

December 18, 2013

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Serial No. 13-648  
NAPS/JHL R0  
Docket Nos. 50-338, 339  
License Nos. NPF-4, 7

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)**  
**NORTH ANNA POWER STATION UNITS 1 AND 2**  
**REQUEST FOR ALTERNATIVE TO REQUIREMENTS OF**  
**ASME BOILER AND PRESSURE VESSEL CODE**  
**REQUEST FOR ALTERNATIVE - IWE1**

Pursuant to 10CFR50.55a(a)(3)(i), Dominion requests NRC approval of the attached request for an American Society of Mechanical Engineers (ASME) alternative associated with the Second 10-Year Containment Inservice Inspection (ISI) Program Interval for North Anna Power Station Units 1 and 2. The second interval of the North Anna 1 and 2 Containment ISI Program complies with the ASME Boiler and Pressure Vessel (B&PV) Code, Section XI Rules for Inservice Inspection of Nuclear Power Plant Components, 2001 Edition with 2003 Addenda.

The steel liners used for the North Anna Units 1 and 2 concrete containments are Class MC components. Minor containment liner repair activities [two liner test connections (< ½ inch) in each unit] were performed in accordance with the North Anna Repair/Replacement Program during previous refueling outages (N1R20 and N2R20). Detailed visual and surface (liquid penetrant) examinations were performed satisfactory in accordance with the ASME Section XI. Consistent with IWE-5222, the pressure tests of the repairs were deferred to the next scheduled 10CFR50, Appendix J pressure test. However, ASME Section XI, IWE-5240 specifies a detailed visual inspection concurrently with the pressure test for the repair. A 10CFR50, Appendix J pressure test is to be performed, but the repaired/replaced areas of the containment liner will be inaccessible during the pressure test, and the concurrent detailed visual examination required by IWE-5240 is not possible.

The attached request for alternative would permit extending ASME Code Case N-649 applicability to the 2001 Edition / 2003 Addenda for use in the North Anna Units 1 and 2 second 10 year Containment Inservice Inspection Interval. Approval of this request allows previously performed detailed visual examinations as substitutes for the concurrent detailed visual examinations required by IWE-5240.

NRC approval of the attached alternative is requested on the basis that performing visual examinations of North Anna Units 1 and 2 containment liners during post repair pressure test (Type A test) as required by IWE-5240 are not possible due to the

A047  
NRR

containments inaccessibility during the pressure test. The proposed alternative will provide an acceptable level of quality and safety.

Dominion requests to implement this alternative to the ASME Code up to the next scheduled 10CFR50 Appendix J pressure test (Type A) for any repair/replacement activity occurring in the second 10-year Containment Inservice Inspection (CISI) interval at North Anna Power Station Unit 1 and Unit 2, which will end on October 6, 2017 for Unit 1 and October 11, 2018 for Unit 2. Dominion requests approval of this request for alternative by September 1, 2014 to support the upcoming North Anna Unit 2 refueling outage.

If you have any questions or require additional information, please contact Mr. Thomas Shaub at (804) 273-2763.

Respectfully,



M. D. Sartain  
Vice President – Nuclear Engineering and Development

Commitments made in this letter: None

Attachment - North Anna Power Station Units 1 and 2 Request for Alternative IWE1

cc: U.S. Nuclear Regulatory Commission  
Region II  
Marquis One Tower  
245 Peachtree Center Avenue, NE  
Suite 1200  
Atlanta, Georgia 30303-1257

Mr. J. E. Reasor, Jr.  
Old Dominion Electric Cooperative  
Innsbrook Corporate Center  
4201 Dominion Blvd.  
Suite 300  
Glen Allen, Virginia 23060

NRC Senior Resident Inspector  
North Anna Power Station

Ms. K. R. Cotton-Gross  
NRC Project Manager  
U. S. Nuclear Regulatory Commission  
One White Flint North  
Mail Stop O-8 G9A  
11555 Rockville Pike  
Rockville, Maryland 20852

Dr. V. Sreenivas  
NRC Project Manager  
U. S. Nuclear Regulatory Commission  
One White Flint North  
Mail Stop 08 G-9A  
11555 Rockville Pike  
Rockville, MD 20852-2738

**ATTACHMENT**

**CONTAINMENT INSERVICE INSPECTION PROGRAM  
SECOND 10-YEAR INTERVAL**

**REQUEST FOR ALTERNATIVE IWE1**

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)  
NORTH ANNA POWER STATION UNITS 1 AND 2**

**Virginia Electric and Power Company (Dominion)  
North Anna Power Station Unit 1 and Unit 2  
Second 10 Year Interval  
1/2-NAPS-RR-IWE1 ASME Code Case N-649**

**Proposed Alternative in Accordance with 10CFR50.55a(a)(3)(i)**

**-- Alternative Provides Acceptable Level of Quality or Safety --**

**1.0 ASME CODE COMPONENTS AFFECTED**

|                       |  |
|-----------------------|--|
| Code Class:           | MC   |
| Reference:            | ASME Code, Section XI, Paragraphs IWE 5221, IWE-5240, and ASME Code Case N-649 |
| Examination Category: | E-A  |
| Item Number:          | E1.10 and E1.12  |
| Description:          | Containment metallic liner   |
| Component Number:     | Various  |

**2.0 APPLICABLE CODE EDITION AND ADDENDA**

North Anna Power Station Units 1 and 2 are currently in the second 10-year Containment Inservice Inspection Interval which began on October 7, 2007 for Unit 1 and October 12, 2008 for Unit 2. The ASME Boiler and Pressure Vessel Code (ASME Code) of record for the current interval is the 2001 Edition with 2003 Addenda.

