



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

May 21, 2019

Mr. Daniel G. Stoddard  
Senior Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Blvd.  
Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION, UNIT NO. 1 – INSERVICE INSPECTION  
ALTERNATIVE REQUEST N1-I4-CS-002 (EPID L-2018-LLR-0128)

Dear Mr. Stoddard:

By letter dated September 26, 2018 (Agencywide Documents Access and Management System Accession No. ML18275A105), Virginia Electric and Power Company (the licensee) submitted a request for a proposed alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, to the U.S. Nuclear Regulatory Commission (NRC) for the North Anna Power Station (North Anna), Unit No. 1. Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Paragraph 55a(z)(2), the licensee requested the NRC to authorize the use of an alternative to allow an extension to the snubber examination and testing program for the fourth 10-year inservice inspection (ISI) interval for North Anna, Unit No. 1, on the basis that compliance with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that complying with the ASME Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, the NRC staff authorizes the use of alternative request N1-I4-CS-002 for North Anna, Unit No. 1 for the fourth 10-year ISI program interval for snubbers, which began on May 1, 2009, and is now scheduled to end on December 14, 2020. Additionally, alternative request N1-I4-CS-001, Revision 1, for North Anna, Unit No. 1, authorized previously by the NRC staff is now authorized under 10 CFR 50.55a(z)(1) for the extended fourth ISI 10-year interval for snubbers, from May 1, 2009, through December 14, 2020.

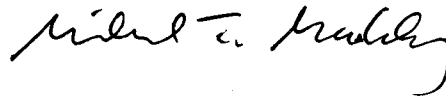
All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request for alternative remain applicable.

D. Stoddard

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If you have any questions, please contact the Project Manager, Randy Hall, at 301-415-4032 or via e-mail at [Randy.Hall@nrc.gov](mailto:Randy.Hall@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Michael T. Markley". The signature is written in a cursive style with a large, sweeping initial "M".

Michael T. Markley, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-338

Enclosure:  
Safety Evaluation

cc: Listserv



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
REQUEST FOR ALTERNATIVE N1-I4-CS-002 RELATED TO  
FOURTH & FIFTH 10-YEAR INTERVAL INSERVICE INSPECTION & TESTING PROGRAM  
VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION ENERGY VIRGINIA)  
NORTH ANNA POWER STATION, UNIT NO. 1  
DOCKET NO. 50-338

1.0 INTRODUCTION

By letter dated September 26, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18275A105), Virginia Electric and Power Company (Dominion Energy Virginia, the licensee) submitted an alternative to the requirements of the American Society of Mechanical Engineers Boiler & Pressure Vessel (ASME BPV) Code Section XI "Rules for Inservice Inspection of Nuclear Power Station Components," associated with snubber examination and testing at the North Anna Power Station (North Anna) Unit No. 1.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee requested to use the proposed alternative in request N1-I4-CS-002 on the basis that the ASME BPV Code Section XI requirements present an undue hardship, without a compensating increase in the level of quality and safety.

The North Anna, Unit No. 1 fourth 10-year inservice inspection (ISI) program interval started on May 1, 2009 and is scheduled to end on April 30, 2019. This proposed alternative requests an extension of the North Anna, Unit No. 1, fourth 10-year ISI interval for snubber examination and testing until December 14, 2020.

2.0 REGULATORY EVALUATION

Regulations in 10 CFR 50.55a(g), "Preservice and Inservice Inspection Requirements," states, in part, that ISI of certain ASME Code Class 1, 2, and 3 components (including supports) be performed in accordance with the specified ASME BPV Code Section XI (or ASME Operation and Maintenance of Nuclear Power Plant (OM) Code for snubber examination and testing) and applicable addenda incorporated by reference in the regulations.

Regulations in 10 CFR 50.55a(b)(3)(v)(A), "Snubbers: First provision," states, in part, that licensees may use Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Power Plants," of the ASME OM Code 1995 Edition through the latest edition and addenda incorporated by reference in

10 CFR 50.55a(a)(1)(iv), in place of the requirements for snubbers in the editions and addenda up to the 2005 Addendum of the ASME BPV Code Section XI.

Regulations in 10 CFR 50.55a(b)(3)(v)(B), "Snubbers: Second provision," states, in part, that licensees must use Subsection ISTD of the ASME OM Code for snubber examination and testing when using 2006 addenda and later editions and addenda of Section XI of the ASME BPV Code.

Regulations in 10 CFR 50.55a(z) states that alternatives to the requirements of paragraphs (b) through (h) of 10 CFR 50.55a may be used, when authorized by the Nuclear Regulatory Commission (NRC), if the licensee demonstrates that: (1) the proposed alternatives provide an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

### 3.0 TECHNICAL EVALUATION

The licensee has requested to use the proposed alternative described below for the North Anna, Unit No. 1, snubber program. The proposed alternative for the snubber program encompasses the total number of Unit No. 1 snubbers inspected as safety-related, which includes 326 small-bore (8-inch bore and less) snubbers and 12 large-bore snubbers (attached to steam generators).

