

January 4, 2005

Mr. David A. Christian
Sr. Vice President and Chief Nuclear Officer
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Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, Virginia 23060-6711

SUBJECT: SURRY POWER STATION, UNIT 2 - AMERICAN SOCIETY OF MECHANICAL
ENGINEERS INSERVICE INSPECTION PROGRAM THIRD 10-YEAR
INTERVAL REQUEST FOR RELIEF SR-004, REVISION 2 (TAC NO. MC3693)

Dear Mr. Christian:

By letter dated June 29, 2004, as supplemented by letter dated October 12, 2004, Virginia Electric and Power Company (VEPCO) submitted Relief Request SR-004, Revision 2 for the third 10-year Inservice Inspection (ISI) Interval at Surry Power Station, Unit 2. VEPCO had sought to use the 1995 Edition through the 1996 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI instead of the 1989 Edition of the ASME Code, Section XI.

The Nuclear Regulatory Commission (NRC) staff has completed its review of Relief Request SR-004, Revision 2 and our evaluation is contained in the enclosed Safety Evaluation. The NRC staff concludes that the use of Paragraph IWC-1223 from the 1995 Edition with the 1996 Addenda of Section XI of the ASME Code may be used in place of the Paragraph IWC-1230 from the 1989 Edition of the ASME Code for the subject welds that are encased or embedded in concrete. Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff approves of Relief Request SR-004, Revision 2 for the third 10-year ISI interval at Surry, Unit 2.

Sincerely,

/RA/

John A. Nakoski, Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-281

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

SURRY POWER STATION, UNIT 2

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

1.0 INTRODUCTION

By letter dated June 29, 2004, as supplemented by letter dated October 12, 2004, Virginia Electric and Power Company (the licensee) submitted Relief Request SR-004, Revision 2. The licensee requested to use the 1995 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI with the 1996 Addenda, Paragraph IWC-1223, instead of the required 1989 Edition of the ASME Code, Section XI.

The licensee requested approval of this relief for the remainder of the third 10-year Inservice Inspection (ISI) Interval at Surry Power Station, Unit 2. Although the third 10-year ISI interval, which began on May 10, 1994, ended on May 9, 2004, the ASME Code permits a 1-year extension for selected examinations. The third 10-year ISI interval with the 1-year extension is scheduled to end on May 9, 2005.

During the third 10-year ISI interval, the licensee had disassembled Pump 02-SI-P-1B for maintenance activities. The licensee inspected the pump suction can welds in accordance with Relief Request SR-004, Revision 1; however, the licensee discovered the examinations had been performed on the incorrectly specified welds. This was because SR-004, Revision 1 identified the incorrect pressure-retaining pump casing welds. By invoking the ASME Code's allowable 1-year extension to May 9, 2005, the licensee plans to disassemble Pump 2-SI-P-1B during the spring 2005 refueling outage and inspect the correct pump casing welds to appropriately close out the third 10-year ISI.

2.0 REGULATORY REQUIREMENTS

The ISI of ASME Code Class 1, Class 2, and Class 3 components shall be performed in accordance with Section XI of the ASME Code and applicable editions and addenda as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). As stated, in part, in 10 CFR 50.55a(a)(3), alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (NRC), if the licensee demonstrates that: (I) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Enclosure

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 preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection 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) on the date 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval. The applicable ASME Code of record for the third 10-year ISI at Surry, Unit 2 is the 1989 Edition of the ASME Section XI Code.

3.0 SAFETY EVALUATION - Relief Request SR-004, Revision 2

3.1 Identification of Components

The components affected by this request for relief are:

Component	Drawing Number	Weld Number
2-RS-P-2A	11548-WMKS-RS-P-2A	Pump casing weld
2-RS-P-2B	11548-WMKS-RS-P-2B	Pump casing weld
2-SI-P-1A	11548-WMKS-SI-P-1A	Pump casing weld
2-SI-P-1B	11548-WMKS-SI-P-1B	Pump casing weld

3.2 Components for Which Relief Is Requested

The 1989 Edition of the ASME Code, Section XI, Table IWC-2500-1, Examination Category C-G, Item Number C6.10, "Pump Casing Welds," requires a surface examination on 100 percent of the welds in all components in each piping run examined under Examination Category C-F. Footnote (1) of Table IWC-2500-1 states, "In case of multiple pumps and valves of similar design, size, function, and service in a system, the examination of only one pump and one valve among each group of multiple pumps and valves is required." In addition, Footnote 2 of this table states, "The examination may be performed from either the inside or outside surface of the component."

