case</u>
A501-74	1644-3, 4, 5, 6
A501-76	N-71-9, 10
A501-80	N-71-11, 12
A501-81	N-71-13
A501-83	N-71-14
A501-84	N-71-15

Used in Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: The material specifications have been accepted by ASME for use in class 1, 2, 3, or MC component supports constructed to the requirements of NF. WBN does not invoke NF, but, instead, hangers and supports were built to AISC rules; however, the material specifications identified will be purchased to the ASTM A501 specifications indicated.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1983 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

7. The following ASTM A572 specifications are approved for procurement to the requirements of the ASME code cases:

None

<u>Material</u>	<u>Grades</u>	<u>Code Case</u>
A572-73	42, 50	1644, 1644-1, 2, 3, 4
A572-74b	42, 50	1644-5, 6
A572-77a	42, 50	N-71-9
A572-76	55	N1-71-9, 10, 11, 13
A572-79	42, 50	N-71-10, 11, 12
A572-80, 81a, 82a	42, 50	N-71-13, 14
A572-84	42, 50	N-71-15

Used at Specification paragraph: Appendix B, Table B.1.

Technical Discussion: The material specifications have been accepted by ASME for use on class 1, 2, 3, or MC component supports constructed to the requirements of subsection NF. WBN does not invoke NF, but, instead, hangers and supports were built to AISC rules; however, the material specifications identified will be purchased to the ASTM A572 specifications indicated.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

8. The following ASTM A570 specifications are approved for procurement to the requirements of the ASME code cases:

None

<u>Material</u>	<u>Grade</u>	<u>Code Case</u>
A570-72	C, E	1644-6
A570-75	C, E	N-71-9
A570-79	36, 45	N-71-10, 11, 12, 13, 14
A570-84a	36, 45	N-71-15

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: The material specifications have been accepted by ASME for use on class 1, 2, 3, or MC component supports constructed to the requirements of subsection NF. WBN does not invoke NF, but, instead, hangers and supports were built to AISC rules; however, the material specifications identified will be purchased to the ASTM A570 specifications indicated.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

9. The following ASTM A668 specifications are approved for procurement to the requirements of the ASME code cases:

None

<u>Material</u>	<u>Grade</u>	<u>Code Case</u>
A668-72	C,D,K,L,M,N	1644, 1644-1, 2
A668-72	C,D,F,K,L,M,N	1644-3, 4, 5, 6
A668-77	B,C,D,F,K,L	N-71-9
A668-79a	B,C,D,F,K,L	N-71-10, 11, 12
A668-82	B,C,D,F,K,L	N-71-13
A668-83	B,C,D,F,K,L	N-71-14, 15

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: The material specifications have been accepted by ASME for use on class 1, 2, 3, or MC component supports constructed to the requirements of subsection NF. WBN does not invoke NF, but, instead, hangers and supports were built to AISC rules; however, the material specifications identified will be purchased to the ASTM A668 specifications indicated.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

10. The following ASTM specifications are approved for procurement to the requirement of the ASME code cases:

None

<u>Material</u>	<u>Grade</u>	<u>Code Case</u>
A668-77	F,K,L,M,N	N-249
A668-79a	B,C,D,F,K,L,M,N	N-249-1, 2, 3
A668-82	B,C,D,F,K,L,M,N	N-249-4
A668-83	B,C,D,F,K,L,M,N	N-249-8,9

Used at Specification Paragraph: Appendix B, Table B.1.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

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|---|--|
| <p>11. A-479 type 300 series stainless steel is acceptable with 30-percent elongation and 40-percent reduction of area (SA-479, 1974 Edition through Summer 1976 Addenda) as indicated below:</p> | <p>SA-479 for type 300 series stainless steel requires a minimum 40-percent elongation and 50-percent reduction of area.</p> |
|---|--|

A479-75, -76, -77, -77e, -78, -79, -80, -82b, -83

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: This material specification was changed in 1975 to reflect the 30-percent elongation and 40-percent reduction of area criteria. SA-479 cannot be purchased today from this standard specification to meet the higher requirements unless each piece of material is individually tested. The criteria measures ductility with the 10-percent drop not significantly affecting the design parameters used for this material.

Technical Justification: Adequate ductility is demonstrated by satisfying the 30-percent elongation and 40-percent reduction in area criteria. NRC has approved the use of this provision through their revision to 10 CFR 50.55a.

The specific provision is less restrictive than the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

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|--|---|
| <p>12. ASTM A358-75 shall be purchased with the additional ASME SA-358 S5 supplementary requirements including the revision of S5 in Winter 1976 Addenda for qualified pipe.</p> | <p>SA-358 identical to ASTM A358-65 except with two paragraphs of additional requirements that apply.</p> |
|--|---|

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: By requiring the supplemental requirements to Winter 1976 Addenda, the ASTM specification will remain identical to SA specification.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific Provision

Similar Provision in 1971 Edition Through Summer 1973 Addenda

13. Piping used in ASME applications shall meet the additional ASME SA-358 S5 supplementary requirements for the addenda indicated:

SA-358 identical to ASTM A358-65 except with two paragraphs of additional requirements that apply.

