

November 4, 2003

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

SUBJECT: SURRY POWER STATION, UNIT 1 - INSERVICE INSPECTION PROGRAM  
RELIEF REQUEST CMP-28, REVISION 1, EXTENSION OF REACTOR  
VESSEL INSPECTION SCHEDULE (TAC NO. MB8480)

Dear Mr. Christian:

By letter dated September 30, 2002, Virginia Electric and Power Company (VEPCO, the licensee) requested approval to extend the inspection interval for performing the Surry Power Station, Unit 1, reactor vessel examinations beyond the one-year extension allowed by the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI. In a letter dated April 10, 2003, the licensee notified the Nuclear Regulatory Commission (NRC) staff that they were changing the basis for the relief request. The April 10, 2003, letter superseded the licensee's relief request dated September 30, 2002, in its entirety.

The NRC staff's evaluations and conclusions are contained in the enclosed safety evaluation. The NRC staff has concluded that your proposed alternative as described in your request for relief provides reasonable assurance of structural integrity. Furthermore, the NRC staff found that complying with the requirements of ASME Code Section XI would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, pursuant to Title 10 of the *Code of Federal Regulations*, Section 50.55a(a)(3)(ii), your proposed alternative is authorized for Surry Power Station, Unit 1, until December 31, 2004.

Sincerely,

/RA/

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

Docket No. 50-280

Enclosure: As stated

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM  
REQUEST FOR RELIEF NO. CMP-28, REVISION 1  
SURRY POWER STATION, UNIT 1  
VIRGINIA ELECTRIC AND POWER COMPANY  
DOCKET NOS. 50-280

1.0 INTRODUCTION

By letter dated September 30, 2002, Virginia Electric and Power Company (VEPCO, the licensee) requested approval to extend the inspection interval for performing the Surry Power Station (SPS), Unit 1, reactor vessel examinations beyond the 1-year extension allowed by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI. In a letter dated April 10, 2003, the licensee superseded its September 30, 2002, relief request, providing the Nuclear Regulatory Commission (NRC) staff a revised basis for the relief request. The licensee is requesting to perform the examination of the SPS Unit 1 reactor vessel beyond the 1-year allowable Code extension date of October 13, 2004, but no later than December 31, 2004.

2.0 REGULATORY REQUIREMENTS

Inservice inspection (ISI) of the ASME Code Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME 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 NRC pursuant to 10 CFR 50.55a(6)(g)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if the applicant 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.

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) 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 Surry Power Station, Unit 1, third 10-year ISI interval is the 1989 Edition of the ASME Boiler and Pressure Vessel Code.

ENCLOSURE

### 3.0 TECHNICAL EVALUATION

Request for Relief No. CMP-28, Revision 1

#### Code Requirements

The requirements of the 1989 edition of ASME Section XI, Subparagraph IWA-2430(a) states, "The inservice examinations and system pressure tests required by IWB, IWC, IWD, and IWE shall be completed during each of the inspection intervals for the service lifetime of the power unit." Subparagraph (d) states, "For components inspected under Program B, each of the inspection intervals may be extended or decreased by as much as 1 year. Adjustments shall not cause successive intervals to be altered by more than 1 year from the original pattern of intervals."

#### System/Component(s) for Which Relief is Requested:

<u>Category</u>	<u>Item</u>	<u>Description</u>
B-A	B1.11	Circumferential Shell Weld
B-A	B1.12	Longitudinal Shell Weld
B-A	B1.30	Shell-to-Flange Weld
B-D	B3.90	Nozzle-to-Vessel Weld
B-D	B3.1 00	Nozzle Inside Radius Weld
B-G-1	B6.40	Flange Threads
B-N-1	B13.10	Reactor Vessel Internals
B-N-2	B13.50	Interior Attachments Within Beltline
B-N-2	B13.60	Interior Attachments Beyond Beltline
B-N-3	B13.70	Removable Core Support Structure
R-A	R1.11	Dissimilar Metal NPS 4 or larger <sup>1</sup>

#### Licensee's Proposed Alternative Examination:

For Request for Relief No. CMP-28, Revision 1, relief is requested pursuant to 10 CFR 50.55a(a)(3)(ii) to permit the proposed alternative of extending the timeframe for performing the SPS Unit 1 reactor vessel examinations beyond the 1-year ASME Code allowable extension date of October 13, 2004, but no later than December 31, 2004.