**3.0 APPLICABLE CODE REQUIREMENTS**

The ASME Code, Section XI, Paragraph IWE-5221, "System Pressure Tests: Tests following Repair/Replacement Activities: Except as noted in IWE-5222, repair/replacement activities performed on the pressure retaining boundary of Class MC or Class CC components shall be subjected to a pneumatic test in accordance with the provisions of Title 10, Part 50 of the Code of Federal Regulations, Appendix J, Paragraph IV.A."

The ASME Code, Section XI, Paragraph IWE-5240, "Visual Examination: During the pressure test required by IWE-5220, a detailed visual examination (IWE-2310) shall be performed on areas affected by repair/replacement activities."

**4.0 REASON FOR REQUEST**

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative will provide an acceptable level of quality and safety.

ASME Section XI repair/replacement activities were performed on the Unit 1 and Unit 2 containments. Detailed visual and surface (liquid penetrant) examinations were performed in accordance with ASME Section XI.

ASME Section XI, IWE-5240 requires a detailed visual inspection of the repair/replacement area concurrent with the pressure test. ASME Section XI, IWE-5222 allows deferral of the pressure test until the next scheduled leakage test for minor repair/replacement activities. A 10CFR50, Appendix J pressure test is to be performed, but the repaired/replaced components will be inaccessible during the pressure test, and the concurrent detailed visual examination for IWE-5240 is not possible.

If a 10CFR50 Appendix J pressure test (Type A) is deferred, ASME Code Case N-649, "Alternative Requirements for IWE-5240 Visual Examination" provides the alternative to perform the visual examination upon completion of the repair/replacement and complete the pressure test at a later scheduled date.

NRC Regulatory Guide 1.147, Revision 16, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," lists ASME Code Case N-649 as acceptable for use with no conditions or limitations. However, the Code Case N-649 visual examination requirements are limited to the 1998 Edition with the 2000 Addenda.

## **5.0 PROPOSED ALTERNATIVES AND BASIS FOR USE**

North Anna Power Station Units 1 and 2 request extending ASME Code Case N-649 applicability to the 2001 Edition / 2003 Addenda of ASME Section XI for use in the North Anna second 10 year Containment Inservice Inspection Interval.

The requirements of Paragraphs IWE-5221 and IWE-5240 in the 2001 Edition / 2003 Addenda are identical to those in the 1998 Edition / 2000 Addenda. Code Case N-649 will permit crediting the scheduled Type A, Type B or Type C test, regardless of deferral, as the required pressure test for a containment repair/replacement activity.

ASME Section XI, Paragraph IWE-5210 states that except as noted within Paragraph IWE-5240, the requirements of Article IWA-5000 are not applicable to Class MC or Class CC components. Paragraph IWE-5240 states that the requirements of IWE-2310 for detailed visual examination are applicable.

A detailed visual examination in accordance with IWE-2310 prior to the Appendix J pressure test is adequate to assess the condition of the surfaces affected by repair/replacement activities and to determine the magnitude and extent of any deterioration and distress of these surfaces.

Dominion has determined that compliance with the pressure test requirements to perform a detailed visual examination during the 10CFR50 Appendix J pressure test is not possible. The proposed alternative provides an acceptable level of quality and safety. The pressure testing in accordance with 10CFR50 Appendix J provides an additional verification of the integrity of the welds. Therefore, Dominion requests approval of this alternative pursuant to the provisions of 10CFR50.55a(a)(3)(i).

## **6.0 DURATION OF PROPOSED ALTERNATIVE**

The proposed alternative to the ASME Code is applicable up to the next scheduled 10CFR50 Appendix J pressure test (Type A) for any repair/replacement activity occurring in the second 10-year Containment Inservice Inspection (CISI) interval at North Anna Power Station Unit 1 and Unit 2, which will end on October 6, 2017 for Unit 1 and October 11, 2018 for Unit 2.

## **7.0 PRECEDENTS**

Similar relief requests to extend ASME Code Case N-649 applicability was approved or submitted for approval for the following utilities:

- Three Mile Island Unit 1 (NRC Safety Evaluation Report dated July 20, 2011 – ADAMS Accession ML111730475)
- Braidwood Station, Units 1 and 2 (NRC Safety Evaluation Report dated September 4, 2013) - ADAMS Accession ML13246A019
- Proposed Alternative to Utilize Code Case N-649, "Alternative requirements for IWE-5240 Visual Examination Section XI, Division 1 - ADAMS Accession ML13270A060

## **8.0 REFERENCES**

Case N-649 – Alternative Requirements for IWE-5240 Visual Examination Section XI, Division 1