#### 3.1 Licensee's Alternative Request N1-I4-CS-002

The licensee requested an alternative to the snubber examination and testing requirements of the ASME BPV Code Section XI for all snubbers within the scope of the North Anna, Unit No. 1, snubber program. The licensee is requesting the following: an extension of the North Anna, Unit No. 1, fourth 10-year ISI interval for the snubber program to align it with the North Anna, Unit No. 2, fourth 10-year ISI interval for the snubber program; to align the North Anna, Unit Nos. 1 and 2, fifth 10-year inservice testing (IST) intervals for snubber programs to the fifth 10-year IST intervals for pump and valve programs for both units; and to extend the NRC-approved relief request N1-I4-CS-001, Revision 1 (ADAMS Accession No. ML091350058), for the fourth 10-year ISI interval for snubbers originally scheduled (and approved) from May 1, 2009, through April 30, 2019, to December 14, 2020. The NRC staff approved an alternative for snubber visual inspection and functional testing in granting relief request N1-I4-CS-001, Revision 1.

#### Applicable Code Edition/Addenda

The applicable ASME BPV Code Section XI edition and addenda for the North Anna, Unit No. 1, fourth 10-year ISI interval for the snubber program is the 2004 Edition with no Addenda. For the North Anna, Unit No. 1, fifth 10-year ISI interval, the applicable Code is the ASME BPV Section XI 2013 Edition. For the North Anna, Unit No. 1, fifth 10-year IST interval, the applicable Code is the ASME OM Code, 2012 Edition.

The snubber inservice examination and testing requirements have been deleted from the 2006 Addenda and later Editions of Section XI of the ASME BPV Code. The regulations in 10 CFR 50.55a(b)(3)(v)(B) require licensees to use the ASME OM Code for snubber inservice examination and testing when using the 2006 Addenda and later Editions of Section XI of the

ASME BPV Code. Therefore, for the North Anna Unit No. 1 fifth 10-year IST interval for the snubber program, the licensee will be using the ASME OM Code.

#### Applicable Code Requirements

ASME Section XI, IWA-2430(b), "Inspection Interval," requires the inspection to be determined by calendar years following placement of the plant into commercial service.

ASME Section XI, IWA-2432, "Inspection Program B," specifies that the first inspection interval is 10 years following the initial start of plant commercial service and that each successive inspection interval is 10 years following the previous inspection interval, except as modified by IWA-2430(d).

ASME Section XI, IWA-2430(d)(1), states that each inspection interval may be extended by as much as one year. Adjustment shall not cause successive intervals to be altered by more than one year from the original pattern of intervals.

#### Reason for Request

The licensee states, in part:

The current North Anna Power Station (NAPS) Unit 1 and 2 ASME O&M Code, (2004 Ed.) Pump and Valve Programs IST intervals end on December 14, 2020. The NAPS Unit 1 snubber inspection and testing program is currently contained in the NAPS Technical Requirements Manual (TRM) in lieu of ASME Code, Section XI, Article IWF, as approved in Relief Request N1-I4-CS-001-R1 ([ADAMS] Accession No. ML091350058), which ends on April 30, 2019. This request for alternative is needed to transition from ASME Code, Section XI and the NAPS TRM with Unit 1 and Unit 2 snubber programs having different ending dates to the NAPS IST program, scheduled to end on December 14, 2020. Although [NAPS] Unit 1 was shutdown for approximately three months during the Fourth interval because of the seismic event earthquake in 2011, this timeframe is not enough to meet the eight months [beyond the 12 months allowed by IWA-2430(d)(1)] (4/2019 thru 12/2020) required to align with 10-year inspection interval update.

NAPS Units 1 and 2 will transition the snubber programs to the IST Programs in accordance with the ASME O&M Code of record (currently 2012 Ed.), which includes Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants." Transitioning the snubber programs for Units 1 and 2 at different times, NAPS 1 on May 1, 2019, and NAPS 2 on December 14, 2020, would require a significant amount of administrative activity (e. g., administrative procedure changes, reconciliation of ASME O&M Code differences, technical procedure changes, etc.), without enhancement of quality and safety. Additionally, the Snubber Programs would not be aligned with the rest of the IST Program. This request for alternative is to extend the existing TRM snubber program requirements through the NAPS 1 Fall 2019, refueling outage N1R27, which will continue to accomplish the intended program requirements of ASME O&M Code, Subsection ISTD until full conversion of NAPS Units 1 and 2 to ASME O&M Code, Subsection ISTD requirements with the Fifth interval update of the NAPS IST Programs by

December 14, 2020. Performance of the TRM snubber program requirements during previous intervals has continued to verify the reliability and safety of the affected snubber components.

