

April 19, 2000

Mr. J. P. O'Hanlon
Senior Vice President - Nuclear
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060

SUBJECT: SURRY POWER STATION, UNIT 2 - RELIEF REQUEST TO THE AMERICAN
SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE SECTION XI,
INSERVICE INSPECTION (ISI) REQUIREMENTS (TAC NO. MA7755)

Dear Mr. O'Hanlon:

The purpose of this letter is to grant the relief you requested for Surry Power Station, Unit 2, related to your ASME Code Section XI, ISI requirements.

By letter dated December 10, 1999, Virginia Electric and Power Company submitted a request for relief from the ASME Code, Section XI requirements for ISI at Surry Power Station, Unit 2. You requested relief from performing Class 1 piping weld examinations during the next refueling outage (fall, 2000) as required by the ASME Code to meet the minimum percentage of examinations.

Our evaluation and conclusions are contained in the enclosed Safety Evaluation, which authorizes a delay of two years from December 10, 1999, or through the remaining second ISI period of the third interval, whichever is sooner, for conforming to the Class 1 piping weld examination requirements of the 1989 Edition of the ASME Code, Section XI. Your proposed alternative provided on December 10, 1999 is authorized pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.55a(a)(3)(i), based upon a determination that the proposal provides an acceptable level of quality and safety.

This completes our effort under TAC No. MA7755, and the TAC is closed.

Sincerely,

/RA/

Richard L. Emch, Jr., 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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Dear Mr. O'Hanlon:

The purpose of this letter is to grant the relief you requested for Surry Power Station, Unit 2, related to your ASME Code Section XI, ISI requirements.

By letter dated December 10, 1999, Virginia Electric and Power Company submitted a request for relief from the ASME Code, Section XI requirements for ISI at Surry Power Station, Unit 2. You requested relief from performing Class 1 piping weld examinations during the next refueling outage (fall, 2000) as required by the ASME Code to meet the minimum percentage of examination.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

OF THE THIRD 10-YEAR INTERVAL INSERVICE INSPECTION

REQUEST FOR RELIEF

FOR VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION, UNIT 2

FOR

DOCKET NUMBER 50-281

1.0 INTRODUCTION

Inservice inspection of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (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.

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 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 ten-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) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. For Surry Power Station, Unit 2, the applicable edition of Section XI of the ASME Code for the third ten-year inservice inspection (ISI) interval, which began on May 10, 1994, is the 1989 edition.

By letter dated December 10, 1999, the licensee, Virginia Electric and Power Company indicated their intent to implement a risk-informed inservice inspection program (RI-ISI) as an alternative to the current ISI program, and submitted a relief request regarding the requirements of the ASME Code, Section XI for Class 1 piping, to perform those remaining piping weld examinations needed to meet the second period minimum percentage requirements during the last refueling outage (October 2000) of that period. This request was

made pursuant to 10 CFR 50.55a(a)(3)(ii) for the second period of the third 10-year ISI interval. The NRC staff reviewed and evaluated the licensee's proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i).

2.0 EVALUATION

The information provided by the licensee in support of the proposed alternative contained in this relief request has been evaluated, and the bases for disposition are documented below.

Relief Request, Examination Categories B-F and B-J, pertaining to Class 1 piping welds

2.1 Code Requirement

The 1989 Edition of the ASME Code, Section XI requires that a minimum percentage of examinations in each category of welds be completed during each successive inspection period and inspection interval in accordance with Tables IWB-2412-1. For the second period of the third inspection interval, the minimum examination requirement is 50%.

2.2 Licensee's Code Alternative Request

Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested staff approval of an alternative from the Code-required minimum examination percentage for the second period of the third inspection interval (May 10, 1997 to May 10, 2001) for Class 1 piping welds under Examination Categories B-F and B-J.

According to the ASME Code, Section XI, Tables IWB-2412-1, completion of a minimum of 50% is required in the second inspection period for each category of weld. There are two refueling outages within the second period. In the second or the last outage starting October, 2000, the licensee originally scheduled an examination of the remaining approximately 76 welds for the second period for the Category B-F and B-J welds. The licensee requested to not perform the remaining examinations needed for meeting the Code required 50% during the next outage starting October 2000, based on the intent to develop and implement an alternative ISI program using a risk-informed approach.

2.3 Licensee's Basis for Relief Request (as stated)

Virginia Electric and Power Company is currently developing a Class 1 Risk Informed Inservice Inspection (RI-ISI) Program for Surry Unit 2 using Westinghouse Topical Report, WCAP-14572 Revision 1-NP-A. Submission of the new program for NRC review is currently planned for April 2000. Surry Unit 2 is presently in the second period, third interval, of the ASME Section XI (1989 Edition) Inservice Inspection Program.

The NRC previously published Information Notice (IN) 98-44, "Ten-Year Inservice Inspection (ISI) Program Update for Licensees That Intended to Implement Risk-Informed ISI of Piping." This document states that "... the staff will consider authorizing a delay up to 2 years in implementation of the next 10-year ISI program for piping only to allow licensees to develop and obtain approval for their RI-ISI program at the next available opportunity using the staff-approved topical reports." We previously requested a delay for the implementation of the North Anna Unit 1 ASME Section XI third inspection interval and development of a RI-ISI program, and received NRC approval on May 10, 1999. The approval was based on the provisions of 10 CFR 50.55a(a)(3)(ii) because compliance with the requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Although, IN 98-44 does not address programs that may choose to implement a RI-ISI program mid-interval, Surry Unit 2 will be likewise confronted with a similar hardship and difficulty, since it will be submitting an ASME Class 1 RI-ISI Program mid-interval.

