Dominion Resources Services, Inc.
5000 Dominion Boulevard, Glen Allen, VA 23060

Dominion

March 30, 2004

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Serial No.	03-584
	B19021
NL&OS/TJS	R0
Docket Nos.	50-338, 339
	50-281
	50-336, 423
License Nos.	NPF-4, 7
	DPR-37
	DPR-65
	NPF-49

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
DOMINION NUCLEAR CONNECTICUT, INC (DNC)
NORTH ANNA POWER STATION UNITS 1 AND 2
SURRY POWER STATION UNIT 2
MILLSTONE POWER STATION UNITS 2 AND 3
ASME SECTION XI INSERVICE INSPECTION PROGRAM
REQUEST TO USE CODE CASE N-663 AS AN ALTERNATIVE

The ASME Boiler and Pressure Vessel Code Committee approved Code Case N-663, "Alternative Requirements for Class 1 and 2 Surface Examinations Section XI, Division 1" on September 17, 2002. Code Case N-663 is not yet listed in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1." However, provisions stated in footnote 6 to 10 CFR 50.55a provide for the use of other Code Cases upon request, if approved by the Director of the Office of Nuclear Reactor Regulation pursuant to 10 CFR 50.55a(a)(3).

The NRC approved the use of Code Case N-663 for Entergy Operations' Arkansas Nuclear One, Unit 1, Grand Gulf Nuclear Station, River Bend Station, and Waterford Steam Electric Station, Unit 3 (TAC Nos. MB6880, MB6881, MB6879 and MB6882) in a correspondence dated August 26, 2003. In the associated safety evaluation the NRC concluded that "...use of Code Case N-663 for Class 1 and 2 surface examinations, in lieu of the IWB-2500 and IWC-2500 requirements, would provide an acceptable level of quality and safety."

Dominion / DNC has reviewed the Entergy Operations submittal and the NRC's subsequent approval and associated safety evaluation. Based on the information provided in those documents, and in accordance with 10 CFR 50.55a(a)(3)(i), Dominion / DNC requests NRC approval for the use of ASME Section XI Code Case N-663 as an alternative to the requirements of the ASME Boiler and Pressure Vessel Code, Section XI. Specifically, Dominion / DNC seeks approval to use Code Case N-663 as an alternative to the surface examination requirements of Table IWC-2500-1 for examination of ASME Code Class 2 piping welds (Categories C-F-1 and C-F-2).

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Surface examinations of these welds would, upon approval of this request, be limited to areas identified by Dominion / DNC as susceptible to outside surface attack. The basis for this relief request is provided in Attachment 1 for North Anna Units 1 and 2, Surry Unit 2 and Millstone Units 2 and 3. Dominion / DNC requests that the proposed alternative use of Code Case N-663 be approved for the duration of the program intervals for North Anna Units 1 and 2, Surry Unit 2 and Millstone Unit 2 and 3, as specified in Attachment 1. A copy of Code Case N-663 is provided in Attachment 2 for your information. NRC approval of this 10 CFR 50.55a(a)(3)(i) submittal is requested by July 31, 2004 to permit the use of Code Case N-663 during scheduled Fall 2004 refueling outages.

If you have any questions or comments, please contact us.

Very truly yours,

Leslie N. Hartz
Vice President - Nuclear Engineering
Virginia Electric and Power Company
Dominion Nuclear Connecticut, Inc

Commitments made in this letter: None.

Attachments

cc: U.S. Nuclear Regulatory Commission
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Atlanta, GA 30303-8931

U.S. Nuclear Regulatory Commission
Region I
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Mr. G. J. McCoy
NRC Senior Resident Inspector
Surry Power Station

Mr. M. T. Widmann
NRC Senior Resident Inspector
North Anna Power Station

Mr. S. M. Schneider
NRC Senior Resident Inspector
Millstone Power Station

Attachment 1

10 CFR 50.55a Request
Use of ASME Code Case N-663
as an Alternative to ASME Section XI Requirements

North Anna Power Station Units 1 (CMP-21) and 2 (CMP-22)
Surry Power Station Unit 2 (CC-001)
Millstone Power Station Units 2 (RR-89-49) and 3 (IR-02-36)

Dominion / DNC

10 CFR 50.55a Request
Use of ASME Code Case N-663
as an Alternative to ASME Section XI Requirements

North Anna Power Station Units 1 (CMP-21) and 2 (CMP-22)
Surry Power Station Unit 2 (CC-001)
Millstone Power Station Units 2 (RR-89-49) and 3 (IR-02-36)

ALTERNATIVE REQUIREMENTS FOR CLASS 2 SURFACE EXAMINATIONS

I. IDENTIFICATION OF COMPONENT

Component Numbers:

All ASME Code Class 2 piping welds

References:

1. ASME Code Case N-663, "Alternative Requirements for Class 1 and 2 Surface Examinations Section XI, Division 1" (Attachment 1)
2. Westinghouse WCAP-14572, Revision 1-NP-A, Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report, (NRC SER dated 12/15/98)
3. NRC Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability – ASME Section XI Division 1, Revision 13

Examination Categories:

C-F-1 for pressure retaining welds in austentic stainless steel or high alloy piping

C-F-2 for pressure retaining welds in carbon or low alloy steel piping

Item Numbers:

C5.10 through C5.42 and C5.50 through C5.82

Unit: Inspection Interval/Code Year Applicability:

SPS-2:	fourth 10-year interval/1998 Edition, 2000 Addenda
NAPS-1:	third 10-year interval/1989 Edition
NAPS-2:	third 10-year interval/1995 Edition, 1996 Addenda
MPS-2:	third 10-year interval/1989 Edition
MPS-3:	second 10-year interval/1989 Edition

Unit: Construction Code For Class II Piping:

SPS-2:	USAS B31.1, 1955 or 1967 Edition as applicable
NAPS-1:	USAS B31.7, 1969/1970 Edition
NAPS-2:	USAS B31.7, 1969/1970 Edition
MPS-2:	USAS B31.7, 1969 Edition and ASME Section III, 1971 Edition
MPS-3:	ASME Section III, 1971 Edition through Summer 1973 Addenda

II. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

IWC-2500 requires components be examined and pressure tested as specified in Table IWC-2500-1. For C-F-1 and C-F-2, this table requires inspection of a sampling of piping welds using surface examinations.