### Licensee's Proposed Alternative

The licensee proposed an alternative to the North Anna, Unit No. 1, fourth ISI interval for snubber examination and testing program duration requirements of IWA-2430(b) and (d) and IWA-2432.

The licensee proposes to extend the North Anna, Unit No. 1, fourth 10-year ISI interval for the snubber program by approximately 8 months beyond the Code-allowed one-year extension, from April 30, 2019, to December 14, 2020. This will allow the alignment of both North Anna units to share a common inspection and testing interval and to implement the same ASME OM Code Edition 2012 for the snubber programs during the subsequent fifth 10-year interval. Additionally, with both units applying the ASME OM Code Edition 2012, the fifth 10-year intervals for the snubber programs will align with the fifth 10-year IST programs for pumps and valves for both North Anna units.

The licensee also requested to extend the NRC-approved alternative in relief request N1-14-CS-001-R1 for snubber examination and testing for the North Anna Unit No. 1 fourth 10-year ISI interval (scheduled to end on April 30, 2019), to December 14, 2020.

### 3.2 NRC Staff Evaluation

The 2004 Edition of the ASME BPV Code Section XI, IWA-2430(d)(1), states that each ISI interval may be extended as much as one year and interval adjustments shall not cause successive intervals to be altered by more than one year from the original pattern of intervals.

The North Anna, Unit No. 1, fourth 10-year ISI interval for the snubber program ends on April 30, 2019, and the North Anna, Unit No. 2, fourth 10-year ISI interval for the snubber program ends on December 13, 2020. Currently, North Anna Unit Nos. 1 and 2 have different 10-year ISI interval dates for snubber inservice examination and testing programs. This may result in different governing Code editions in subsequent 10-year intervals, which may require the implementation of different Code requirements and administrative procedures between units. The proposed alternative will synchronize the 10-year interval for snubber programs between Units 1 and 2. As required by 10 CFR 50.55a(b)(3)(v)(B), the common Code of Record will be the 2012 Edition of the ASME OM Code for the fifth 10-year IST interval for the snubber programs for both units. There is an advantage in implementing the same Code requirements at both units in the same interval. The advantage includes the reduction of administrative burden of maintaining different sets of procedures and requirements and results in a significant decrease in the chance of applying the wrong requirements. The NRC staff considers it a hardship for the licensee to perform these tasks at different dates within a few months. Additionally, the North Anna, Unit Nos. 1 and 2, fifth 10-year IST intervals for pump and valve programs are also based on the ASME OM Code. Therefore, the licensee would like to align the snubber program with the rest of the IST program for pumps and valves for the fifth 10-year IST interval at North Anna, Unit Nos. 1 and 2, to reduce the associated administrative activities. The NRC staff concludes that the proposed extension of the North Anna, Unit No. 1, fourth 10-year ISI interval for the snubber program by approximately eight months beyond the Code-allowed one-year extension, from April 30, 2019 to December 14, 2020, in order to align the North Anna, Unit No. 1 and Unit No. 2, fifth 10-year interval snubber programs with the North

Anna, Unit No. 1 and Unit No. 2, fifth 10-year IST interval for pump and valve programs, is acceptable.

The NRC staff previously authorized the use of an alternative for snubber examination and testing as described in relief request N1-I4-CS-001-R1 for North Anna Unit No. 1 for the fourth ISI 10-year interval, which is scheduled to end on April 30, 2019. As proposed in the current request for alternative N1-I4-CS-002, the licensee will continue performing the alternative examination and testing of snubbers as approved in relief request N1-I4-CS-001-R1, through the extended interval ending on December 14, 2020. The NRC staff finds that this extension of the interval for the previously approved alternative is of short duration and that the existing program has continued to verify the reliability and safety of the snubber components. Therefore, the NRC staff concludes that the alternative will continue to provide an acceptable level of quality and safety during the extended interval.

#### 4.0 CONCLUSION

As set forth above, the NRC staff determined that the proposed alternative N1-I4-CS-002 for North Anna Unit No. 1 provides reasonable assurance that the affected snubber components can perform their safety function. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2) for alternative request N1-I4-CS-002. Therefore, the NRC staff authorizes the use of the alternative request N1-I4-CS-002 for North Anna Unit No. 1 for the fourth 10-year ISI program interval for snubbers, which began on May 1, 2009, and is now scheduled to end on December 14, 2020. Additionally, previously NRC-authorized alternative request N1-I4-CS-001-R1 for North Anna Unit No. 1 is authorized under 10 CFR 50.55a(z)(1) for the extended fourth 10-year ISI interval for snubbers, from May 1, 2009, through December 14, 2020.

All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request for relief remain applicable.

Principal Contributor: Gurjendra S. Bedi, NRR

Date: May 21, 2019

SUBJECT: NORTH ANNA POWER STATION, UNIT NO. 1 – INSERVICE INSPECTION  
ALTERNATIVE REQUEST N1-I4-CS-002 (EPID L-2018-LLR-0128)  
DATED MAY 21, 2019

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