#### VIRGINIA ELECTRIC AND POWER COMPANY RICHMOND, VIRGINIA 23261 April 17, 2009

U.S. Nuclear Regulatory Commission Attention: Document Control Desk Washington, D.C. 20555 Serial No. 09-115 NL&OS/ETS R0 Docket No. 50-339 License No. NPF-7

# VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION) NORTH ANNA POWER STATION UNIT 2 USE OF ALTERNATIVE CLASS 1 PRESSURE TEST REQUIREMENTS RELIEF REQUEST SPT-014

Pursuant to 10 CFR 50.55a(a)(3)(ii), Dominion requests approval to use an alternative to the system hydrostatic pressure test requirements of the American Society of Mechanical Engineers (ASME) Code, Section XI, 1995 Edition with 1996 Addenda, Examination Category B-P, for segments of Class 1 Reactor Coolant Pressure Boundary (RCPB) piping on North Anna Unit 2. The requested alternative will be a visual examination of a segment of the Auxiliary Spray Piping during the Class 1 system pressure test with the valves in the normal position. Relief Request SPT-014 is included in the attachment to this letter.

Dominion requests the use of ASME Code Section XI, Table IWB-2500-1 and IWB 5221 System Leakage Test as an alternative to the hydrostatic test requirements for this piping segment. A visual examination (VT-2) will be performed at nominal operating pressure associated with 100% reactor power after satisfying the ASME Code required hold time. The request for the use of the alternative to the hydrostatic test requirements is pursuant to provisions of 10 CFR 50.55a(a)(3)(ii), in that performing the hydrostatic test creates a hardship without a compensatory increase in the level of quality and safety.

The hydrostatic pressure test requirements associated with the end of the third Inservice Inspection Interval will be performed during the North Anna Unit 2 spring 2010 refueling outage. Consequently, the approval of Relief Request SPT-014 is requested by December 31, 2009 to support the performance of the alternative system hydrostatic pressure test requirements.

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If you should have any questions regarding this submittal, please contact Mr. Thomas Shaub at (804) 273-2763.

Sincerely,

J. Alan Price Vice President – Nuclear Engineering

Attachment: Relief Request SPT-014

Commitments made in this letter: None

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Serial No. 09-115 Docket No. 50-339

# USE OF ALTERNATIVE CLASS 1 PRESSURE TEST REQUIREMENTS ALTERNATIVE REQUEST SPT-014

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNIT 2

### 10 CFR 50.55a Request Number SPT-014 Alternative Auxiliary Spray Pressure Test Requirements

## Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii) Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety

#### 1.0 ASME CODE COMPONENTS AFFECTED

The Code component associated with this request is the Class 1 NPS 2" Auxiliary Spray Piping, which is part of the Reactor Coolant Pressure Boundary (RCPB) that requires a system hydrostatic pressure test once each 10-year inspection interval.

#### 1.1 Category and System Details:

Code Class: Class 1

System: Chemical and Volume Control System

Examination Category: B-F

Item Number: B15.50 and B15.70

#### 1.2 Component Descriptions:

NPS 2" Auxiliary Spray Piping Segment Boundary (valve-to-valve) from 2-CH-HCV-2311 to 2-CH-341 Approximate length - 100 feet

#### 2.0 APPLICABLE CODE EDITION AND ADDENDA

North Anna Power Station Unit 2 is currently in the third 10-year ISI Interval which began on December 14, 2001. The Unit 2 ASME Boiler and Pressure Vessel Code (ASME Code) of record for the current interval is the 1995 Edition with 1996 Addenda.

#### 3.0 APPLICABLE CODE REQUIREMENTS

All Class 1 RCPB components including the subject pipe segment are required to be pressure tested in accordance with Table IWB-2500-1, Examination Category B-P. A VT-2 visual examination of the auxiliary spray piping is also required in accordance with Table IWB-2500-1, Category B-P, Items B15.50 and B15.70, Note 2 IWB-5222(b). The Code requires that all Class 1 components within the system pressure boundary be pressurized at or near the end of each inspection interval.