<u>Material</u>	<u>Addenda</u>
A358-76, 77	Winter 1977
A358-78	Summer 1979
A358-78	1980 Edition

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: By requiring the supplemental requirements of the addenda, the ASTM specification will remain identical to SA specification.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

Specific ProvisionSimilar Provision in 1971 Edition Through Summer 1973
Addenda

14. The following ASTM A588 specifications are approved for procurement to the requirements of the ASME code cases: None

<u>Material</u>	<u>Grade</u>	<u>Code Case</u>
A588-71	A, B	1644, 1644-1, 2, 3, 4
A588-74a	A, B	1644-5, 6
A588-77a	A, B	N-71-9
A588-79a	A, B	N-71-10
A588-80a	A, B	N-71-11, 12
A588-82	A, B	N-71-13, 14
A588-84a	A, B	N-71-15

Used at Specification Paragraph: Appendix B, Table B.1.

Technical Discussion: The material specifications have been accepted by ASME for use in class 1, 2, 3, or MC component supports constructed to the requirements of subsection NF. WBN does not invoke NF but, instead, hangers and supports were built to AISC rules; however, the material specifications will be purchased to the ASTM A588 specifications indicated.

The specific provision is equally restrictive as the similar provision in 1971 Edition through Summer 1973 Addenda.

ATTACHMENT B

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BOILER AND PRESSURE VESSEL CODE SECTION III, DIVISION 1
USE OF SPECIFIC PROVISIONS OF LATER EDITIONS AND ADDENDAGeneral Construction Specification: G-53Title: ASME Section III and Non-ASME Section III Bolting MaterialDate of Specification: October 10, 1985, Revision 5.

The General Construction Specification uses specific provisions within the 1971 Edition with addenda through and including Summer 1973, except as noted below:

Specific Provision

For ASME Bolting Material (>1"), code class 3, marking shall be in accordance with the material specification. Heat code traceability is required.

Similar Provision in 1971 Edition through Summer 1973 Addenda

All material shall be marked in accordance with the marking requirements of the material specification (ND-2150).

Used at Specification Paragraph: Appendix A, note 2.

Technical Discussion: The use of the above specific provision provides a more restrictive requirement than that of the 1971 Edition through Summer 1973 Addenda requirements. In addition, the specific provision is more restrictive than the requirements of the ASME Section III, 1986 Edition through Winter 1987 Addenda.

The specific provision is more restrictive than the similar provision in the 1971 Edition through Summer 1973 Addenda.

ATTACHMENT C

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BOILER AND PRESSURE VESSEL CODE SECTION III, DIVISION 1
USE OF SPECIFIC PROVISIONS OF LATER EDITIONS AND ADDENDA

General Construction Specification: G-85

Title: On-Line Leak Sealing

Date of Specification: March 1987.

The General Construction Specification meets the specific provisions within the 1971 Edition with addenda through and including Summer 1973.

ATTACHMENT D

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BOILER AND PRESSURE VESSEL CODE SECTION III, DIVISION 1
USE OF SPECIFIC PROVISIONS OF LATER EDITIONS AND ADDENDA

General Construction Specification: G-43

Title: Support and Installation of Category I and I (L) Piping Systems

Date of Specification: August 14, 1986, Revision 9.

The General Construction Specification meets the 1971 Edition with addenda through and including Summer 1973, with the exception that the 16t or 4-inch requirement for impact testing of materials for attachments was eliminated by Code Case 1768, which was incorporated into the code by the Winter of 1976 Addenda to Section III, division 1, subsection NE. Code Case 1768 is listed in Regulatory Guide 1.84 and, therefore, does not have to be reported to NRC.

ATTACHMENT E

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BOILER AND PRESSURE VESSEL CODE SECTION III, DIVISION 1
USE OF SPECIFIC PROVISIONS OF LATER EDITIONS AND ADDENDA

General Construction Specification: G-39

Title: Cleaning During Fabrication of Fluid-Handling Components

Date of Specification: Revision 9, 1986.

The General Construction Specification meets specific provisions within the 1971 Edition with addenda through and including Summer 1973.

ENCLOSURE 2

RECORD OF DOCUMENTS TRANSMITTED TO NRC

<u>Document</u>	<u>Subject</u>
G-62	Material Documentation Requirements, ASME Section III Applications
G-53	ASME Section III and NON-ASME Section III (including AISC, ANSI/ASME B31.1, and ANSI B31.5) Bolting Material
G-85	On-Line Leak Sealing
G-43	Support and Installation of Category I and I (L) Piping Systems
G-39	Cleaning During Fabrication of Fluid- Handling Components
G-29*	Process Specifications for Welding, Heat Treatment, Nondestructive Examination, and Allied Field Fabrication and Operations (Volumes II through VI)

*This information is being provided formally to facilitate review of the welding process specification evaluations previously provided in the TVA to NRC letter dated August 21, 1987.

ENCLOSURE 3

LIST OF COMMITMENTS

No new commitments are provided by this submittal.