

February 13, 2002

Mr. David A. Christian
Senior Vice President
and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Blvd.
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SUBJECT: NORTH ANNA POWER STATION, UNIT 1 - ASME SECTION XI INSERVICE
INSPECTION (ISI) PROGRAM RELIEF REQUEST NDE-PARTIAL-2 (TAC NO.
MB1129)

Dear Mr. Christian:

By letter dated January 29, 2001, as supplemented by letter dated November 26, 2001, you requested relief from certain requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, associated with examinations where only partial coverage could be obtained due to interferences and weld geometry.

Our evaluation and conclusion are contained in the enclosed Safety Evaluation. The staff has concluded that the requirements of Section XI of the ASME Code are impractical to perform, and the examinations that have been performed provide reasonable assurance of structural integrity of the subject welds. The relief you requested is authorized pursuant to Title 10 of the *Code of Federal Regulations* Section 50.55a(g)(6)(i) for the North Anna Power Station, Unit 1 third 10-year ISI interval.

Sincerely,

/RA/

Richard J. Laufer, Acting Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-338

Enclosure: As stated

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO THE THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION, UNIT 1

DOCKET NUMBER 50-338

1.0 INTRODUCTION

The Inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable addenda as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g), except where specific relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i).

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The Code of record for the North Anna Power Station, Unit 1 third 10-year ISI interval is the 1989 Edition of the ASME Boiler and Pressure Vessel Code.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

By letter dated January 29, 2001, as supplemented by a letter dated November 26, 2001, the Virginia Electric and Power Company (the licensee) submitted Request for Relief No. NDE-Partial-2 for the third 10-year ISI program at the North Anna Power Station, Unit 1.

2.0 EVALUATION

The information provided by the licensee in support of the request for relief from the ASME Code, Section XI (the Code) requirements has been evaluated and the basis for disposition is documented below.

2.1 Request for Relief No. NDE-Partial-2

2.2 Code Requirements:

The 1989 Edition of ASME Code, Section XI, Table IWC-2500-1, Examination Category C-A, Item Number C1.20, Examination Category C-C, Item Numbers C3.20 and C3.30, and Examination Category C-F-1, Item Numbers C5.11 and C5.21 do not allow any limitations to the required volumetric and surface examinations. Code Case N-460, Alternative Examination Coverage for Class 1 and Class 2 Welds, allows a reduction in coverage if it is less than 10%.

System/Components(s) for Which Relief is Requested:

<u>Mark Weld No.</u>	<u>Line No.</u>	<u>Drawing No.</u>	<u>Class</u>
1	1-SI-TK-2	11715-WMKS-SI-TK-2	2
72H	14"-RH-2-602-Q2	11715-WMKS-0113A-1	2
WS-03	1-CH-P-1A	11715-WMKS-CH-P-1A	2
WS-04	1-CH-P-1A	11715-WMKS-CH-P-1A	2
11	3"-CH-81-1502-Q2	11715-WMKS-0111XA	2
64	14"-RH-3-602-Q2	11715-WMKS-0113A-2	2

2.3 Licensee's Code Relief Request:

Relief is requested from examining the third-interval Code required volumetric and surface examinations for the identified head-to-shell, circumferential and tee valve welds, and welded supports. Relief is also requested for the pre-service examination of Weld 11.

In its submittal dated November 26, 2001, the licensee noted that Weld 11 at check valve 1-CH-279 on line 3"-CH-81-1502 received a pre-service radiography examination per construction code requirements ANSI B31.7, 1969 Edition, 1970 Addenda. The licensee is requesting relief from the ASME Code, Section XI pre-service volumetric examination coverage of less than 100%.

2.4 Licensee's Basis for Requesting Relief

Welds 1, 72H, WS-03, WS-04, 11, and 64 have been examined to the extent practical as required by the Code. Due to weld joint geometry and obstructions the reduction in coverage for the listed components was greater than 10%. Tables NDE-Partial-2-1, 2, 3, and 4 are provided detailing the limitations experienced. Amplifying sketches are also provided.

2.5 Licensee's Proposed Alternative Examination

It is proposed that the examinations already completed at the reduced coverage be counted as meeting the Code requirements.

Table NDE-Partial-2-1
North Anna, Unit 1
Examination Coverage Estimates

Mark/Weld No.	Category	Item No.	Scan Coverage %	Surface Coverage %	Reason for Partial	Sketch
1	C-A	C1.20	78		Support Legs 3 and 4	1
72H	C-C	C3.20		50	Support and Ceiling Interference	2 and 3
WS-03	C-C	C3.30		78	Unable to Access Bottom of Welded Support and Basemetal Due to Flange Connection	4
WS-04	C-C	C3.30		78	Unable to Access Bottom of Support at Flange Radius Area	4
11	C-F-1	C5.21	87		Welded Joint configuration and the short distance between the weld and the branch of the Tee	5
64	C-F-1	C5.11	72		Valve to elbow configuration	6

2.6 Staff Evaluation:

The Code requires 100% ultrasonic and/or surface examination of the subject welds. The staff has determined, from Sketches NDE-Partial-2-1 through NDE-Partial-2-6, that interferences from configuration, geometry, and other components preclude the complete ultrasonic and/or surface examination of the subject welds. Therefore, the Code requirements are impractical and to meet the Code requirements, design modifications would be necessary to provide access for examination. Imposition of the Code requirements would result in an undue burden on the licensee.

As shown on Tables NDE-Partial-2-1 through NDE-Partial-2-4, the licensee has examined a significant portion of the subject welds, obtaining 78% through 87% coverage for the completed Code volumetric examinations. For the Code surface examinations, the licensee obtained 50% through 78% coverage. Based on the licensee's volumetric and/or surface examinations that have been performed, any significant patterns of degradation should be detected by these examinations. Therefore, reasonable assurance of structural integrity of the subject components has been provided.

3.0 CONCLUSION

The staff concludes that the Code requirements are impractical to perform and the examinations that have been performed provide reasonable assurance of structural integrity of the subject welds. Therefore, relief is granted pursuant to 10 CFR 50.55a(g)(6)(i) for the third 10-year ISI interval. The staff has determined that granting relief is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Attachments: Sketches NDE-Partial-2-1 through NDE-Partial-2-6
Tables NDE-Partial-2-2 through NDE-Partial-2-4

Principal Contributor: T. McLellan

Date: February 13, 2002