III. BASIS FOR RELIEF

Code Case N-663 provides that in lieu of the surface examination requirements for piping welds of Categories C-F-1 and C-F-2, surface examinations may be limited to areas identified by the Owner as susceptible to outside surface attack. Other ASME Section XI examination requirements for the subject piping welds, including volumetric examinations and pressure testing, will continue to be performed.

Code Case N-663 was approved by the ASME Boiler and Pressure Vessel Code Committee on September 17, 2002, but has not yet been included in the most recent listing of NRC approved code cases provided in Revision 13 of Regulatory Guide 1.147.

The proposed use of Code Case N-663 as an alternative to Code required surface examinations for piping welds of Categories C-F-1 and C-F-2 is consistent with the approved Westinghouse methodologies on risk-informed ISI contained in WCAP-14572, Revision 1-NP-A. This topical report concludes that the only degradation mechanism that requires a surface examination is outside diameter chloride cracking. Consequently, surface examination need only be performed when outside diameter chloride cracking is identified to be the degradation mechanism affecting the structural integrity of the subject piping welds.

Code Case N-663 incorporates lessons learned from the risk-informed initiatives and industry examination experience into ASME Section XI by requiring that an evaluation be conducted to identify locations, if any, where surface examinations would be of benefit from a generic piping degradation perspective. The results of this evaluation identify where outside diameter degradation is most likely to occur by reviewing plant specific programs and practices, and operating experience. If the potential for degradation is identified, Code Case N-663 defines examination techniques, volumes, and frequencies. As such, implementing Code Case N-663 will identify appropriate locations for surface examination, if any, and eliminate unnecessary examinations.

The additional requirement of N-663 to evaluate susceptibility to outside diameter degradation is an improvement to the existing "random" examination requirements. Therefore, the proposed alternative specified in ASME Code Case N-663 provides an acceptable level of quality and safety.

IV. ALTERNATE PROVISIONS

In accordance with the provisions of 10CFR50.55a(a)(3)(i), approval is requested to use Code Case N-663 as an alternative to the surface examination requirements of Table IWC-2500-1 for examination categories C-F-1 and C-F-2.

V. PRECEDENCE

Relief has previously been granted to Entergy Operations, Inc. to use Code Case N-663 for:
Arkansas Nuclear One, Unit 1 (TAC No. MB6880)
Grand Gulf Nuclear Station (TAC No. MB6881)
River Bend Station (TAC No. MB6879)
Waterford Steam Electric Station, Unit 3 (TAC No. MB6882)

Attachment 2

ASME Code Case N-663, "Alternative Requirements for Class 1 and 2 Surface Examinations Section XI, Division 1," dated September 17, 2002

Dominion / DNC

Approval Date: September 17, 2002
Expiration Date: September 18, 2005

Case N-663
Alternative Requirements for Class 1 and 2 Surface Examinations
Section XI, Division 1

Inquiry: What alternative to the surface examination requirements for piping welds of Examination Categories B-F, B-J, C-F-1, and C-F-2 may be used?

Reply: It is the opinion of the Committee that in lieu of the surface examination requirements for piping welds of Examination Category B-F (NPS 4 and larger), B-J (NPS 4 and larger), C-F-1, and C-F-2, surface examinations may be limited to areas identified by the Owner as susceptible to outside surface attack.

Susceptibility to outside surface attack shall be determined in accordance with Table 1.

Examination Category B-F less than NPS 4 and Examination Category B-J less than NPS 4 shall be examined in accordance with IWB-2500.

All areas identified as susceptible to outside surface attack shall be examined during each interval. The requirements of IWB-2411, IWB-2412, IWC-2411, and IWC-2412, as applicable, shall be met. Acceptance standards shall be in accordance with IWB-3514 or IWC-3514, as applicable. The areas shall be reexamined in the same sequence, during subsequent inspection intervals over the service lifetime of the piping item, to the extent practical.

TABLE 1
SUSCEPTIBILITY CRITERIA

Mechanism	Criteria
External chloride stress corrosion cracking	• austenitic stainless steel base metal, welds, or heat affected zone (HAZ), and • operating temperature > 150°F, and • a piping outside surface is within five pipe diameters of a probable leak path (e.g., valve stem) and is covered with nonmetallic insulation that is not in compliance with U.S. NRC Regulatory Guide 1.36 (e.g., chloride content) or equivalent requirements or • austenitic stainless steel base metal, welds, or HAZ, and • a piping outside surface is exposed to wetting from a concentrated chloride-bearing environment (e.g., seawater, brackish water, brine)
Other outside surface initiated mechanisms	Items identified as susceptible to outside surface attack by a plant-specific service history review. This review should include plant-specific processes and programs that minimize chlorides and other contaminants.