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#### 4.0 REASON FOR REQUEST

Pressurizer pressure is maintained via normal pressurizer spray, which uses the Reactor Coolant Pumps (RCP). Normal pressurizer spray is controlled by the pressurizer Pressure Control System which automatically controls the pressurizer environment. The primary purpose of the auxiliary spray line is for pressure control when the RCPs are not running (i.e., during a post accident condition when it is desired to decrease Reactor Coolant System (RCS) pressure). Operation of the auxiliary spray line at hot standby or power would lead to an unnecessary plant transient. To meet Code requirements the normally closed upstream isolation valve 2-CH-HCV-2311 must be opened to pressurize the subject pipe segment. Water in this line is supplied from the Charging System which operates at a pressure slightly greater than the RCS normal operating pressure. Therefore, opening of valve 2-CH-HCV-2311 at hot standby or power would increase pressurizer spray flow which will cause an adverse reduction in RCS pressure. In addition, this piping segment is at containment ambient temperature and with the RCS at normal operating temperature, this test would create a thermal shock transient in the spray piping and spray nozzle.

#### 5.0 PROPOSED ALTERNATIVES AND BASIS FOR USE

The RCPB pipe segment described in this request is a portion of the auxiliary pressurizer spray line, which is not normally pressurized. This request proposes to perform an ASME Code Section XI, Table IWB-2500-1 and IWB-5221 system leakage test with the isolation valve 2-CH-HCV-2311 in the normally closed position as an alternative to the hydrostatic test requirements for this piping segment. This examination will be performed at nominal operating pressure associated with 100% reactor power after satisfying the ASME Code required hold time.

Testing of this piping segment at full RCS operating pressure does not provide a compensating increase in the level of quality or safety for the following reasons:

- 1. The design pressure rating of this piping segment is the same as the RCPB; however, the operating pressure of the piping segment is well below the normal RCS operating pressure.
- 2. This segment is isolated from the RCS pressure under normal operating conditions.
- 3. This segment is subject to ASME Code required VT-2 visual examination. This examination is performed with the segment isolated from the RCS and the RCS at its normal operating pressure and temperature. This examination is performed each refueling

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outage and is sufficient to identify any structural defects that could potentially challenge the integrity of the segment during normal operation.

Virginia Electric and Power Company (Dominion) has determined that compliance with the hydrostatic test requirements for this piping segment for North Anna Power Station Unit 2 results in an unnecessary hardship and adverse impact to plant equipment without a sufficient compensating increase in the level of quality and safety. Therefore, Dominion requests approval of this alternative pursuant to the provisions of 10 CFR 50.55a(a)(3)(ii).

#### 6.0 DURATION OF PROPOSED ALTERNATIVE

The proposed alternative to the ASME Code is applicable for the remainder of the third 10-year Inservice Inspection (ISI) Interval at NAPS Unit 2. This alternative will be used during the system leakage test conducted at or near the end of the third inspection interval.

#### 7.0 PRECEDENTS

Similar alternatives to the hydrostatic test requirements of ASME Code Section XI have been approved for Indian Point Units 2 and 3 and Kewaunee Power Station. The differences in the Code requirements taken to establish the basis for the approval of this request result in the same approved objective of not pressurizing test portions of the Class 1 RCPB to full RCS pressure when a thermal transient would occur. The safety evaluations for the precedents cited are below.

- 1. Indian Point Generating Units 2 and 3, dated December 7, 2005 (ADAMS Accession No. ML053110525).
- 2. Kewaunee Power Station, dated February 18, 2005 (ADAMS Accession No. ML050350225).

#### 8.0 REFERENCES

1. 1995 Edition, ASME Code, Section XI, with the 1996 Addenda.

#### 9.0 ATTACHMENTS

1. Flow/Valve Operating Numbers Diagrams 12050-FM-095C, Sheet 1 12050-FM-093B, Sheet 1