As noted above, Surry Unit 2 is in the second period of its third ASME Section XI inspection interval. Surry Unit 2 has one refueling outage remaining in the second period of the third interval currently scheduled for October 2000. Approximately 76 welds are scheduled to be examined to the requirements of Category B-F and B-J of ASME Section XI (1989 Edition) during the outage to complete the second period requirements under the current program. The inspection includes volumetric and surface examinations as required by the Code at these locations. Approximately 97 locations were inspected in the first period and 35 locations in the second period. In contrast, the RI-ISI program for Surry Unit 1 requires only 68 Class 1 locations to be examined (volumetric, surface, visual VT-2) over the entire ten-year interval.

Based on the RI-ISI program results previously implemented for Surry Unit 1, performing further examinations under the current ASME Section XI Category B-F and B-J requirements at Surry Unit 2 during the Fall 2000 refueling outage would result in unnecessary personnel exposure since the inspection sample already performed exceeds the sample that would likely be required by implementation of a RI-ISI program. Furthermore, the intent and provisions established in IN 98-44 allow for delays in performing currently required ISI inspections by recognizing that many inspections will be eliminated by implementing a RI-ISI program. Alternatively, it is proposed that the RI-ISI program that will be submitted for Surry Unit 2 by April 2000 be implemented in the third period of the third inspection interval with approximately one third of the interval examinations being scheduled in that period. The first RI-ISI examinations would be performed in the first refueling outage of the third period, which is currently scheduled for April 7, 2002. Other Code requirements (e.g., Class 2 and 3 inspections, pressure testing, repairs and replacements, etc.) would be conducted as required.

2.4 Licensee's Proposed Alternative Examination (as stated)

Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), Virginia Electric and Power Company requests that the Surry Unit 2 ISI program (NDE, Categories B-F and B-J) for the second period, third inspection interval, be suspended until the third period to permit the preparation, submittal and NRC review of a Surry Unit 2 RI-ISI program for Class 1 piping. The Surry Unit 2 RI-ISI program will be implemented in the third period, third inspection interval, as an alternative to current ASME Section XI requirements. This relief request for Surry Unit 2 has been reviewed and approved by the Station Nuclear Safety and Operating Committee.

2.5 Staff Evaluation

The NRC staff has reviewed the information concerning the ISI program request for relief and the proposed alternative submitted in the letter dated December 10, 1999, for the second period of the third 10-year ISI interval of Surry Unit 2 pertaining to Class 1 piping welds. The Code requires that at least 50% of the welds in each category be examined during the second period of the third interval, which for Surry Unit 2 means that the remaining 76 welds not examined from the first outage should be examined in the second or the last outage (in October 2000) of the period.

NRC Information Notice 98-44, "Ten-Year Inservice Inspection (ISI) Program Update for Licensees that Intend to Implement Risk-Informed ISI of Piping" states that for licensees that intend to implement a RI-ISI for piping and follow the guidance provided in IN 98-44, the staff will consider authorizing a delay of up to two years in implementation of the ISI program for piping only. The Surry Unit 2 current ISI program for the third 10-year interval, started on May 10, 1994, and its second period will end on May 10, 2001. The Surry Unit 2 RI-ISI program would be expected to be similar to the Surry Unit 1 RI-ISI program, which was reviewed and approved by the staff in 1999. Both Surry Unit 1 and Unit 2 RI-ISI programs use the same methodology described in Westinghouse Topical Report, WCAP-14572. The licensee indicated that a RI-ISI program for Surry Unit 2 will be submitted by April 2000. The licensee had performed examination of 35 Class 1 piping welds during the first outage of the second period. Thus, the proposal to suspend the current ISI program for Class 1 piping during the second refueling outage (October 2000) and to start implementation of the RI-ISI program in the third period (starting May 10, 2001) is within the two years delay period discussed in IN 98-44 for implementing the alternative program using RI-ISI methodology. The licensee further indicated that the RI-ISI program will be implemented in the third period of the third inspection interval (ending on May 10, 2004), and its request for relief and subsequent implementation of the alternative program are only for Class 1 piping welds in Categories B-F and B-J. Therefore, this proposed alternative excludes any existing augmented examination program, and the existing ISI program for piping welds other than Class 1. This is in conformance with IN 98-44 that the performance of augmented examinations would be unaffected by staff approved delays in updating ISI programs to accommodate development of risk-informed ISI programs.

The RI-ISI program that will be developed will result in a substantial reduction in the required number of piping weld examinations. Examination of this reduced number of Class 1 piping welds will be spread over the outages in the third period of the third interval that begins on May 10, 2001. Furthermore, the RI-ISI program developed by the licensee will be reviewed by the NRC and will require NRC authorization prior to implementation. On this basis, the staff has determined that the licensee's proposed alternative provides an acceptable level of quality and safety and is, therefore, authorized pursuant to 10 CFR 50.55a(a)(3)(i).

Based on information provided in this request for relief, and the target date established by the licensee to submit the alternative RI-ISI program, the staff has determined that relief from performing Class 1 piping weld examinations during the next refueling outage (October 2000) as required by the ASME Code to meet the minimum percentage of examination is acceptable.

Therefore, this relief request is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the request provides an acceptable level of quality and safety. This safety evaluation authorizes a delay of two years from December 10, 1999, or through the remaining second ISI period of the third interval, whichever is sooner, for conforming to the piping weld examination requirements of the 1989 Edition of the ASME Code, Section XI, for the third 10-year ISI interval at Surry Unit 2.

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Date: April 19, 2000

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