#### Licensee's Basis for Requesting Relief:

Currently, Surry Power Station Unit 1 is in the third period of the third 10-year inservice inspection interval. The end date for the interval is October 13, 2003. As allowed by ASME Section XI, Virginia Electric and Power Company (Dominion) was planning to use the one-year extension noted in Section II above [See "Code Requirements"] to complete the third interval during the Fall 2004 refueling outage. This outage was not

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1. Category R-A and Item R1.11 are Risk-Informed ISI program designations. The Surry risk-informed ISI program was approved in NRC's Safety Evaluation dated December 16, 1998.

expected to exceed the one-year extension; consequently, it was not anticipated that Code relief would be required.

However, due to recent industry events and plant reactor vessel head inspections, Dominion is now planning to replace the Surry Unit 1 reactor vessel head during the Spring 2003 (Cycle 18) refueling outage [the licensee replaced the head this past spring]. Consequently, the refueling outage schedule for Surry Unit 1 has been extended and the Fall 2004 outage start date has moved beyond the one year grace period. Relief is now required to perform the third interval reactor vessel examinations beyond the Code allowable one-year extension period but no later than December 31, 2004. The fourth inservice inspection interval start date will remain as October 14, 2003.

Previous 10-year reactor vessel exams were completed on February 1, 1994. Considering the Code allowed one-year extension, the time between successive exams (February 1, 1994 to December 31, 2004) will still be less than the eleven years allowed by the Code. Therefore, performing the examinations during the Fall 2004 refueling outage will continue to ensure that the reactor vessel will be inspected within the time frame allowed by the ASME Code. If relief were not granted, the unit would have to be taken off line earlier than necessary to perform the reactor vessel inservice examinations. Consequently, performing the reactor vessel examinations at the Code required frequency discussed in Section II above is considered a hardship without any compensating increase in quality or safety.

#### Staff Evaluation:

The ASME Code, Section XI allows that for components inspected under Program B each of the inspection intervals may be extended or decreased by as much as 1 year. Adjustments shall not cause successive intervals to be altered by more than 1 year from the original pattern of intervals. The SPS, Unit 1 third 10-year ISI program ends October 13, 2003; however, the licensee extended its third interval for the Fall 2004 refueling outage as the Code allows. Furthermore, the fourth 10-year ISI start date will remain as October 14, 2003. The licensee replaced the SPS Unit 1 reactor vessel head during the Spring 2003 refueling outage. As a result of the head replacement, the Fall 2004 outage refueling outage schedule for SPS Unit 1 has been extended beyond the 1-year allowed by the Code. The licensee has requested to extend the third 10-year interval by approximately 2½ months beyond the Code-allowable 1-year extension period, but no later than December 31, 2004.

The licensee stated that the previous 10-year reactor vessel examinations were completed and even with the allowed 1-year extension, the time between successive examinations will be less than the 11 years allowed by the Code. In order for the licensee to perform these examinations before October 13, 2004, SPS Unit 1 would have to be shut down earlier than the Fall 2004 outage. In addition, the licensee could not perform these inspections during the Spring 2003 outage because they were replacing the upper head during this outage and were restricted in the time available to perform the necessary inspections. Therefore, to have performed these examinations as previously scheduled during the reactor vessel head replacement would have

been a significant hardship without a compensating increase in quality or safety. The examinations to date and the licensee's proposed schedule to perform these examinations no later than December 31, 2004, provides reasonable assurance of structural integrity of the subject components.

#### 4.0 CONCLUSION

For Request for Relief CMP-28, Revision 1, the NRC staff concludes that the Code requirements are a significant hardship without a compensating increase in quality and safety. Furthermore, the NRC staff concludes that the licensee's proposed alternative provides reasonable assurance of structural integrity of the subject components. Therefore, the licensee's request for relief is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) until December 31, 2004. All other requirements of the ASME Code, Sections III and XI, for which relief has not been specifically requested remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

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Date: November 4, 2003

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