3.3 Proposed Alternate Examination

The licensee requested approval to use the 1995 Edition with the 1996 Addenda of the ASME Code, Section XI, Paragraph IWC-1223 to perform inspections of Examination Category C-G, Item Number C6.10, pump casting welds on the Outside Recirculation Spray and Low Head Safety Injection pumps. When the licensee removes a pump for maintenance activities, it

intends to perform the ASME Code-required surface examination of 100 percent of the accessible welds in accordance with Table IWC 2500-1, Examination Category C-G, Item Number C6.10. In addition, the licensee intends to comply with the related requirements of the 1995 Edition with the 1996 Addenda of the ASME Code regarding the Examination Category C-G, Item Number C6.10.

3.4 Licensee's Basis for Relief

In the 1995 Addenda of the ASME Section XI 1995 Code Edition, paragraphs IWC-1223 in section IWC-1220, "Components Exempt From Examination," was changed to read "Welds or portions of welds that are inaccessible due to being encased in concrete, buried underground, located inside a penetration, or encapsulated by guard pipe" in the definition of "Inaccessible Welds."

These pumps are vertical, two-stage, centrifugal pumps with an extended shaft and casing that allows suction from the containment sump. This pump casing extends subgrade for more than 40 feet. The pump column consists of bolted flange sections of pipe. Circumferential welds exist at the pipe to flange locations. The pump is suspended in a suction can container, which renders the welds inaccessible while the pump is in operational standby. Only when the pump is disassembled for maintenance do the pressure retaining casing welds become accessible.

The 1995-96, and subsequent 1998-2000, edition of the ASME Section XI Code requires that a surface examination be performed on the pump casing welds only when the pump is removed from the suction can for maintenance; thus, allowing accessibility to the welds. The later edition of the code does not require disassembly of the pump for the sole purpose of performing the code specified surface examination. To remove the pumps only to perform the Section XI examination is inconsistent with the requirements of the later code edition and is considered an unnecessary burden.

3.5 NRC Staff Evaluation

As stated, in part, in 10 CFR 50.55a(g)(4)(iv) inservice examination of components and system pressure test may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b) and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met.

The ISI Code of record for the subject welds is the 1989 Edition of the ASME Code, Section XI, Examination Category C-G, Item Number C6.10 and Paragraph IWC-1220, "Components Exempt for Examination." The 1989 Edition of the ASME Code, Paragraphs IWC-1220 and IWC-1230, "Concrete Encased Components," do not address the inaccessibility of the subject pump. The pumps are mounted vertically with an extended shaft and casing to allow suction from the containment sump. The subject welds are part of the associated pump casings that are embedded within the concrete building structure. This concrete embedment makes the welds inaccessible from the outside. Access to the inside of the pump casings is limited by the physical size of the casing, as well as the pump shaft and pump shaft supports. In order to satisfy the 1989 Edition of the ASME Code examination requirement, the pump assembly would have to be removed from the concrete structure and disassembled.

The difficulties associated with the removal of the components with parts encased in concrete were recognized in the 1995 Edition with the 1995 Addenda of the ASME Code by expanding Paragraph IWC-1220 to include inaccessible welds in Paragraph IWC-1223.

Before implementing Paragraph IWC-1223, the licensee must determine that all related requirements are met. In its letter dated October 12, 2004, the licensee stated that related requirements of the 1995 Edition with the 1996 Addenda of the ASME Code will be met without specifically identifying any related requirements. Therefore, the NRC staff only considered ASME Code changes to the 1989 Edition, Paragraphs IWC-1220 and IWC-1230. Paragraph IWC-1230 is not in the 1995 Edition with the 1996 Addenda. Instead, Paragraph IWC-1230 requirements were included in Paragraph IWC-1223 in the 1995 Edition with the 1996 Addenda.

The criterion in IWC-1223 identifies inaccessible welds as: "Welds or portions of welds that are inaccessible due to being encased in concrete, buried underground, located inside a penetration, or encapsulated by guard pipe." The criterion in IWC-1223 applies to the subject welds because they are enclosed in a concrete well that would necessitate disassembly in order to perform the required examination. The NRC staff has referenced the 1995 Edition with the 1996 Addenda of the ASME Code in the CFR without taking exception to Paragraph IWC-1223. Therefore, the use of Paragraph IWC-1223, 1995 Edition with the 1996 Addenda of the ASME Code, Section XI for the subject welds may be used as a stand-alone requirement for ISI examinations when used in lieu of IWA-1230, 1989 Edition of the ASME Code, Section XI.

4.0 CONCLUSION

Based on the above review, the NRC staff concludes that the use of Paragraph IWC-1223 from the 1995 Edition with the 1996 Addenda of the ASME Code may be used in place of the Paragraph IWC-1230 from the 1989 Edition of the ASME Code for the subject welds that are encased or embedded in concrete. Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff authorizes the use of the 1995 Edition with the 1996 Addenda of the ASME Code, Section XI, Paragraph IWC-1223 for the subject welds.

All other requirements of the ASME Code requirements for which relief has not been specifically requested remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

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